

DIGITAL STORM

FRESH BUSINESS STRATEGIES FROM THE ELECTRONIC MARKETPLACE

PHILIPP GERBERT ALEX BIRCH WITH GERD SCHNETKAMP DIRK SCHNEIDER



CAPSTONE

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Foreword

Dear Reader,

Digital Storm – a well-chosen paradigm for describing the forces of the electronic marketplace transforming our economy. The onset of the storm has advanced many enterprises, but few companies have sailed through the turbulences unscathed, and some ill-equipped ones have already foundered.

Digital Storm is a timely book. The Internet hype has collapsed. Were you surprised? There was ample warning as the bubble inflated. Having for decades worked hard to enable enterprises become e-businesses I was first astonished, then irritated and in the end deeply concerned by the boundless boom. When promises and expectations decouple from reality the awakening can be ugly. *But the counter reaction risks destroying the truly innovative along with the superfluous.* After the glorifying flood of e-commerce publications, we will get the vilifying one. I thus welcome the current book, which summarizes what has been learnt, distils the many intriguing developments and provides guidance to companies seeking to define their course.

Digital Storm is an important book. As the authors emphasize, *Digital Storm* is not about the Internet – it is about doing business in the 21st century. And business is about enabling people to collaborate to create value. In these tempestuous times it is imperative that you rethink your business and make sure you leverage technology intelligently to build true customer value. The electronic marketplace enables you to improve and innovate, without throwing past achievements overboard.

Digital Storm is an insightful book. If you only have a few minutes, read the thought-provoking dialogue “*The Mystery of the Electronic Marketplace*” between Sherlock Holmes and Watson in the prologue to the book. It gives you a taste for the things to come: A fresh perspective triggers renewed interest in well-known developments, and entirely new concepts are put forward.

Whether you agree with the authors or not, their ideas are always challenging. Also, the many examples and “searchlights” provide for an easy access to the material presented.

We at SAP have so far steered through the “Digital Storm” following one unconditional guiding principle: Serving our customers well. Yes, this has prevented us from adopting many “bleeding edge” applications and we have at times been criticized for not following the latest fashions fast enough. But in the end our strategy has paid off. Our core product line *mySAP.com* offers enterprises innovative e-business tools while preserving the achievements of past process improvements. Our platform combines customized, role-specific integration with coherent industry-specific solutions, building on a deep business experience and a strong partner network. We are likewise strong believers in the value proposition of electronic markets and collaborative networks as analyzed by the authors of this book. *SAPMarkets* – developed in collaboration with our strategic partner CommerceOne – offers comprehensive solutions for all three major types of markets: purchasing platforms, intermediary marketplaces and sell-side portals. But again it provides seamless integration to the systems and processes of the participants, which is critical for reaping the bottom-line benefits.

No company doing business in the 21st century can escape the Digital Storm. You can be ill-prepared or well-prepared. I’d rather you be well-prepared. Absorbing the lessons of the current book will be a rewarding investment of your time.

Let me conclude by wishing you an enjoyable reading,

Hasso Plattner
CEO SAP

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Prologue: The Mystery of the Electronic Marketplace

Our comfortable lodgings at 221b Baker Street were threatening to become uncomfortably noisy.

“I still cannot believe you took on this case, Holmes. ‘The Mystery of the Electronic Marketplace’ – do not tell me you smell a crime! Do you want to embarrass your old friend and follower after so many years?”

“Watson, dear friend, don’t be such a spoilsport. I did not take on the ‘case’ as you call it. I just offered to spend half an hour answering three questions. This does not mean I am changing my course. No man lives or has ever lived who has brought the same amount of study and of natural talent to the detection of crime which I have done. So, our client, quite a decent fellow actually, considers the fate of the Electronic Marketplace a big mystery and has asked us for help. Why deny it? Let us see, whether I, without any specific preparation, can shed some light on this topic. Should this not be worth some 30 minutes out of the 44 million I minimally intend to live?”

Well, my friend certainly had not lost his familiar self-confidence. Opposing him would undoubtedly prove fruitless, so I decided to go along.

“Well, Holmes, here is the first question:

“‘Are there any fundamental reasons why the trade between businesses should become predominantly electronic?’”

“Why don’t you go ahead and answer this one yourself, Watson.”

As always when Holmes asked me to state my opinion, I could not suppress a sense of pride in his confidence in me. At the same time there was always a lingering concern that even the smallest loophole in my reasoning would relentlessly be exposed by my friend’s razor-sharp logic.

“In my view, the events of recent years speak for themselves. While there is certainly a place for electronic marketplaces in our economy, the idea that electronic business was going to dominate all commercial activities between companies has been relegated to the myths of the late twentieth century. This myth now sits comfortably between nuclear plants providing us with limitless energy and supersonic flights becoming the standard means of transportation.”

“The facts, Watson, the facts. You are asked for fundamentals and instead you summarize headlines how electronic marketplaces are doing as a fashion.”

I did not try to hide my indignation.

But Holmes continued: “How about this for the facts.

The exponential motors¹

“The processing power of chips doubles every eighteen months. Storage capacity likewise doubles every eighteen months. Bandwidth power doubles every six months. And the usefulness of the Internet (as measured by new sets of people who can communicate) doubles with every new user. These users number a mere 300 million according to current estimates. By the way, I call this latter the ‘Holmes Law’ for many-to-many communication.² It grows much faster than the commonly quoted ‘Metcalf law’ for one-to-one communication.”

I stared at my old friend in disbelief. Who was going to understand such an answer about motors?

“I see that you fail to grasp the meaning of exponential growth. Shame on you, Watson, as a medical doctor you should have had a better scientific education! Remember the wise Chinese knight (or should I say businessman) who asked his emperor for a humble remuneration in rice, starting with one single grain and doubling it for every square on a chessboard. Well, on the last square alone he would have received 2^{64} grains of rice, which is over 18,000,000,000,000,000,000 or over 18 times a million times a million times a million grains of rice, comfortably exceeding the accumulated rice production throughout human history. This is the power of sustained exponential

growth – and if you want an answer as to whether there is a fundamental reason for electronic business, this is as close as you get. *People always overestimate the impact of technology in the short term and underestimate it in the long term.* As the computing and communication muscles swell, the infrastructure becomes so powerful that the digital marketplace ends up dominating commercial relationships between businesses. The so-called *electronic* marketplace will actually soon become *optical*, but I doubt our client is concerned about this aspect.

“However – there is a catch.”

“What catch?” I asked, still dumbfounded by the numbers and growth patterns thrown at me.

“I shall tell you later” Holmes answered, always adept at creating suspense and enjoying the power it gave him over people. To my great surprise he added with a twinkle: “Let me instead concede that your first answer was not entirely wrong.”

The collapse of e-topia

“Businesses have assumed that since the Internet was such a splendid tool, all ‘e-works’ they created with it would automatically turn into true masterpieces and fetch well-deserved high-flying valuations.

“Many of these ventures, however, have suffered from severe flaws. A number of ‘e-markets’ succumbed to megalomaniac tendencies, wanting no less than complete dominance over whole industries. They rightfully focused on capturing the large potential of many-to-many interactions and indeed produced highly intriguing innovations. Yet, they ignored the basic lesson that the very architecture of the Internet had taught: *Interlinked dynamic networks, as opposed to large centralized structures, are the superior organizational forms.* Today’s complex business relationships cannot thrive in a rigid corset of simplistic processes, as provided by many e-markets, any more than they could under central planning regimes. Instead, they need a flexible service network to support diversity and innovation.

“E-topia is now gone. It is an irony of fate that the Internet *hype* has faded at the very moment the *importance* of electronic business was becoming evident.”

“Humh!” I noisily cleared my throat to prevent my friend from dwelling on this issue any further. “Should we perhaps move over to the second question?” Holmes seemed a trifle irritated by the interruption, but signaled his consent with a brief nod. So I read:

“What are the biggest challenges today’s entrepreneurs face in building an attractive electronic business?”

“Ah, our dear ‘entrepreneurs.’ I detest the expression. Yet, I quite respect these fellows’ ability to get things done. Well, Watson, why don’t you have another go?”

Bravely I tried, already sensing that I would hardly escape some form of humiliation.

“An entrepreneur has to have an intimate know how of today’s business processes. He should identify and target inefficiencies therein. His business model should involve partnerships with powerful industry players. A fast path to profitability is crucial. When starting a new initiative a strong management team and solid financing are key success factors.”

“Watson, my friend, a well-trained business consultant could not have given a better answer.” Was this a compliment? “Unfortunately, however, these truisms tell you nothing about the real challenges in today’s world. Please note the following for our client:

“According to me, Sherlock Holmes, there are four major challenges.

One: the software gap

“The largest abyss between the advances in the fundamental technologies and our ability to leverage them is software. Software is our interface to make use of information technologies. But the advances in software development are pitiful – they remind me of the logarithmic snail pace of trial-and-error functions. Furthermore, as software engineers say, ‘God created the world in seven days,

because he had *no installed base*'. The legacy base separates the entrepreneur from the timely realization of his e-business creations. This 'software gap' is the catch I was referring to before.

Two: the financial slave syndrome

"If I had one free wish, I would have someone destroy once and for all the myth of efficient financial markets. Frankly, the financial community has yet to prove that it can tell the difference between the Internet and a tulip. Certainly 'Tulipmania' in the early seventeenth century in Holland showed a remarkably similar pattern of bloated valuations and speculations. It drove the prices of single bulbs well beyond those of estates and breweries and back into the ground (where they belong). A casual observer of Internet stocks might think it is tulips all over again."

"You are not suggesting, that financial markets are intrinsically unable to value companies, are you, Holmes?"

"The problem is not, my dear Watson, that financial markets, given enough time and lack of change, could not eventually establish adequate valuations. The trouble is that they cannot do so fast enough. Instead, the dynamics of markets are governed by entirely different laws of leader- and follower-ship – yet to be fully understood. John Maynard Keynes, who was declared a genius because he destroyed a similar myth of 'economic equilibrium', once remarked, *time-frames are of essence here, 'since in the long run we are all dead.'* Certainly no-one is better qualified than I myself to confirm this principle: In crime detection, timing is all-important.

"An entrepreneur is caught in a Catch 22. He can be hit by the hype, as nimble competitors with bloated valuations could suddenly swallow him. And can be hit by the bust, as his creditors and investors retract funds, often arbitrarily. Banking crises have taught us that even the soundest business can be brought down overnight by such events. In any case he is hit by the volatility. Barring a true understanding of investors, the entrepreneur strives to penetrate their psychology in the way slaves learn to interpret the moods of their masters. The hope that a good business will always attract solid investment is

as naïve today as the notion that an innocent man can never be found guilty in court.”

I had a hard time keeping pace with Holmes’ passionate description of the travails of an entrepreneur. While rapidly taking notes I started to picture the financial slave flailing in software gaps. But my friend was clearly not done.

Three: the categorical business prohibition

“Immanuel Kant, a once highly influential German philosopher, formulated a principle called the ‘categorical imperative’. Grossly simplified it states: ‘Behave according to guidelines that can be applied to everybody else.’ While a powerful ‘leitmotif’ for moral guidelines, when applied to pragmatic actions, the principle can prove rather counter-productive. Just imagine everybody trying to enter the same restaurant. I would instead suggest the formulation of an inverse statement, a ‘categorical business prohibition’: *‘Never pursue a business initiative that everybody else would want to pursue’*. Differentiation, not imitation, creates value. We have quickly moved from a scarcity of Internet companies to a glut of indistinguishable competitors precisely because the ‘categorical prohibition’ was ignored. When that happens, even the best idea can be drowned in competition.”

My imaginary slave was now also carrying a copy of Kant’s *Critique of Practical Reason* under his arm. But Holmes continued relentlessly

Four: scaling through the change barrier

“And then there is the unwillingness of humans to change. Good or bad – depending on your value system – it is a fact of life. Staggering inefficiency is by no means a guarantor of immediate change. For instance, I claim that if today’s paper-based information and entertainment industry were not already in place, it would never get built. Who would start regulating the tree felling, construct the paper mills, organize the transportation, build the sophisticated paper production and printing machines and organize (and pay for) the distribution? Most of this can be done electronically with a fraction of the effort. But

given that all this paper-based industry is in place – when and how is it ever going to change?

“*Internet time*’ is a treacherous concept. Those driving for instant change often fail, which in turn leads those resisting the change to erroneously assume the danger is over. I advise young fellows with fresh ideas to go after new markets using a stepwise approach, so as to avoid fighting powerfully inert companies in addition to human nature. After all, why have Yahoo, eBay and AOL been successful while Amazon is still struggling? On the B2B side, many electronic marketplaces were so sure they were holding an instantly winning ticket that they went for the most grandiose concepts, attacked the largest players and demanded complete adherence to the new way of doing business. They will rediscover modest beginnings: Strive for unconditional focus and test the business model, but be prepared to scale up fiercely when the opportunity arises!”

“These, Watson, are what I, Sherlock Holmes, call the *real* challenges for today’s ‘entrepreneurs’ in the electronic marketplace.”

For a brief moment I considered, whether irony might help to expose my friends vanity, but a long sequence of prior experiences led me to reject this thought. Instead I read out the last question.

“Now for the climax, Holmes:

“What is the future of the electronic marketplace?”

“Ah, the future. People never stop wanting me to predict their future.”

Holmes briefly glanced at me but concluded correctly that it was pointless to coerce me into answering this one. So he continued:

“Why do they not ask their futurists, astrologists, politicians or the like, all supposedly qualified to answer such requests. My personal observation – which is not infallible in this area, but certainly better than most – tells me the only institution with a strong track record of accurately predicting the future was the ancient Oracle in Delphi. However, many of its statements were highly ambivalent.

“Watson, let us give this question the answer it deserves.

The Future

“The only way to accurately predict the future is to shape it! The digital storm is dangerous but will be mastered by skillful men. It cannot, however, be avoided.”

“Would these men not need more than their fair share of luck?” I could not help interjecting.

“Of course they would”, said Holmes, “but what good is it telling them so? Although, Watson, you have just given me an idea. As the French bacteriologist Louis Pasteur once said: ‘Luck only strikes the prepared mind’. Thus let us be kind and add the following.

Epigraph

“As a preparation I recommend you read a book that summarizes what has been learnt and lays out novel strategies. *Digital Storm* should be adequate. You might avoid unnecessary mistakes.”

NOTES

- 1 Regis McKenna and George Gilder call them “the laws.”
- 2 For an explanation of “Holmes’ Law” see Chapter 1.

The Digital Storm

Digital Storm describes the powerful forces of the Internet reshaping the business landscape. The onset of the digital storm has created severe turbulences: Business models have come and gone, companies have risen and fallen and personal fortunes have been made and lost. Whereas a few years ago the Internet seemed like a swelling tide, bound to raise all ships that ventured to sea, it now resembles stormy waters that few have learnt to sail. ***The easy recipes are gone, but the fundamental challenges remain.***

HOW COULD THINGS GO WRONG?

It all seemed so easy. Every businessperson shares the frustration with the inefficiencies of current processes. Airplanes, faxes and phones seem so cumbersome and dated when compared to the immediacy and wealth of interaction via the Internet. The Web creates transparency, allows all parties to coordinate, exchanges information fast and in a form that can be processed, and has intelligent tools at both ends that could perform the more cumbersome tasks. ***E-business*** – combining business-to-business e-commerce seamlessly with internal processes – seemed a no-brainer. And B2B marketplaces (called “***e-markets***”) were the obvious mechanism, poised to render complex business transactions as easy as buying and selling stock.

BUT GO WRONG THEY DID!

All players in the electronic marketplace are frustrated. Most prominent are the travails of the early shooting stars that focused on creating independent e-markets. Their valuations have evaporated, their business volumes have faded and their funds are running out. The disappointments of consortia-driven markets are merely less publicized. E-businesses at large complain about bal-

looming infrastructure costs. Often, **complexity has increased** instead of decreasing: Far from replacing existing process inefficiencies, the electronic marketplace has added an additional channel.

HOW CAN WE GET THINGS RIGHT?

The basic promise of the electronic marketplace holds true. **E-business** will not “go away.” Everybody rightfully expects **B2B e-commerce** to continue growing exponentially. The digital storm has only just begun.

While no one has yet found the “holy grail” of the electronic marketplace, two significant things have happened. We have access to a broad range of **highly relevant experiences**, albeit dispersed over many industries and functions. And in many sectors **strong initial positions** have been built by the current players. Both aspects have to be well understood and form an integral part of any future strategy.

In this book we summarize what has been learnt and assist you in focusing on the important issues going forward. This is a vast topic with many critical facets. Fundamentally, however, there are two challenges:

- **Making many-to-many business interactions work.** *Holmes’ law*, the unique opportunity of leveraging many-to-many – as opposed to one-to-one – interactions, is the fundamental promise of the electronic marketplace. Market transparency, process efficiency, the maintenance of a rich network of collaborative business relationships and more all boil down to making many-to-many business interactions work. In practice, however, this is very hard. Electronic markets have tried, but few have succeeded. Still, most e-markets have gained valuable experiences and their study therefore constitutes a core element of our analysis of B2B e-commerce.
- **Creating value through business innovation.** While efficient markets might be a blessing for the end customer, **building an attractive business for yourself** is an entirely different issue. The squeezed supplier side of electronic markets has arguably felt this discrepancy most strongly. In general, there has been far too much emphasis on industry-wide efficiency gains. These only *reserve the right to play* for individual businesses.

Profits are created through differentiation. We guide you towards the creation of novel, differentiated value propositions, in lieu of automating current processes.

We have written the book for the **business people of the 21st century**. You may be a marketplace owner, searching for profits. Or a supplier, feeling threatened by purchasing platforms. You may want to leverage e-business to enhance customer value. Or you may be striving to optimize your sourcing relationships. You may be an infrastructure provider, seeking to enable electronic commerce, or a service provider, promoting your support. You may be mourning or cheering over the challenges of many early Internet pure plays.

We address the chief executive as well as the newly employed, people leading e-commerce initiatives as well as those questioning these investments, the sales & marketing departments as well as the research & development teams, the service providers as well as the financial community. They will all have to steer through the digital storm. Primarily, however, we address the **entrepreneur within you**, who not only tries to keep up with the changes, but strives to shape the future.

Executive Summary

Digital Storm – Fresh Business Strategies from the Electronic Marketplace is divided into four parts. In the **first part** of the book, “Storm Warning: The True Force of the Electronic Marketplace,” we **explore the evolution of marketplaces** throughout history. We discuss the fundamental opportunities and risks of electronic markets and B2B e-commerce and explain the initial roller coaster of the year 2000. In the **second part**, “Under Sail: Current E-Market Strategies Explained,” we **review today’s e-market initiatives**. This part contains the bulk of our 27 ‘searchlights’ – segment and case examples of a diverse set of industries, functions and business purposes. In the **third part**, “Long-Range Forecast for the Digital Storm,” we **discuss the future** development of the electronic marketplace. We **point out critical shortcomings** that led to the difficulties of **current approaches** and discuss how dynamic networks can help companies build profitable differentiated businesses. Finally, in the **fourth part**, “Your Pilot through the Digital Storm,” we **provide guidance to help you shape your role** in the electronic marketplace.

PART I: STORM WARNING: THE TRUE FORCE OF THE ELECTRONIC MARKETPLACE

1 A Brief History of Marketplaces – from Traditional to Electronic

The electronic marketplace is not about the Internet. It is about doing business. Historic marketplaces had a “completeness” that was lost through increasing complexity and geographic expansion. Financial markets developed innovative approaches, however with limited functionality. E-markets leverage the disruptive power of the Internet in a unique way. Initial developments

have been highly turbulent, but the transformational force of the electronic marketplace is here to stay. Companies have to go beyond e-participation and shape their distinctive roles in the new century.

2 The Reshaping of Business Relationships

Enterprises are fundamentally defined through their business *relationships*. Significant complexities and high inefficiencies continue to characterize industry value chains and company relations. Purchasing and selling processes, the core marketplace activities, are particularly affected. The electronic marketplace can eliminate inefficiencies and handle complexity. It can decouple information flows, enable collaborative commerce, reduce the cost-to-switch and costs-to-serve and transform supply chains into demand networks. It thus has the potential to restructure all business relationships.

PART II: UNDER SAIL: CURRENT E-MARKET STRATEGIES EXPLAINED

3 Lightning Strikes – Electronic Business Hits the B2B Markets

E-markets provide electronic support and context for all business transactions. They can raise market transparency, increase a wide variety of process and transaction efficiencies and enable dynamic pricing. While many complementary classifications of e-markets are useful, we have chosen to segment them into three basic types with different characteristics: purchasing platforms, intermediary marketplaces and sell-side portals.

4 Purchasing Platforms Strive to Dominate Procurement

Electronic procurement can reduce cost, increase speed and improve the quality of purchasing processes. The goal for buyer-motivated procurement platforms is to enable value chain integration, moving far beyond the facilitation of buying processes. Collaborations of dominant players aim to transform whole

industries. Maintaining coalitions of competing buyers will, however, be problematic.

5 Intermediary E-Markets Try to ‘Deliver It All’

Intermediary marketplaces can efficiently offer rich context and a wide range of services to their constituents. Their success is determined by their ability to quickly achieve critical liquidity. Truly attractive business models for these e-markets, however, have to go beyond a purely transactional exchange and provide substantial value-added services.

6 Sell-Side Portals Push Customer Centricity

Sell-side portals extend a supplier’s influence forward along the value chain. Competition issues mean that many are private marketplaces. To satisfy users, solutions that encompass broad business needs are increasingly on offer. Innovative suppliers are approaching the status of “digital franchisors.”

PART III: LONG-RANGE FORECAST FOR THE DIGITAL STORM

7 Profits in Futurescape

Misconceived ‘network effects’ have led to many over-ambitious e-market initiatives. While exciting, these effects do not suspend the basic laws of new service diffusion and adoption. Only unconditional focus can generate scale and profitability in the electronic marketplace. Companies have to move beyond the “E-topia” of industry-wide efficiency gains. In dynamic trading networks they can leverage the electronic marketplace to achieve true competitive differentiation and thus *profitability*. Neither dominant conglomerates nor a myriad of niche players will determine the future e-market landscape. Instead, conflicting trends of consolidation and innovation will reach a dynamic equilibrium. E-markets will become service-oriented, networked and flexible, and every company has to shape its role in this future.

8 Bridging the “Software Gap”

E-Market infrastructure is all about software. Interoperability, flexibility, ease-of-use and scalability are but a few of the requirements. However, the “Software Gap” between the needs of e-businesses and the reality of the current landscape is strangling the evolution of the electronic marketplace. Early service provider models have tried addressing the issues with limited success. Instead, the essence of software itself is changing into a service: A powerful, ubiquitous “Web service” paradigm could combine the best of software and services and truly enable dynamic business models.

PART IV: YOUR PILOT THROUGH THE DIGITAL STORM

9 Plotting a Course – Rethink Your Industry from Scratch!

In these stormy times you have to rethink your industry before focusing on your own company. We propose a process, whereby you first plot your sector’s core processes and identify the current pain points. You should then map today’s electronic marketplace initiatives and challenge your thinking by extreme end game scenarios. Finally, you distil potential fresh strategies, remembering that true business innovation always starts with the end customer.

10 The Racing Line – Differentiate and Focus!

The central question is how *you* can shape a profitable future role for your business. In the electronic marketplace, strategy can no longer be completed without rapid prototyping. We provide a comprehensive approach, applicable to all players launching or enabling e-business ventures, for achieving differentiation, scaling rapidly, forming a partner network – while avoiding its pitfalls – and addressing the platform issues. Winning the race through the digital storm rests on two pillars: differentiation and focus.

Our points are illustrated by the analyses in the **27 searchlights** representing interesting companies and electronic market sectors.

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PART I

Storm Warning: The True Force of the Electronic Marketplace

It would be *naïve* to discuss the electronic marketplace without taking into account the dramatic ups and downs business perceptions and valuations have undergone over the last years. It would, however, be outright *foolish* to allow this roller coaster to dominate the way we think about electronic markets. Part I of this book puts things in perspective.

In *Chapter 1* we look at the evolution of markets throughout time, from the ancient Greek agora and the Silk Road to modern financial markets. Following the disruption of the Internet, the breakthroughs of a handful of innovative pioneers made the surge of e-markets inevitable. We encourage the reader to view the ensuing hype as an unusually fertile – if unnatural – breeding ground for innovative concepts. The wealth of experiments carried out during this boom offer unique insights. These insights should line out the proper course through the digital storm, and trigger a commitment to determined action.

In *Chapter 2* we explore the electronic marketplace as a medium that dynamically reshapes multifaceted business relationships, rather than as a tool for opportunistic transactions. We draw upon examples from the textile and construction industries to show how our economy is permeated simultaneously by complexities and inefficiencies. These create enormous challenges in industry value chains. The electronic marketplace thrives in this environment as it eliminates inefficiencies and allows businesses to handle complexity. As a result, business relationships change fundamentally. Companies should assess their exposure to these changes.

In the inserts of Chapter 2 we explain important concepts: “When information decouples ...,” “From collaborative commerce to demand chain net-

works,” “Cost-to-switch and cost-to-serve,” “From e-commerce to e-business: the legacy challenge” and “A tale of pervasive presence, customer experience and trust.”

Part I of this book is a reflection which develops the background for the discussion of the many examples presented in Part II.

A Brief History of Marketplaces – from Traditional to Electronic

ELECTRONIC MARKETS are not about the Internet. They are about doing business. The evolution of sophisticated marketplaces is the basis of our economy and a historic perspective offers valuable insights. However, the Internet introduces one of the most disruptive innovations markets have ever seen. “Complete” marketplaces can now potentially be operated on a large scale. The roller coaster of hype and bust of valuations, however, demonstrates both the opportunities and the challenges e-markets face. Important lessons have been learnt. It is thus time to stop experimenting and to commit to a well-conceived and executed electronic strategy.

NAVIGATOR THROUGH CHAPTER 1

Marketplaces have lost their coherence

The Agora in ancient Athens was a complete marketplace, combining content, context and commerce/transactions. It was, however, local. Geographic expansion and the rise of intermediaries destroyed this coherence, which modern markets are striving to regain.

Financial exchanges pioneered the use of electronics

Before the advent of the Internet, financial exchanges were the most sophisticated markets. Highly efficient and global, they mastered large scale dynamic pricing and achieved unprecedented liquidity. They were, however, only moderately attractive as a business.

Early innovators proved the disruptiveness of the Internet

The Internet introduced a quantum leap in efficient many-to-many interaction, powered by exponential performance gains in technology and the developments in software intelligence. Early innovators confirmed the business potential: Consumer exchanges like *eBay* (and later Napster), showed the power of Web-based markets; Cisco and Dell demonstrated that there is a corresponding innovation potential in B2B.

E-markets raise expectations and experience a roller coaster

The potential for efficiency gains and context creation of B2B e-markets led to their meteoric rise. It culminated in early 2000, just to witness an even more precipitous fall (see the B2B incubator *ICG*). While this relentless pace has proven disastrous for many participants, it has accelerated our learning. Innovative differentiation, true efficiency gains and growth require more sophisticated approaches.

Stop experimenting and shape your future!

Many companies react by hedging their bets in a portfolio approach to e-market initiatives without making real commitments. This strategy could charitably be called “the learning phase of e-participation.” At some point it must end and the lessons learnt must be leveraged into true commitments, which alone can yield sustainable business benefits. It is time to stop experimenting and to shape your future in the electronic marketplace.

MARKETPLACES HAVE LOST THEIR COHERENCE

A brief review of the historic reality of marketplaces and their evolution provides a useful background for our discussion of current developments.

The Agora: a “complete” marketplace

In ancient Greek cities the “Agora” denoted an open space that served as a

meeting place for various daily activities for its citizens: religious, political, judicial, social as well as commercial. Interestingly the word “agora,” like the modern word “market,” denoted both the abstract concept and the physical space. In the highly developed community of classical Athens the religious activities moved to the Acropolis and the assembly to the Pnyx. Within the Agora the **commercial activities** started to dominate and each trade and profession developed its own quarter. The marketplace continued, however, to provide a **unique completeness**. In modern terms this is described by content, context and commerce as explained in Fig. 1.1

Simple goods, direct evaluation of the value proposition (“X quality for Y price”) and local relationships made the Agora effective, providing all the

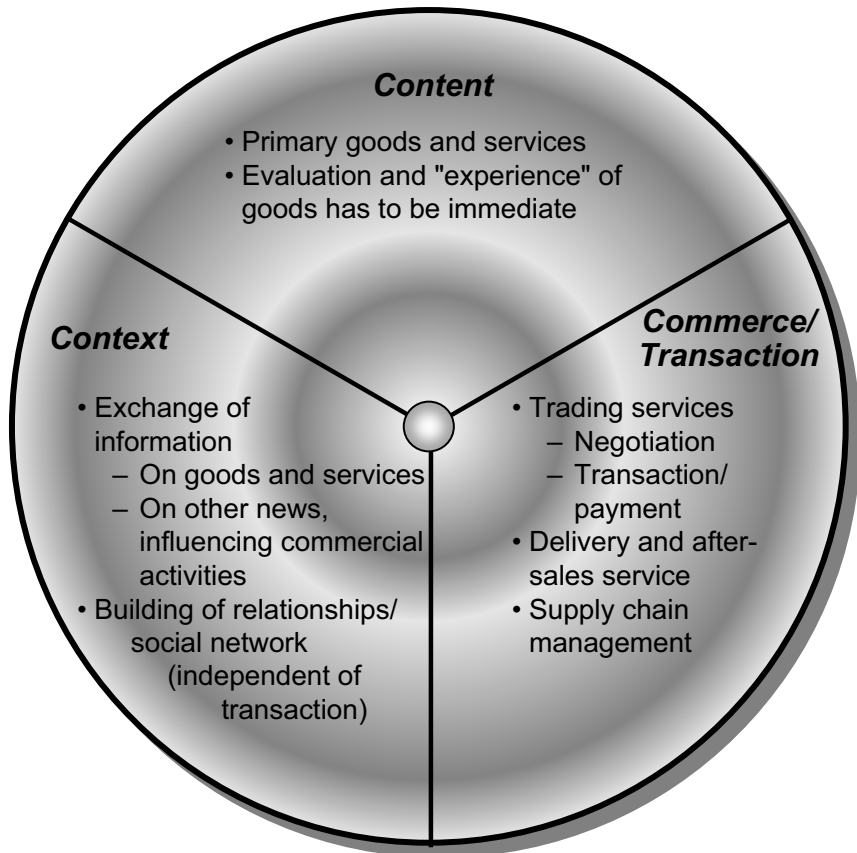


Fig. 1.1 A “complete” marketplace.

criteria required for rapid decision-making. Notwithstanding the simplicity of this specific model, the three elements, content, context and commerce/transactions are fundamental needs of participants in a market. As long as commercial activity was highly *local* and only involved a *limited number of goods*, such a complete market could develop in one physical location. The late Agora in Athens reached the limit of this concept. As the scope of marketplaces increased both with respect to geographical reach and diversity of goods, the cohesiveness in one physical location could not be maintained. Not until the surge of the Internet has a true effort been made to reconstruct this completeness in its original immediacy.

The Silk Road: the rise of intermediaries

An important drive in the further evolution of marketplaces came from the potential to exchange goods between geographically separated places. One of the most sophisticated trading systems of antiquity, the **Silk Road**, exploited the potential to exchange goods and ideas between the two leading high cultures: The Romans and the Chinese. Silk traveled westward, while wool, gold and silver went east. The importance of the Silk Road has been amply documented. With the rise of Arab power the Silk Road decayed, but it regained some importance under the Mongols and served Marco Polo in the late thirteenth century to reach China. His subsequent report famously changed cultural and geographic ideas in Europe during the Renaissance.

The 4000 mile road (actually a caravan track) originated at Sian (Xian), an early capital of China. It followed the Great Wall of China, bypassed the Takla Makan Desert, climbed the Pamir, crossed Afghanistan and went down to the Levant to reach Damascus and the Mediterranean. From there, the merchandise was shipped across the Sea. A caravan journey back and forth took about **6–8 years**. Not surprisingly, very few people actually traveled the entire route. Instead, along the Silk Road evolved what could arguably be called the world's most elaborate system of **intermediaries**: A long, staggered progression of middlemen handled the goods.

While human commerce was never again to develop an organized trading path of 6–8 years in length, middlemen persisted. They dominated most types

of markets until modern times, bridging distances and serving the aggregation needs of diverse markets. Their importance continuously rose through colonial times and achieved its climax in the powerful import/export organizations of the eighteenth and nineteenth century. With these intermediaries, marketplaces lost their “completeness.”

Intermediaries serve important functions beyond the crossing of distances. In particular they “commission” goods and services, i.e. they assemble them from various sources in a customer-centric way. In many cases they also enrich the value proposition through diverse services of their own. The trouble with traditional intermediaries is that they disrupt the direct relationships between trading partners and only transmit delayed and filtered information about various relevant aspects of the business.

In the twentieth century, progress in transportation and communication started to re-establish context and direct interaction in the marketplaces through trade fairs, the press and the phone/fax. Only the advent of the Internet, however, has allowed for (new forms of) intermediaries to contribute to a marketplace *without* depriving it of its coherence and immediacy.

FINANCIAL EXCHANGES PIONEERED THE USE OF ELECTRONICS

Any discussion of marketplaces before the Internet would be incomplete without the incorporation of **financial markets**. These are highly developed, although they continue to undergo constant changes. Financial markets are of particular significance as a prototype of one kind of e-markets, the **transaction-focused exchanges**.

Financial markets have a long history: Since the Middle Ages, traders in European fairs found it convenient to use credit, which required the supporting documents of drafts, notes and bills of exchange. There was a famous exchange of these financial papers in the thirteenth century in front of the Van der Buerse family home in Bruges, a trading center in what is today Belgium. This gave rise to the introduction of securities exchanges, and the first official stock market was established in 1611 in Amsterdam.

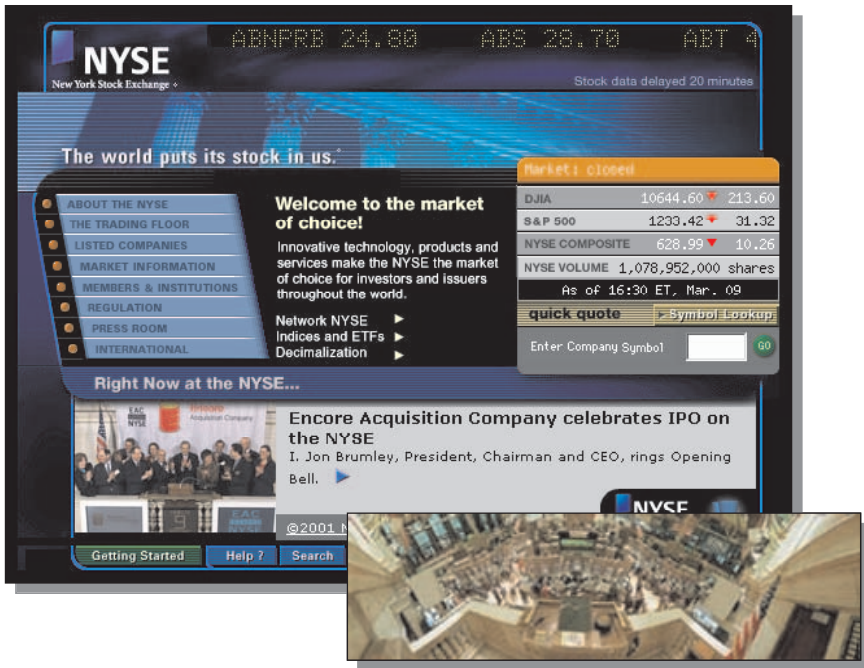


Fig. 1.2 The New York Stock Exchange.

Traditional (i.e. pre-Internet) financial markets, as well as closely related commodity exchanges, have offered the current e-markets several core lessons:

- 1 **Dynamic pricing can be efficient.** In many markets the switch from bartering to fixed pricing was a prerequisite to making them efficient. Financial markets were for a long time the only mass markets to cope with dynamic pricing.
- 2 **Liquidity launches a virtuous cycle.** An exchange whose main contribution is to match potential buyers with potential sellers, must strive for maximum liquidity. This in turn establishes a virtuous cycle of increasing returns. For instance, Nasdaq introduced the innovation of at least two brokers always trading every stock (at a spread) so as to breach the liquidity barrier in high-tech stocks.
- 3 **Important exchanges draw regulatory action.** As soon as exchanges become large enough to be relevant on an economic scale, they face

regulation and government intervention. Some of today's consortia-led e-markets, such as Covisint, are already under close scrutiny by anti-trust agencies around the globe. Extensive legal and accounting expertise is necessary in the set-up of e-markets. Some financial e-exchanges even went "jurisdiction shopping" to small countries that offered a more lenient regulatory environment.

- 4 **Initially attractive ownership models can later turn into a liability.** Most financial markets were originally set-up by brokers and fared very well with that model. For instance, the New York Stock Exchange was formed on May 17, 1792 by the so-called "Buttonwood Tree" agreement, essentially a price collusion and preferential treatment agreement between the Wall Street brokers. In the 1990s, however, broker-owned exchanges were slow to modernize. The most famous example is the London Stock Exchange (LSE): In the 1980s, it developed into the dominant European exchange, concentrating a significant portion of European stocks and bonds. It was poised to marginalize the lesser European exchanges through the virtuous growth cycle. Then, however, its owners resisted change: Computerization conflicted with their self-interests. Other European exchanges, like Frankfurt and OM Gruppen/Stockholm, demutualized in 1993 and multiplied their volume in a short period of time. In the year 2000 both launched efforts to take over/merge with the LSE, which were, however, ultimately unsuccessful. A decade earlier such bids would have been unimaginable. Consortia-led e-markets will sooner or later face similar tension with their owners.
- 5 **The core value could well be created around, not by, the exchange.** One of the most important lessons to be learnt from stock exchanges is that, in spite of their pivotal role in creating wealth around them, the markets themselves only capture a minimal part of the value. In 2000 the New York Stock Exchange reported trades worth US\$11.1 trillion based on 263 billion shares exchanged, but revenues were only US\$815 million and net income a paltry US\$73 million. Around the exchange, however, a thriving industry of highly profitable investment banks has developed. One has to decouple the question of how *important* an e-market will become from how *attractive the business model* of running the

e-market will be. The assumption that high participation in the marketplace will automatically create enormous value for its owners is invalid.

- 6 **Software and service models converge.** Even pre-Internet financial markets considered their trading platform a defining element and core asset. This might seem surprising, as modern critics have described those platforms as complex, proprietary and siloed. In e-markets, software determines your service delivery capabilities in a fundamental way. Business models become fluid: Software vendors are exploring more active roles by co-owning marketplaces, marketplaces try to become platform vendors, and – more importantly – software is increasingly offered as a service (see Chapter 8).

Traditional financial markets have thus been important precursors for Internet-based markets, in particular for **electronic exchanges**, focused primarily on efficient transactions. Given the digital nature of financial products and services – money, information/advice and transactions – it is not surprising that the financial sector itself is undergoing one of the most extensive restructuring through the Internet. Rich value propositions evolve to optimize total financial and real asset management, risk management, trading preferences and many other customer parameters. We analyze these developments in Searchlight 17: “The financial services sector – the second electronic revolution.”

EARLY INNOVATORS PROVED THE DISRUPTIVENESS OF THE INTERNET

Ancient markets have served as an example of “complete” marketplaces on a local scale. Financial markets showed that, for a simple core process, efficient markets based on dynamic pricing could leverage electronic platforms. Only the Internet, however, by enabling highly sophisticated and efficient many-to-many interactions, allows for the conception of entirely new types of markets.

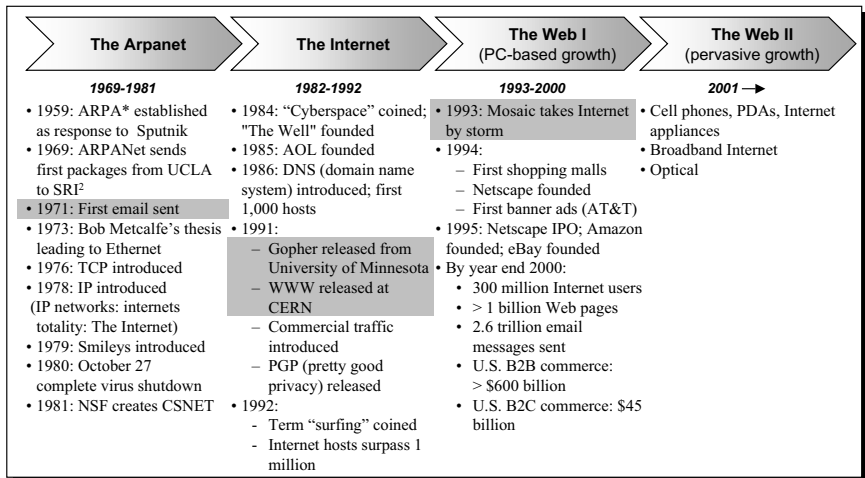
The rise of the Internet

The Internet is a young medium for business. Its history goes back to the late

1960s, with popular applications such as e-mail appearing in the early seventies. The hypergrowth phase of the Internet, however, started with the launch of the World Wide Web and the Mosaic Browser in the early nineties. This was also the start of the commercial use of the Internet, i.e. the **electronic marketplace**.

Countless descriptions have been written about the business relevance of the Internet. Let us only summarize the points most pertinent to our discussion.

1 **A quantum leap in communication.** We continue to be stunned by the wealth of communication via the Internet. It can be an effective *one-to-one channel* between two people, as demonstrated by the simplest e-mail. Even e-mails, however, are often not used in this way. Instead they serve as a **many-to-many channel** through distributions lists, primary addresses, secondary addresses (“cc”) and hidden addressees (“bcc”). The Internet is also an effective **mass communication medium**. For instance, the (in)famous Starr report, the basis for the pledge to impeach US President Clinton, was downloaded more than 10 million times over AOL alone. And the Internet introduces the **reverse interaction channel** on Websites leading to entirely new, customer-driven business systems.



* Advanced Research Projects Agency

Fig. 1.3 A brief history of the Internet.

- 2 **Intelligence on both ends of the channel.** Interaction on the Internet has another important aspect: there is a stunning amount of intelligence on the devices at both ends of the channel. This has very practical consequences, as it allows for highly effective navigation and mass customization. In addition, information about customer behavior, but also mail messages and attachments can be **processed**: Stored, aggregated, analyzed, forwarded, modified, commented and incorporated in different contexts. Without this intelligence, interaction over the Internet would not be **scalable**.
- 3 **Context.** Building on the above elements, interaction on the Web is done within a context. Critical (multimedia) information is provided to render the process both efficient and effective. Hyperlinks were the most famous early innovation to provide such a context. In essence, HTML¹ was designed to facilitate interaction in context. It proved to be the trigger for the exponential growth of the Internet.
- 4 **Transactions.** Last, not least, the interaction capabilities of the Internet allow for immediate *action*, most importantly *transaction*, on the medium itself. The basis for an effective e-commerce medium has been laid, although many parts – such as digital signatures and security – still face significant adoption hurdles. The commerce-oriented meta-language (XML²) is seeing wide-spread adoption.

All of the above will be boosted by the rise of **fast anytime, anywhere access**, most significantly **broadband** and **mobile** access to the Internet. With every innovation and additional user the value of the Internet increases sharply. Metcalfe, a father of the Ethernet, popularized the idea that the value of a network, such as the fax or telephone network, increases with the number of *one-to-one* connections, i.e. with square of its users (Metcalfe’s Law: N^2). When used as a *many-to-many* interaction medium, the potential of the Internet is actually even higher. It increases with the number of many-to-many connections, i.e. with two to the power of all network users (“Holmes’ Law:” 2^N). The potential **communication value of the Internet doubles with every new user**. We will explain and explore the significance of this theoretical observation in Insert 1.1, “Holmes’ Law of many-to-many interactions” below.

Despite these extraordinary developments and the constant enrichment of the Internet as a content, context and commerce medium, “completeness” of these attributes can almost never be achieved on the Internet alone. Instead, the Internet must be seen in the context of other customer requirements, as part of a complete solution to unmet needs. Many Internet pioneers in the consumer space had to learn this lesson the hard way. In the business environment there is often no need for costly ‘brick-and-mortar’ infrastructure. However, personal relationships have to be built. We expand on this aspect in Chapter 2.

Internet precursors to e-markets

The last five years have spurred a flurry of business experiments of how to best leverage the new medium for business purposes. Fuelled by a stunning supply of capital, interesting (and less interesting) new business models were launched. We believe a few of them to be particularly influential and instructive for the subsequent development of B2B markets: Peer-to-peer consumer markets like eBay (and later Napster) on the one hand; and highly successful individual B2B players like Cisco or Dell on the other hand.

Peer-to-peer consumer markets

When asked what business has emerged to leverage the Internet in the most unique way, many experts would point to **eBay**.

→ **Searchlight 1:** eBay – the market creator (p. 45)

Originated as a consumer auction site, eBay created an efficient market where there was none before. Its business model would be impossible without the Internet. And it is very attractive: Many tried imitating eBay, but **network effects** make the largest auction community by far *the most attractive one for buyers and sellers*. We explore this issue in Insert 1.1.

eBay has proven that the Internet is capable of developing **entirely new marketplaces** in a highly unique way. New developments, like the spread of digital photography and broadband access, strengthen it further. eBay is not disrupting an industry since the commerce it enables did either not exist before or was scattered in a shadow economy of flea markets and garage sales. As no

INSERT 1.1: HOLMES' LAW FOR MANY-TO-MANY INTERACTIONS

The promise of the electronic marketplace is fundamentally about making many-to-many interactions effective. Let us explore this in more detail.

eBay is a simple example for the power of a many-to-many interaction network. Naïvely one might assume that a marketplace like eBay derives its strength from the many potential combinations of buyers and sellers. For N participants this would give a (theoretical) 'network effect' of N^2 (N square). However, this is not the whole story. An auction is not an isolated negotiation between one buyer and one seller, but instead an event of many participants. An auction with 100 bidders is very different from a transaction with one 'bidder'. Even if the same buyer and seller ultimately connect, the price will vary quite a bit. Thus the (theoretical) strength of eBay grows with the potential numbers of auction groups that can form, i.e. with 2^N (two to the power of N). We call this 'Holmes Law' and it describes the power of networks with many-to-many interactions. As we see in Searchlight 1, these strong network effects are the source of eBay's business muscle in the US.

For the theoretically inclined reader, let us be precise. Assume a network with N members:

- **Metcalf's Law** counts the number of one-to-one connections, i.e. the number of subsets with two members. This number is $N \times (N-1) / 2$, or $N^2 / 2 - N / 2$. Scientists refer to this as "growth with N^2 ."
- **Holmes' Law**³ counts the number of many-to-many connections, i.e. the number of subsets with an arbitrary number (bigger than one) of members. This number is $2^N - (N + 1)$. It "grows with 2^N ."

Using the precise terms, the reader can check the significant difference already for a small workgroup of 5–10 people – and appreciate why the Internet is a superior collaborative tool.

All the theoretical power of network effects in many-to-many interactions is an academic game of numbers, as long as there are no collaborative applications to make use of it. Due to the simplicity of its service, eBay is rather advanced in this respect. B2C sites like Amazon and myYahoo have shown that, for simple interactions, thousands of people (the company employees) can interact with millions of people (its users/customers) in a somewhat customized way. On that scale, however, powerful technology has to be used to structure and channel the interaction. Similarly, AOL has fostered “virtual communities” among its many users in chat rooms.

E-mail is another example of increasingly useful many-to-many communication and e-groups have become practical for simple interactions. E-mail, however, also illustrates the reverse effect: Widespread spamming and an overuse of the dangerous ‘reply to all’ button in distribution lists has taught how quickly ill-managed many-to-many interaction can break down. Phones, by contrast, are essentially one-to-one – a simple three-way conference call already strains the communication. The same is true for conventional faxes. Here, Metcalfe’s N^2 law for one-to-one interaction networks provides a much better description.

In a **B2B market environment** effective many-to-many interactions are **much more challenging**. Many e-markets fell into the trap of extrapolating too quickly from e-Bay. Some commodity exchanges, most notably Enron, managed to leverage the electronic marketplace. Others, however, were driven into dangerous megalomania through a misconception of these “network effects.” The management of collaborative business processes is *significantly more challenging* than just enabling chat. We analyze all these issues in detail in this book, particularly in Chapter 7.

Many efforts in the electronic marketplace strive to make many-to-many interactions more effective. We explore supply chain management, collaborative commerce, peer-to-peer architectures, networked organizations and dynamic trading networks. One way of describing the very promise of the electronic marketplace is as an effort to – step by step – conquer the vast value creation territory opened by Holmes’ Law of the power of many-to-many interactions.

large players were attacked, eBay hardly met resistance when developing its original idea into a successful business. In many industries targeted by B2B e-markets, however, new entrants face stiff competition from established players.

A more recent player who has shown the disruptive potential of Internet-based markets is **Napster**. It popularized the notion of **peer-to-peer** business models, although strictly speaking it is not built on peer-to-peer technology. Napster has introduced a platform that makes it easy for people to locate and exchange music over the Internet. It has long been clear that for digital goods you could *technically* link millions of buyers and sellers directly. However, there was no *practical mechanism* to do so. The cacophony of the offering from music sites, such as **mp3.com**, was not encouraging. As the original music exchange on Napster was **free** and **illegal**, the company sadly had **no business model**. Nevertheless, Napster has offered unique insights in how to build users and usage at a breathtaking speed, which we return to later.

Both eBay and Napster have proven the unique possibility of the Internet to recombine content, context and commerce in a way the Agora had done long ago, but on a scale of million participants across a continent. Put in different words, they have established a *pervasive presence*. Pervasive presence has made both eBay and Napster superior to the Agora and is another aspect that renders their stories so relevant for B2B e-markets.

E-tailers (which can be viewed as “private consumer markets”) and other B2C e-commerce and community sites also taught important lessons regarding customer centricity. We return to these issues in our discussion on sell-side portals.

Cisco, Dell and B2B sites

While B2B e-commerce had always eclipsed B2C e-commerce in terms of volume, the same could not be said with respect to the innovativeness of business models. Early uses of the Internet in B2B commerce focused on migrating traditional inter-company EDI (electronic data interchange) platforms to a more Web-based technology. Often they did not touch the underlying processes.

A few companies, however, set important precedents in B2B business innovation.

Cisco has certainly been the most stunning example. How this company leveraged the Internet to build its dominance in the Web infrastructure industry has been amply described. In order to fully appreciate Cisco's achievements, ask yourself whether a decade ago you would have bet on the following business: "A small company aims to provide *products* for data networks, although networks – by definition – always require complete and interoperable *solutions*. The company thus has to use its strongest potential competitors, the telecom equipment providers, as channels." This hardly sounds like a recipe to build what at one point became the most valuable company on the planet. Cisco, however, managed to develop a **direct customer relationship through the Internet**. It made the Web the channel of choice for re-orders and later orders in general. This was achieved by providing a unique value through its Website, in particular the context for the lay-out of a *complete network solution*. Cisco – similarly to Microsoft – has profited from the fact that its 'partners' did not fully perceive the power of its business. But the company has also proven that the Internet can be used in a **B2B** environment to build a value network that strongly leverages and magnifies the activities of a single firm. It thus enables a kind of **competitive advantage not achievable in pre-Internet times**.

Another influential case on the potential of the Internet in a business environment was **Dell**. Unlike Cisco, Dell built the foundations of its business in pre-Internet times, leveraging the telephone to develop a successful direct selling business. Then, however, it pioneered another innovation by introducing the **built-to-order** PC: It leveraged the Internet to its maximum, both the **back-channel from the buyer** to order the PC as well as the **full integration with its supplier network** to get the job done in time. Simultaneously, Dell reduced its inventory to levels that pre-Internet just-in-time concepts considered unachievable.

Cisco and Dell have wielded a high influence in showing the potential of B2B commerce over the Web. Both also succeeded in commoditizing one aspect of the business they were in while leveraging the Internet to differentiate on another, critical aspect. Dell leveraged the fact that the PC was already viewed as a commodity in terms of components but that the specific configuration of PCs to meet individual needs was still an area of potential differentiation. It built a platform to accomplish this goal. Cisco took a highly complex,

even esoteric, product set and deliberately commoditized the “box” by outsourcing production and then providing an extraordinary array of software configuration options to their customers. Not their core product architecture, but rather their product strategy, was brilliant.

We shall return to Dell and Cisco later, both in their role as sell-side “private marketplaces” and when guiding you in building differentiated strategies. Others, such as IBM and Intel, have also impressed by the sheer volume of their electronic business and the way in which they have begun to develop a more refined appreciation for how to deliver value over the Web.

E-MARKETS RAISE EXPECTATIONS AND EXPERIENCE A ROLLER COASTER

Putting consumer marketplaces and the B2B potential of the Internet together, the idea to form B2B e-markets had become obvious. Many players simultaneously entered the market.

The driving forces behind the projected explosive growth were as follows.

The promise of e-markets

The electronic marketplace offers the opportunity to improve many business processes. An overview is given in Fig. 1.4.

Overall the effects can be categorized by whether they lower costs or offer higher value. While many of the B2B initiatives so far have concentrated on the cost side, the value side is arguably more relevant.

Better interaction/transparency is the typical value proposition of exchanges or auctions. At the end of the day they propose either a higher choice of goods or a lower price. Many of the advances leverage characteristics of the Internet as a superior self-service medium.

Automation of processes is a large category. Again, it either increases the value by offering novel processes of higher quality or it lowers the costs by increasing the efficiency of current processes. The most common in the context of the electronic marketplace are purchasing processes, transaction processes and selling processes. Many e-markets address one or several parts of these.

Driver \ Lever	Lower Cost	Higher Value
Better Interaction/Transparency	<ul style="list-style-type: none"> • Lower price 	<ul style="list-style-type: none"> • Higher choice
Automation of Processes	<ul style="list-style-type: none"> • Higher process efficiency 	<ul style="list-style-type: none"> • Higher process quality
Higher Speed/Separable Information Flow	<ul style="list-style-type: none"> • Lower inventory • Lower risk 	<ul style="list-style-type: none"> • Higher flexibility

Fig. 1.4 The promise of the electronic marketplace – a summary.

Higher speed/separable information flow finally enables many new options of doing business. As we discuss in Chapter 2, the speed with which information can flow in both directions independently of the flow of physical goods enables innovative business models *à la* Dell.

For e-markets in particular the **recovery of the coherence of the marketplace** in one – now virtual – space was arguably even more significant:

- 1 **Content.** Although goods cannot be physically present in an e-market – unless they are themselves digital like information or media – they can be described in more detail than ever before. Text, video and sound can be used in several layers of detail, which can be explored interactively. E-markets can achieve this for a larger variety of goods and overcoming constraints of space and time.
- 2 **Context.** The goods can be put into context. General information, industry trends, reviews and analyses, examples and on-line dialogues can be incorporated in novel ways. Personalization reduces the information flood to a relevant context.
- 3 **Commerce.** E-markets can handle even the most complex transaction. They can support all phases: certification, contract definition, order matching, contract negotiation, fulfillment support, financing and settlement. Also, efficient order tracking, changes and returns and conflict resolution can be offered. E-markets can also permit pricing strategies

not achievable in pre-Internet days, allowing any value point (intersection of price and configuration) to be offered.

One consequence of the electronic marketplace is universal access to the infrastructure and coordination mechanisms of global markets, and the opportunity for many small businesses to compete on par with large players. Conversely, large players can achieve the process efficiency of their nimble competitors. All of this spurs new possibilities of innovation through specialization and differentiation. It also offers opportunities for new service providers to develop in and around these marketplaces, similar to what happened in financial markets.

The trouble with these promises is that in practice they are challenging to fulfill. Entirely new concepts adapted to the new environment have to be developed.

First, there are some technological inhibitors: Software solutions to make innovative B2B market concepts work are – to be *very polite* – in their early infancy. Barring dramatic progress in software, the benefits of process efficiencies across a value network require large-scale standardizations and a staggering restructuring to take place, at both the company and industry levels.

Then, attitudes as to how e-markets are managed have to change. As long as major players view them as cost and efficiency drivers only, they will not be motivated to accommodate the potential innovations that could make e-markets much more than that. As a consequence e-markets cannot fulfill their potential for driving net business growth, opening new market opportunities or facilitating whole new types of value propositions.

Significant progress has been made in many areas – and we describe it extensively in this book. The totality of the above promises of the electronic marketplace, however, remain to this date just that: Promises.

The emergence and roller coaster of e-markets

The year 2000 will probably be remembered as the early turbulence in the digital storm of the electronic marketplace. Never before has a whole sector seen such a meteoric rise on the stock market, only to be followed by an even

more sudden and precipitous fall. The consequences continue to be felt across all industries.

The roller coaster in 2000

What companies in B2B e-markets have gone through in the year 2000 is hard to describe to those who have not directly participated in it. Sure, investors have felt the heat, but the hardest hit by these financial turbulences were the companies themselves.

In Fig. 1.5 we depict the development of the share price of three of the initially best known brand names in B2B: the vertical marketplace Chemdex/Ventro,⁴ the pioneer VerticalNet and the incubator ICG. At the end of the year 2000, however, ICG still had holdings in many companies and 330 million dollars in cash, giving it leeway for recovery. VerticalNet was likewise seeking to define a new direction (see Searchlight 11). Chemdex, by contrast, was closed down by its troubled parent company Ventro in December 2000. It had arguably been the most prominent e-market fall to that date.

→ **Searchlight 2:** ICG – a fallen star of B2B (p. 49)

Insert 1.2 contains a reflection on the dramatic course of the markets during the year 2000.

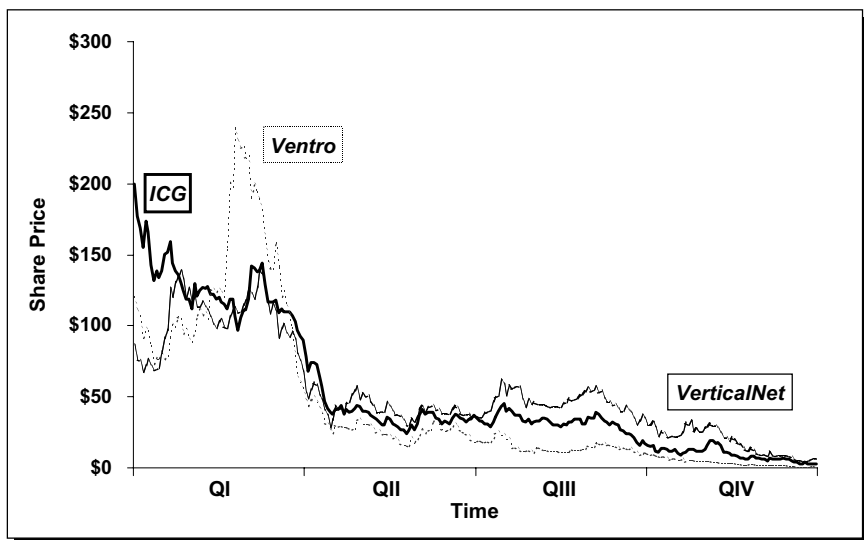


Fig. 1.5 Share price development of B2B marketplace aggregators in 2000.

INSERT 1.2: THE B2B ROLLER COASTER OF THE YEAR 2000

Let us briefly summarize what contributed to the rise and to the subsequent fall of e-market valuations. Business people in the electronic marketplace should study them carefully. It is critical that they develop a clear sense of the drivers of today's financial markets.

The rise

In early 1999, professional investors at large started to understand potential of B2B e-commerce. Two reasons converged:

- **e-Business was unavoidable.** It became increasingly evident that there was no other intelligent way for businesses to interact in a routine way than via the Internet. The question was no longer whether, but only how fast e-business would encompass all companies.
- **It was more than EDI 2.0.** The first B2B markets going public proved that e-markets offered interactions that went far beyond a remake of EDI (electronic data interchange).

The optimism could not be contained, fuelled by a generation of new stock traders that had never experienced anything but varying degrees of a bull market. ICG and Ventro went from IPO values in mid 1999 of US\$12 and 15 per share respectively to breathtaking valuations in early 2000 above US\$200 per share – essentially valued as if they would facilitate and get a piece of every transaction in the industries they served.

The fall

Arguably even more dramatic has been the relentless fall that has occurred after March 2000. By December 2000, for example, the above-mentioned companies had lost more than 97% of their peak value, trading respectively around US\$5 (ICG) and US\$2 (Ventro) per share. What had happened in between?

- **The B2C collapse:** B2C companies had been under considerable scrutiny since the end of 1999. At that point the Christmas frenzy of unlimited ad spending in the “ultimate quest for eyeballs” convinced everybody that this level of loss-driven activity was unsustainable. The subsequent focus on profits of “dot.coms” quickly caught on in the B2B space.
- **Covisint and the revenge of the old economy:** Initially, pure Internet companies looked invincible. They were riding the swelling tide and all the “bricks and mortars” reacted very slowly. Their position was reinforced by the fallacy of “insurmountable first mover advantage” theories. In B2C, large players like Wal-Mart and Toys R Us finally reacted by leveraging their brand and operational experience to build strong Internet businesses. B2B took a slightly different turn. Covisint, the large automobile market, triggered a wave of *announcements* of e-market initiatives by industry consortia. This instantly limited the growth opportunities for independent marketplaces by depriving them of the necessary liquidity. By yearend 2000 few of these consortia had actually delivered, and questions as to their long-term business potential remain. But they successfully “*muddied the waters*” and added a strong element of uncertainty to the pure “dot.com” businesses.
- **Microsoft, interest rates and the US economy:** Several other factors contributed to the valuation collapse. Overall confidence in technology sector stocks was shaken by the drop in valuation of previously ‘invincible’ MSFT (Microsoft) due to unfavorable developments of its anti-trust case. And in spite of all the “new economy” talk, rising interest rates could hardly be ignored forever. Then day traders and margin buyers transformed a slide into an avalanche through forced selling. And finally the emerging weakness of the US economy led high-tech to slide across the board, driving stocks towards yearend lows.

Everyone was affected by the carnage. Most prominent was the withering of the B2B aggregators Ventro, Verticalnet and ICG. The supposedly more stable integrators, such as Scient and Viant, lost 98% of their market value and are

facing extinction. Software players, such as Ariba and CommerceOne, were hit with a delay in early 2001.

Venture capital groups likewise were facing a combination of US institutional funds drying up, exit options closing – as both financial markets and potential acquirers held back – and hemorrhaging portfolios. Suddenly the very VCs became core drivers of the wave of mergers, restructurings, and closures that set in.

On the business side the situation for e-markets was equally disappointing. With the viability of many marketplaces uncertain and winning strategies elusive, companies hesitated to use e-markets on a large scale. Also, growth strategies had been overly ambitious, overestimating both the capabilities of the platforms and the likely speed of change of market participants. Last not least, the abundance of players with often indistinguishable business models did not exactly boost profitability.

Despite all these developments, the expected B2B e-commerce potential has proven unusually resilient. If anything, e-business has been reinforced as an unquestioned assumption in the business scenarios of all companies. And as N-to-N interactions between companies were clearly hard to set up, someone had to ‘organize’ the electronic marketplace – although not necessarily 10,000 e-markets as predicted during the hype.

However, the separation between direct e-business between companies and commerce through open B2B marketplaces is disappearing. Dynamic Trading Networks are developing, combining aspects of both forms. We show this merging of the two business models in the market forecast depicted in Fig. 1.6. In Chapter 7 “Profits in futurescape” we explain this in more detail.

A comment on the quantitative estimates of B2B e-commerce might be appropriate. There is no reliable source for such data and it might increasingly become unpractical to try separating “electronic” from “conventional” business. Many analysts, for instance, (under)estimate the electronic market size in 2000 at around US\$300 billion – however, Enron’s marketplace alone already surpasses this number.

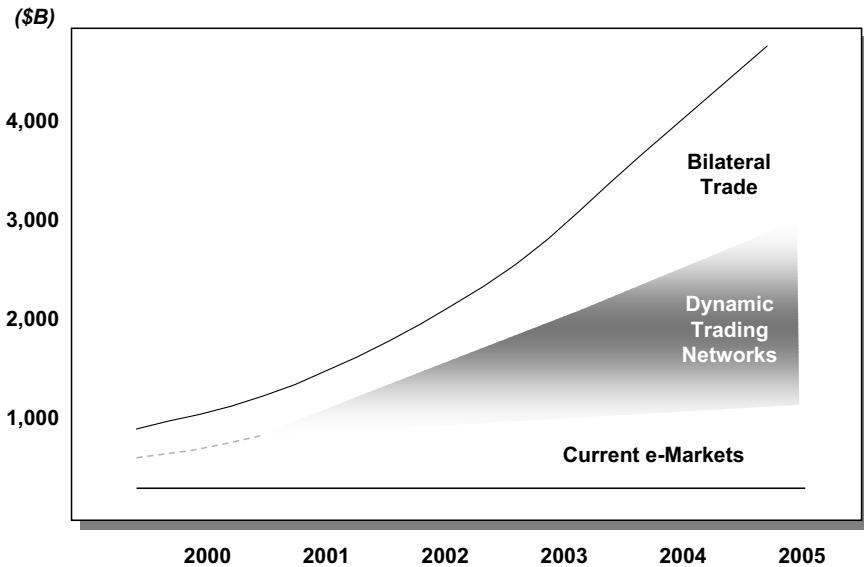


Fig. 1.6 e-market potential.

While few exemplary market species have fully evolved during the last years, the flood of money has provided for an – artificially – rich feeding ground for many B2B market organisms. As the food runs out, these organisms are facing a Darwinian fight for *survival of the fittest* and many of them are dying or being swallowed. But studying these experimental companies provides a tremendous learning opportunity and important insights, similar to the study of the Pre-Cambrian explosion of life on Earth.

STOP EXPERIMENTING AND SHAPE YOUR FUTURE!

Companies at large are fundamentally disoriented by the roller coaster. As the inevitability of the electronic marketplace persists, but no concepts have prevailed, many enterprises start “hedging” their bets. They adopt a “portfolio approach” over many markets and e-commerce initiatives, without committing to any single strategy. They intend *to reserve the right to play*, whatever the future might look like.

Instead, these companies only *reserve the right to lose*. Reaping the potential of the electronic marketplace comes from true commitment and intelli-

gent migration towards significantly changed processes, not “e-participation” in many marketplaces. It is critical that companies leave the “learning phase” and start making decisions. While industry participants will use many specialized markets in the future, adopting several electronic platforms for the *same* purpose is similar to using several software products for the *same* process. It should be as firmly rejected by companies.

The risks of the digital storm have to be faced. Fortunately, analyzing how companies and markets succeeded and failed over the last years is now possible. When combined with insights into the current and future developments it forms the new basis for the right decisions and actions. These decisions and actions *cannot be expected from top management or the strategy groups only*. As they permeate all business processes, they have to be understood, initiated and taken by *everybody* at their specific level of responsibility and action.

Our analyses and examples should provide for an in-depth understanding of developments inside and outside your industry, inside and outside your functional area. Based on a discussion of the future developments, we finally also give you a guideline to develop and implement your initiatives.

The time for experimenting is over. Successful strategies are being realized at this very moment. Start acting and shape your own future.

NOTES

- 1 Hypertext Markup Language.
- 2 Extensible Markup Language.
- 3 We would like to stress that “Holmes’ Law” is not a “law,” but merely a convenient shorthand for the tremendous opportunity that lies in making many-to-many interactions work. In mathematical terms “Holmes’ Law” is the simple count of the “power set.” As a consequence, “Holmes’ Law” cannot be “discovered” and we chose to name this shorthand after the fictional character Sherlock Holmes. For a nice independent note, parallel to this manuscript, see David P. Reed, *Harvard Business Review*.
- 4 See also Searchlight 14 “The chemical industry – poisoning the independents?”

SEARCHLIGHT 1: eBAY – THE MARKET CREATOR

Log on to eBay's Website www.ebay.com and you learn that you are on "The World's Online Marketplace." eBay is the undisputed leader in Internet consumer (and small business) auctions, in particular in its US home market. Network effects render it almost unassailable. eBay is not a category killer. Instead it has created a category. And it continues its profitable expansion at a time when other Internet pure plays are struggling.

Creation of a category

eBay was founded by Pierre Omidyar in collaboration with Benchmark Partners and launched its service in September 1995. It was the first major online consumer-to-consumer auction site. Most people agree that facilitating consumer online commerce via auctions was a brilliant idea. It tapped into a fundamental unmet need of the American people to find the 'ultimate garage sale'. eBay leveraged the core capabilities of the Internet. It did not threaten anyone in particular and thus created no strong competitive reaction. And if it could only scale fast enough, then network effects would make it almost unassailable.

eBay indeed leveraged its early lead and quickly became the undisputed #1 auction site in the US. Like Yahoo!, AOL and Amazon.com it built a widely recognized Internet brand. A few numbers might convey a better idea of eBay's business: During Q1 2001, eBay facilitated transactions of close to US\$2 billion. It claimed almost 30 million registered users and hosted 89 million auctions. Net revenues for the quarter were US\$154 million and net income US\$21 million. eBay's gross margin on auctions was an enviable 82%. On March 1, 2001, eBay celebrated its 500 millionth listing.

Leveraging "Holmes' Law"

As discussed in Insert 1.1, eBay is an excellent example of "Holmes' Law" for many-to-many interactions. The reader is welcome to calculate the theoretical network effects for 30 million users. This advantage of eBay is very tangible, in particular in its US home market. As the success rate of an auction (i.e. the price for the item) increases with the number of participants, sellers at eBay also ac-

cept higher fees than elsewhere. Massive brands like Amazon and Yahoo! have failed to catch up, even when playing the “Internet game” of offering the service for free. The frailty of this competition became obvious when Yahoo! tried to charge for its service in early 2001 and saw its auction community collapse instantly.

The business model: primarily transaction-related fees

eBay in the US acts as an electronic middleman to a whole continent. At year end 2000 its members traded nearly 4500 categories of merchandise from Beanie babies to fine antiques. eBay hosted several million items for sale every day, of which 600,000 were new. In some categories, like Swiss watches, the of-



Fig. 1.7 eBay's online marketplace.

fering was already so extensive that eBay was becoming a competitor to retailers.

The consumer-to-consumer interactions closely resemble a traditional auction process: A seller posts an item, interested buyers start bidding and the highest qualified bid carries the item. Buyers and sellers handle delivery and payment directly. eBay only acts as auction platform and information exchange. Ultimately it also strives to be a trust-center, primarily through user feedback: Positive feedback earns a seller a star. Having received several stars has a high economic value for a seller and acts as an additional incentive for him not to switch to another auction site.

eBay generates revenue from placement fees charged for the listing of items, success fees calculated as a percentage of the final sales transaction value and ancillary revenue from online advertising. It receives no fees from the buyers.

eBay's users spend an astonishing amount of time on the site, in September 2000 on average two hours per month. eBay is thus "stickier" (as the unfortunate jargon has it) than any other site.

Competitive threats in the home market are limited

Is there any way eBay could lose its dominance?

Originally it was thought that auctions might become just a functionality of portals. It seems, however, increasingly unlikely that even Yahoo! or Amazon might succeed in displacing eBay. Unless, that is, the company makes gross mistakes. The largest such glitches were the well-publicized technology platform breakdowns in 1999, and January 2001 saw another 11-hour outage.

However, threats can arise fast on the Internet. Napster's music exchange grew its user base past eBay in less than a year. Although Napster is not directly competitive, its growth story in a related consumer-to-consumer environment underlines the speed with which potential threats can emerge.

Also, eBay is not free from legal worries. There has been a lingering question about eBay's responsibility for authenticity of items (similar to physical

auction houses). Since eBay never takes possession of the items, US courts have so far ruled in its favor, but that need not be true for courts in other countries. eBay has banned many items associated with Nazi Germany and with the Ku Klux Klan.

The expansion continues

eBay has grown its services in several ways.

Firstly, auction markets (and thus network effects) largely stop at national boundaries. Thus eBay has to build/acquire its leading position in every single market. It has expanded geographically beyond its existing sites in the UK, Canada, France Germany, Japan and Australia. eBay has launched in Italy, Austria, Ireland, New Zealand and Switzerland. Also, eBay has used the collapse in valuations of many unprofitable Internet sites, e.g. to take a majority stake in Korea's largest auction-style Website, opening an additional market of about 3 million registered users.

eBay has also enlarged its service offering: In the summer of 2000 it acquired Half.com offering *fixed-price trading* of second-hand high-quality items. eBay has launched "*local trading*," providing access to 53 local markets in the US; and eBay Motors, the largest *specialty auction site* for automotive goods. It also partnered with icollector.com to include a new showcase for premium art, antiques and rare collectibles called "*eBay Premier*;" and eBay finally expanded its exchange to include the fragmented *small business marketplace*. The latter allows business customers to buy and sell new, used and refurbished business merchandise, such as industrial and office equipment, computers and professional tools. eBay has also formed a partnership with Microsoft around the .Net initiative.

All these are natural additions to better serve eBay's existing users and extend its "pervasive presence" to other parts of the population. They do not distract eBay from its chosen business focus. As of today, eBay continues to evolve and be a showcase for electronic marketplaces on the Internet.

SEARCHLIGHT 2: ICG – A FALLEN STAR OF B2B

“You should never confuse a bull market with genius” is a common warning on Wall Street. Sadly, ICG is an illustrative case. The Internet Capital Group, Inc. is an Internet holding company focused on B2B e-commerce. By the end of the year 2000 it still owned interest in over 70 B2B companies who were either “market makers” (i.e. e-markets) or “enabling service providers.” ICG is a hybrid between venture capitalists and more conventional holding companies.

During the boom ICG was valued at a significant premium above the sum of its investments, reflecting the market’s confidence in ICG’s “superior” investment strategy. The bust, however, caused it to be valued at a discount to the (already collapsed) valuation of its network. In a related context The Economist suggested: “you should also not confuse a bear market with idiocy.”

Background

The Internet Capital Group, a spin-off of Safeguard Scientifics, was founded in San Francisco in 1996 by Walter Buckley and Ken Fox. ICG’s stated goal (still) is to become the premier B2B e-commerce company by establishing an e-commerce presence through aggressive acquisition and consolidation of B2B companies in major segments of the global economy. By yearend 2000 ICG owned significant interest in over 70 B2B companies such as VerticalNet, Breakaway Solutions and PaperExchange.

ICG’s business model of a holding company focusing on start-ups was pioneered by CMGI (and to a certain extent by Thermo Electron). The model compares to more traditional holding companies in the way a venture capitalist, who also targets exclusively young companies, compares to an investment bank.

ICG grew aggressively in 1999 and 2000

ICG’s portfolio of partner companies started out modestly, but grew quickly in 1999 and 2000. While at the end of 1997 ICG had made a total of only 7 investments, in 1999 alone it added 26 companies and in 2000 another 34.

ICG's stated acquisition strategy has been to take 33% to 85% ownership interest in the number one player in each of the top 50 global B2B e-commerce markets. As ICG is a publicly quoted company, it has to keep a substantial stake in its network companies. Otherwise the SEC would categorize it as a mutual fund and impose significant restrictions.

ICG had been focusing on early stage investments in companies that it believed could build a first mover advantage in their respective industries. ICG has repeatedly stated that the key success criterion for its portfolio companies was to be the first to win critical mass in their respective sectors.

ICG gets involved in the operation of its companies

ICG is an incubator that potentially provides a number of services to portfolio companies. First, ICG offers strategic advice. Once the portfolio companies are integrated into the network, ICG also provides operational support: physical space and IT infrastructure as well as financial and logistical services.

Restructuring after the roller coaster

ICG's stock price skyrocketed from US\$12 opening IPO price in August 1999 to US\$212 in early January 2000 (adjusting for the 2 : 1 split in December 1999). The ensuing precipitous fall occurred in several waves and by December 2000 it had dropped to US\$2.75 per share, 75% below its IPO and almost 99% below its all time high. This still valued the company at over US\$700 million.

Financial statements by companies like ICG are notoriously hard to interpret as they account differently for their various investments – a practice which has opened it to SEC scrutiny. The best proxy would be the performance of its investments – however, only a few of these are available.

On November 8, 2000, ICG had for the first time presented disappointing results, revealing that the company had been burning cash to keep its investments going. In the same session ICG had announced a new “focus on profitability.” This meant a concentration on the roughly 15 most promising ventures and a restructuring of the remaining portfolio of about 60 companies. ICG had also announced a lay-off of 35% of its workforce. By late January 2001 ICG had “sold” or merged

four companies: Servicesoft, the remaining assets of e-Chemicals, the so-called “ICG e-commerce” unit and FreeBorders. ICG received no cash from these transactions except for US\$5 million for e-Chemicals. ICG had also announced that its stakes in Blackbird, Deja, VerticalNet Europe, EmployeeLife and Sagemaker are on the block. In early March it sold Rightworks for US\$114 million in shares to i2 and took a write-off of US\$699 million. Ouch, at that level even paper losses hurt.

ICG’s results, however, continue to underline the need for further restructuring. While ICG’s portfolio companies had net operational revenues of US\$713 million in 2000, ICG’s own share of that revenue only amounted to US\$161 million, on which it accumulated a pro forma loss of US\$484 million. Despite all efforts, ICG’s remaining cash reserve of US\$332 million by yearend 2000 was further reduced to \$264 million after Q1 2001.

It will be interesting to observe the further developments. To allow for comparison we present below ICG’s core investments by yearend 2000. Several have already been sold or discontinued. In later sections, we explore the difficulties that faced the kinds of markets ICG has focused on.

Sampling of ICG’s network companies (ownership % end of 2000)

Vertical market makers

Citadon – 27% ICG ownership	Citadon provides Internet-based project planning and management services for the construction industry
[CyberCrop.com] (ceased operations) – 80% ICG ownership	CyberCrop.com provides an Internet-based resource for agricultural producers to purchase services and inputs, and market their grain crops including wheat, corn and soybeans.
[e-Chemicals] (discontinued; assets sold to Aspen Technologies) – 37% ICG ownership	e-Chemicals provides end-to-end supply chain solutions for the chemical industry by using Internet connectivity to link all participants in the chemical industry.
eMerge Interactive – 36% ICG ownership	eMerge Interactive provides Internet-based content, community and transaction services in an online marketplace for the beef industry .

iParts – 66% ICG ownership	iParts provides Internet-based sales and distribution of electronic components .
PaperExchange.com – 83% ICG ownership	PaperExchange.com provides sales and distribution of all grades of pulp and paper for members in 75 countries.
RetailExchange.com – 28% ICG ownership	RetailExchange.com provides manufacturers with an online marketplace for trading excess consumer retail inventories .

Horizontal market makers

Universal Access – 22% ICG ownership	Universal Access provides integrated, high-capacity bandwidth provisioning services for business customers.
AsseTrade.com – 48% ICG ownership	AsseTrade.com provides organized, targeted and comprehensive Internet-based asset and inventory recovery, disposal and management solutions.
[ICG Commerce] (merged with ePValue) – 44% ICG ownership	ICG Commerce provides strategic sourcing consulting and Internet purchasing solutions .

Enabling services providers

Breakaway Solutions – 30% ICG ownership	Breakaway Solutions provides integrated strategy consulting, systems integration services and application hosting to middle-market companies .
eCredit – 42% ICG ownership	eCredit provides real-time credit, financing and receivables management solutions through its software and infrastructure solutions.
iSky – 26% ICG ownership	iSky provides integrated customer loyalty management services to improve customer communications and relationships.
Logistics.com – 29% ICG ownership	Logistics.com works with shippers, carriers, and third parties to drive inefficiencies out of entire transportation process .
ONVIA – 19% ICG ownership	ONVIA provides small businesses with a single Internet-based source for a wide range of tailored services, products, news and expert advice .
[RightWorks] (sold to i2) – 54% ICG ownership	RightWorks provides next-generation e-business applications for e-procurement process.
Vivant! – 38% ICG ownership	Vivant! Provides an Internet-based solution where buyers and suppliers can exchange contractor talent and services. The Vivant Exchange is a network for fast and efficient project sourcing and management .
VerticalNet – 28% ICG ownership	VerticalNet provides industry specific, Web-based multinational trade communities for businesses and professionals .

The Reshaping of Business Relationships

COMPANIES ARE FUNDAMENTALLY DEFINED by their business relationships. These in turn have evolved in an economy, where industries are highly complex and many processes suffer from inefficiencies. Therein lies the growth opportunity of electronic markets: When inefficiencies get eliminated and complexities can be handled, all current business relationships can be challenged. It is this reshaping of rich relationships, rather than the efficiency gains in isolated processes or transactions, which are at the core of the Internet revolution. The electronic marketplace can thus trigger the restructuring of whole industries. You should pose two questions: How will your sector evolve? And what specific challenges will your company face?

NAVIGATOR THROUGH CHAPTER 2

Complexity pervades value chains and relationships

Most sectors are characterized by complex structures. The familiar textile and construction sectors are good examples for how seriously complexity can affect quality, time and cost. E-commerce decouples the information channel, introducing innovations such as infomediaries and built-to-order processes. The electronic marketplace also supports collaborative commerce and business webs. It can reduce inefficiencies and handle complexities and thus fundamentally restructure these industries.

Efficient buying and selling challenges traditional relationships

Buying and selling are at the core of all commerce. These functions also happen to be among the least efficient today. They are strangled by a high cost-to-

switch and a high cost-to-serve respectively, and tend to rely on long-standing relationships. In the electronic marketplace, combined with internal e-business processes, these relationships will be reshaped.

How the Internet redefines business relationships

There are five fundamental levers to reshape business relationships: Dis- and re-intermediation, the handling of a wider range of customers and suppliers, the formation of business networks, new transparency of business relationships and efficient demand network management.

Test your vulnerability!

You should identify early on the opportunities and risks of e-markets for your company! Using ten criteria, check how quickly you can be affected by the developments in the electronic marketplace.

COMPLEXITY PERVADES VALUE CHAINS AND RELATIONSHIPS

A large number of industrial sectors are characterized by complex structures. It often appears that these sectors do not control their complexity, but are instead controlled by it. Multi-tiered value chains with complex information and transaction relationships are the rule. Each stage claims its own value-add, thus ultimately producing high product prices. Let us demonstrate this by using two familiar and particularly well-suited examples: The textile and the construction sector.

Textiles: why verticalize?

The traditional value chain in the textile sector is characterized by an extraordinary degree of division of labor and complex global business relationships between many small and medium-sized companies. The value chain is depicted in Fig. 2.1. First, fibers are created from both natural and chemical raw

materials. The fibers are then processed into threads, which are in turn woven into cloths. These cloths are passed on to the production plants, already commissioned by the textile manufacturers who determine the various collections. The manufacturers finally supply the retailers, who sell the items of clothing to the end consumer. In addition there are ancillary participants, like suppliers of dyes or dry goods in the early stages and the outfitters and handlers in the later stages of the value chain. Also involved are a large number of service providers, such as fashion and design houses, agents and intermediaries (e.g. importers), as well as finance and logistics specialists.

The textile value chain, therefore, involves many separate organizations at various stages, with a correspondingly high number of interfaces. At each individual stage, there is **insufficient knowledge** about the requirements of the preceding and subsequent stages. Almost all textiles are subject to the vagaries of fashion, so the goods are only produced for a short period of time. As a consequence, everything has to be highly coordinated. Despite the short fashion cycles, planning horizons of 12–18 months are quite common in the traditional value chain. All this occurs against the background of global purchasing, where emerging economies and a large number of small companies

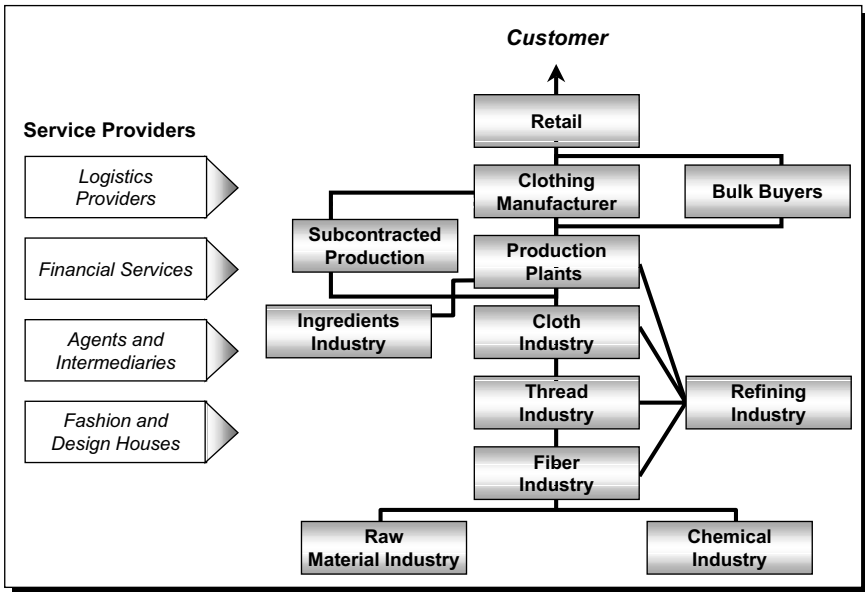


Fig. 2.1 Complexity in the textile sector.

play an increasingly important role. A large proportion of textiles sold in the Europe and the US is produced in China and Southeast Asia. Nevertheless, even highly industrialized countries still have thousands of textile companies.

The value chain is highly fragmented at most stages: Only the chemical industry and, to some extent, retail are characterized by large conglomerates. There are substantial co-ordination problems in the value chain as both the transparency and the degree of professionalization of the textile sector are rather limited.

Various attempts have been made to overcome the fundamental problem of the sector, namely **the disparity between the long and complex production cycle and the very short fashion cycles**. An early innovator was Benetton, who addressed the issue by changing the production process. It realized that the shortest-lived attribute in fashion is color, and therefore introduced the dyeing of fully produced clothing items as the last step in production. While very successful, the change had the obvious drawback of restricting Benetton to essentially unicolor items.

A more fundamental change in the industry occurred over the last decades through **the rise of integrated textile companies**. Both Europe and the US have seen the surge of companies like The Gap, Hennes & Mauritz and Zara, who – similar to Ikea in furniture – no longer focus purely on retailing. Instead, they are backward-integrated producers of branded fashion goods with full control over the design, production and marketing of their products. At the same time, clothing manufacturers such as Polo Ralph Lauren, Calvin Klein or Hilfinger have opted for forward integration and opened up their own point-of-sale networks. Companies such as Fruit of the Loom and Sara Lee have merged the backward functions of the textile value chain under one roof. Verticalization reduces complexity and shortens lead times. It thus reduces the fashion risk by allowing integrated suppliers to respond to market trends more quickly. Furthermore, integration increases the quality and consistency of the textile brands – and hence their sales potential.

The success of integrated textile companies has often been described as “revolutionary”. Yet it took two decades, captured only a fraction of the sector, and had the trade-off to limit flexibility. A smarter way might be to go

electronic. It would not be hard to leverage the Internet to increase market transparency and improve communication, thus being able to **handle the complexity**. A core lever is the decoupling of information as discussed in Insert 2.1. Industry participants might start with a vertical interchange of mar-

INSERT 2.1: WHEN INFORMATION DECOUPLES ...

It has been written that the Internet shortens supply chains. Others have claimed that on the contrary the Internet lengthens supply chains. In reality, something different is happening: the Internet **decouples** processes and introduces parallel channels – some shorter, some longer, but all networked.

In particular, **the flow of information decouples itself** from the flow of physical goods. Potentially, every part of the supply chain (or demand network) has access to information about every other part, from the processor of raw materials to the end-customer. This has two important consequences:

The rise of infomediaries

The flow of information can be organized and structured independently of the flow of products. Market participants exploiting this opportunity are called *infomediaries*. E-markets, which we analyze extensively in this book, are in essence infomediaries. Contrary to traditional intermediaries, however, infomediaries do not introduce a separation of business partners, but instead enable them to connect directly. Infomediaries preserve the coherence and immediacy of the electronic marketplace.

Mass customization

When the flow of information no longer follows the flow of goods, but becomes truly bi-directional and reaches all parts of the supply network, new business can be considered: later parts of the supply chain – and ultimately the end-customers – acquire the ability to directly influence the production of goods, while preserving large-scale production efficiencies. This can occur explicitly (*built-to-order*) or implicitly (*profiling*). It has strong repercussions on the organization of the production process and on the physical delivery of goods.

ket information, shortening the cycle through improved planning data. Or they could be more ambitious and strive for mass customization of clothing through a built-to-order service, completely eliminating the fashion risk and getting paid before having to start production. Related industry sectors, such as shoes, leather goods or furniture show similar industry conditions and thus restructuring potential.

Construction: improve coordination!

The construction sector is not only one of the largest sectors of the economy, it is also one of the most complex. We again see a multi-stage value chain with construction materials' manufacturers, wholesalers, retailers, developers, general contractors, sub-contractors, design and build companies, architects and engineering companies, planning authorities and building departments, as well as industrial enterprises, facilities managers and DIY enthusiasts. The relationships in the value chain are obviously very diverse. All stages can be linked in various ways, through a direct sales relationship or indirect dependencies. The construction sector is characterized by a large number of small local companies. The average sub-contractor business, for example, employs less than ten people, and enterprises with more than 100 employees are a relative rarity. Three examples should serve to illustrate the complexities of the construction sector:

- The **window market** offers a particularly vivid example of the complexity of the product supply chain in the construction sector, see Fig. 2.2. Very often, windows are individually manufactured products. They consist of frames, glass and small ironwork. The frames are made from wood, PVC or metal. PVC and metal frames are made from sections, which are often produced by many different component manufacturers. The window fabricators are even more fragmented, with the largest manufacturers only capturing small shares of the market. While a direct sales force or agents receive the customer orders, the actual installation is carried out by thousands of highly local and specialized companies. A market niche is covered by retailers for home equipment and home improvement.

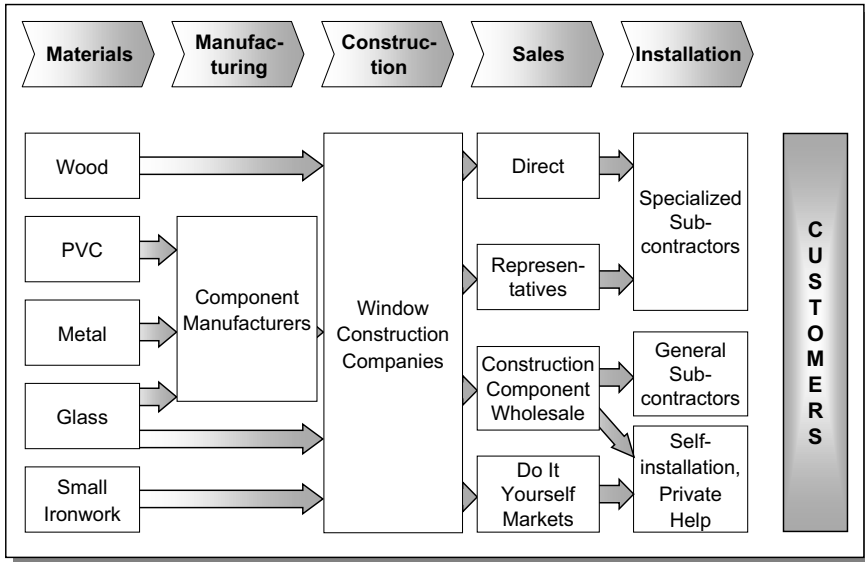


Fig. 2.2 Complexity in the construction sector: example windows market.

- **Tenders for large projects** are another example. Developers, architects and engineers typically determine the design of the project and the associated requirements. The requirements are put out to tender among several general contractors. These will usually pass them on to several smaller sub-contractor businesses, from which bids are sought. Each of those will in turn ask several wholesalers to quote for the supply and delivery of the building materials. Thus, wholesalers are often presented with the same RFQ (Request for Quote) by multiple customers. In the meantime, the manufacturers of building materials have heard about the project and might also try to influence the specification and procurement process. As a result, many players in the industry accumulate very high costs, although the probability of success in the tender is no higher than 20–30 percent. The end customer pays dearly for the transparency achieved through the tender process.
- Finally, the actual **construction of a building** is in itself a complex process. There are significant national chains for supplying materials, but there are also many local building material or specialist companies – in particular for high complexity/specification products. Subcontractors are

organized in numerous small companies – many thousands in fact working as ‘one man bands’. Contractor companies and architect practices are also highly fragmented. For instance, in the UK the top 5 practices make up only 5% of the market. It is small wonder that significant delays and/or budget excesses are endemic to the industry. This has spawned an extensive use of legally enforceable penalty clauses for late completion to force contractors to literally “get their act together.”

These three examples illustrate various aspects of the complexity dominating the construction sector. The Internet can bring considerable improvements in all cases. The window market is suitable for the previously discussed **on-line built-to-order marketing** as executed by Dell in PCs. Communication, coordination and collaboration via the Internet could also markedly improve both the quality and expense of tenders and pricing and aid in assuring fast and on-time completion of construction projects. We return to the construction industry in Chapter 9 to see how even much more fundamental changes could occur.

Insert 2.2 “From collaborative commerce to demand networks” discusses some general concepts of these changes.

We can diagnose complexities of various degrees similar to the textile and construction industries across virtually all fields of our economy. The complexity of information and transaction has serious repercussions for **quality, time and costs**. Consequences can be seen in product development, stock levels, logistics and the high cost of purchasing and distribution. Electronic markets can handle complexities more efficiently and thereby fundamentally restructure business relationships.

EFFICIENT BUYING AND SELLING CHALLENGES TRADITIONAL RELATIONSHIPS

Complexity and inefficiency are but two sides of the same coin. When a diverse set of options or steps cannot be handled efficiently we call it complex. We either use many people to handle the steps or – more rationally – reduce the number of options. Either way we pay dearly, be it in higher prices, lower quality, restricted choice, longer time frames or less flexibility. Nowhere are these

INSERT 2.2: FROM COLLABORATIVE COMMERCE TO DEMAND NETWORKS

Solutions to satisfy customer needs typically require the collaboration of many players, who are no longer located within the boundaries of one enterprise. Instead, suppliers and partners, as well as customers and remote employees have to be incorporated into processes. This is commonly called the transition from an enterprise to an **extended enterprise**. The resulting economic structure is **collaborative commerce**. One of its most tricky aspects is the integration and partial automation of processes across companies, so-called **business-to-business-integration**. As we discuss in later chapters, Web-technology and e-markets can be core enablers of collaborative commerce, but early transaction-oriented e-markets often failed to provide significant ‘collaborative functionality’. When partners collaborate beyond a single project and on a preferred basis, the resulting value creating entity is called a **business web**.

One of the most important aspects of collaborative commerce and business webs is that they have the end customer as the decisive focal point. This results in an important mental shift, **from** thinking in **supply-driven chains** **to** the thinking in **demand-driven networks**. Customer-centric demand networks are at the core of value-creating strategies in the electronic marketplace and we shall discuss them in depth later.

trade-offs more apparent than in the most basic processes in commerce: Buying and selling, see Fig. 2.3.

These inefficiencies and the way the electronic marketplace affects them can be understood by using two simple, but powerful, concepts: cost-to-serve and cost-to-switch, see Insert 2.3.

The inefficiencies of buying: cost-to-switch

Cost-to-switch is well exemplified by companies facing a complex and multifaceted supplier market – with severe consequences for the internal processes. What might at first appear as an “embarrassment of riches” – there are so

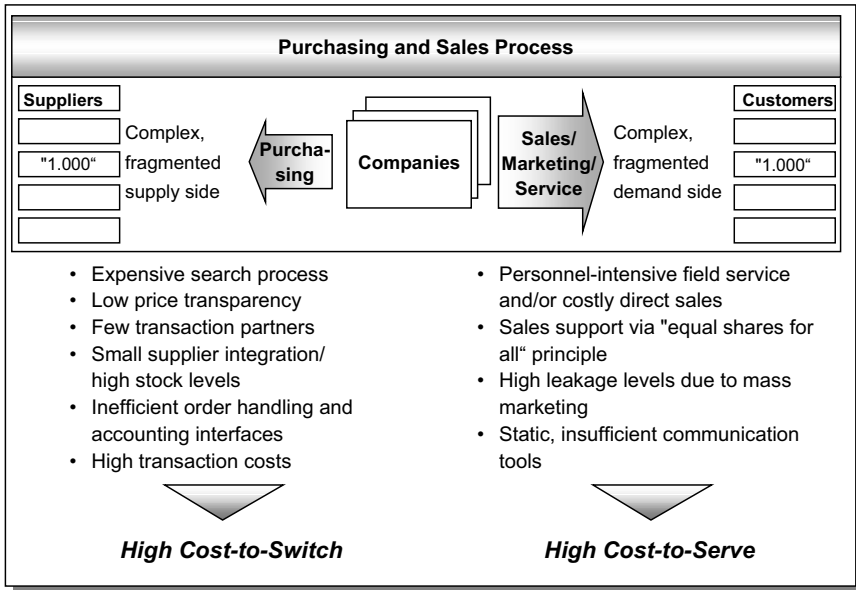


Fig. 2.3 Inefficient processes in purchasing and sales.

INSERT 2.3: COST-TO-SERVE AND COST-TO-SWITCH

E-markets fundamentally change the relationship, and indeed the balance of power, between buyers and sellers by removing inefficiencies in the buy-sell process. These inefficiencies have long been exploited by firms in “imperfect” markets to create customer “lock-in” through high “cost-to-serve” and “cost-to-switch.”

- **Cost-to-serve** captures the costs of creating the exact product or service configuration required by the customer and the costs of delivering to and servicing the customer after sales.
- **Cost-to-switch** is the combination of search costs, agency costs and set-up costs that a customer must bear in order to find alternative vendors.

As we shall see, either one or both of these cost categories have traditionally served as major barriers to efficient commerce.

many good options that it is hard to choose – can quickly turn into a severe lock-in, once the choice is made and processes finally integrated.

Typical development stages for purchasing processes are as follows. A labor-intensive search for products and suppliers is the first major cost item. Product details and configurations must be laboriously validated, as well as order and delivery timescales and more qualitative aspects such as supplier reliability, timeliness and flexibility. A select number of trusted suppliers are then chosen for actual commerce. At this early stage, integration with suppliers is small, and both sides hold potentially high levels of stocks. The interfaces in order handling and accounting are complex. Total transaction costs are high.

Over time, increasing business requirements lead to the establishment of more and more supplier relationships, with the core processes still essentially unchanged. The purchasing department starts heading towards an unfettered growth.

Let us return to textiles as an example. The complexity described leads to expensive processes in purchasing and control of fashionable goods. The stocks are also high-risk because the goods are highly “perishable”. To overcome these issues, retail at the end of the value chain requires a large purchasing organization with a multitude of roles, such as strategic purchasers, supplier relationship managers and purchasing managers, involving several hierarchy levels.

The advanced players try **reducing complexity**. This can be achieved through concentration on core suppliers and centralization of purchasing functions. Simplification of the product range and purchasing through middlemen can also contribute. Alternatively a company can restrict the range of sales (and thus purchasing) through specialization. More intelligently, companies have adopted a modular design – while containing the reduction of choice.

The inefficiencies of selling: cost-to-serve

In sales, too, a company is faced with complex and multi-faceted market conditions where customer segments may have significantly different needs that strain the supply system. A large field organization is typically the only way to reach the customers without intermediaries. Sales support measures are often

inefficiently based on the principle of “equal share for all”. The means of communication used are frequently static and insufficient (e.g. special catalogues and price lists). These limited tools must serve highly diverse needs – in terms of customer profiles, products and range of services.

Let us return to the construction industry and use the example of an electrical product wholesaler, see Fig. 2.4. The principal customers for electrical product wholesalers are small sub-contractors, where the average company in many countries employs only a handful of people. This multitude of small customers does not allow for a cost-effective direct sales force. Also to be covered are, however, several large-scale sub-contractors with several hundred employees, as well as big industrial customers and government agencies. Their large projects demand the highest level of customer care. Products thus range from standard electrical assemblies and accessories and simple lighting devices up to complex electric systems for whole buildings. Services from electrical product wholesalers range from simple order taking all the way up to the planning of large-scale projects. Almost all combinations within this range must be taken into consideration when structuring sales. This entails an expensive sales organization with numerous specializations (internal and external, regional differentiations), all to be covered by the notoriously low wholesale margins.

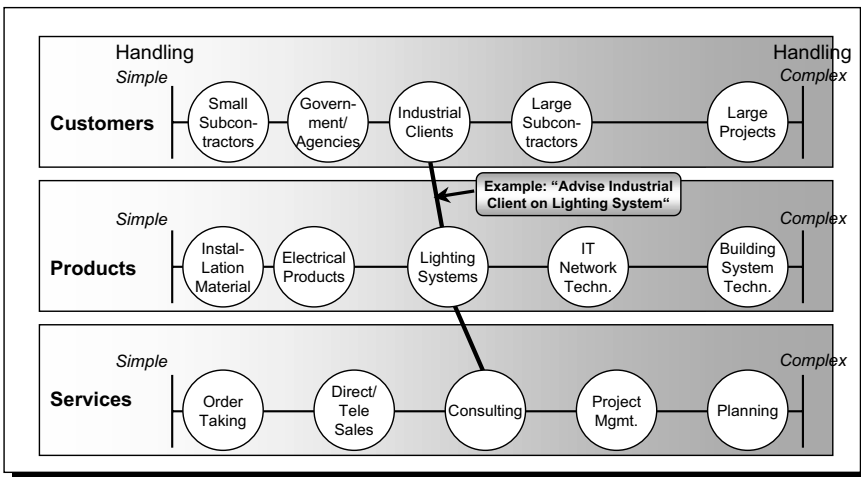


Fig. 2.4 Complex structure of the sales and distribution process for a wholesaler of electrical products.

Again, many attempts have been made to address the issue. Specialization in terms of products, customers and scope of services are the most common measures. Standardized customer care processes were devised to try optimizing sales coverage. In the end, however, there are still thousands of different types of customer contacts, requiring appropriate handling by costly sales people.

The **electronic marketplace** offers a different approach. Rather than reducing choice, **it reduces inefficiencies** both in costs-to-switch and costs-to-serve. It thus **allows complexity to be handled, even increased**. Communication and interaction are cheaper, quicker and up-to-date. Mass customization promises an end to the incompatibility of customization and scalability. With it, business relationships undergo fundamental changes. In the course of this book we describe the full extent to which the Internet changes prevailing structures, both within and between companies, as described in Insert 2.4. Once electronic marketplaces truly fulfill their promises business relationships and value chains as we know them will disappear.

HOW THE INTERNET REDEFINES BUSINESS RELATIONSHIPS

The complexity of industry sectors and business relationships, as well as the inefficient and undifferentiated processes in purchasing and sales, form a fertile breeding ground for e-markets. The efficiency gains of the Internet introduce an essential disruption: **Business relationships are being reshaped**. It does not mean that personal relationships no longer count. We explore this aspect in Insert 2.5.

Let us summarize the most common ways of the reshaping of relationships.

1 Dis- and reintermediation

The break-up of traditional value chains can lead to the circumvention of intermediate stages: **dis-intermediation**. Direct selling to customers takes place while bypassing existing middlemen. This applies in particular to all digital

**INSERT 2.4: FROM E-COMMERCE TO E-BUSINESS –
THE LEGACY CHALLENGE**

It seems appropriate that the world's largest IT company, IBM, was the first to promote the arguably most significant paradigm shift in the electronic marketplace: The shift from e-commerce to e-business.

The guiding principle is simple: the overwhelming part of the benefits of the electronic marketplace can only be realized when companies adapt their internal as well as their external processes. Early examples of highly efficient external channels ending in prehistoric internal processes were both common and alarming.

Also, the boundary between internal and external processes is fading. E-markets, which started out concentrating on external processes only, are increasingly expected to support a handling of – or at least a seamless handover to – internal company processes.

When implementing e-business in practice, companies face the specter of back-end integration with their legacy systems – the most dramatic aspect of the “software gap,” discussed in Chapter 8.

goods such as software and information, as well as media and travel. Distribution of these goods over the Internet renders today's sales channels superfluous. However, disintermediation can also apply to physical goods when sold directly over the Internet. In some sectors, current intermediaries aggressively try preempting such developments by shifting their own business onto the Internet. Examples include all types of brokerage, such as real estate agencies and job brokers.

Opportunities also abound for new intermediaries, a process called **re-intermediation**. Virtual players without “dead weight” emerge at all stages of a value chain. In addition, entirely new functions appear, such as information brokers and other infomediaries. Again, the most dramatic changes occur for digital products as we discuss in Searchlight 27 on the media and entertainment industry. Some intermediate service providers offer services around

INSERT 2.5: A TALE OF PERVASIVE PRESENCE, CUSTOMER EXPERIENCE AND TRUST

In business-to-consumer (B2C) e-commerce it is well understood that the smart combination of complementary on-line and off-line strategies is a winning proposition. A commonly quoted best practice is REL, the outdoor sports retailer. It has mega stores with artificial rainforests or climbing rocks, and combines those very effectively with e-commerce and catalogues.

Essentially these “clicks and mortars” are trying to assure three attributes:

- **Pervasive presence:** Marketing and the ability to buy should be “pervasive.” Wherever the customer may be, the company services should reach him.
- **Customer experience:** The customer has to be able to experience the goods/services of the company in whatever way he wishes and always be pleasantly surprised.
- **Trust:** Sometimes seen as a subset of customer experience, trust is an essential element of business relationships.

Although in a B2B context these attributes remain valid, they no longer require an expensive mortar-based infrastructure as in retail. Instead, they can be achieved over the Internet, with the exception of the last one, trust.

Business relationships remain personal and thus require trust.

And while the electronic marketplace can ease the finding of business partners and, once a relationship is established, the maintenance of this relationship, it is a poor medium for establishing trust. While people are working on future mechanisms to establish trust over the Internet, current B2B ventures can safely assume that any significant business relationship requires meeting at least once in person.

e-marketplaces, e.g. Logistics.com and ClickLogistics. All these services impact established business relations. The Internet will continue to open up new opportunities for innovative service providers and intermediaries.

The levers we discuss can also be understood using the cost-to-serve/cost-to-switch concepts. For instance, disintermediation decouples the processes relevant for costs-to-serve and short-cuts them. On the other hand, re-intermediation often focuses on those processes that can be restructured to reduce the cost-to-switch. We encourage the reader to apply a similar analysis to the following levers.

2 Handling a wider range of customer and supplier relations

New types of Internet services are able to break into established business relationships. This need not be a direct replacement, but can start with the ability of a company to handle a wider range of relationships efficiently. The newcomers to be invited are typically the electronic service innovators. As a consequence, entirely new customer and supplier relations develop. The Internet increasingly establishes global sales and purchasing markets, unless high transport costs restrict commerce to regional players. Barriers for the establishment of new business relationships fall. New criteria and mechanisms for evaluating market participants emerge. In the end, e-market services develop as the specific requirements of market participants become transparent and are addressed.

3 The formation of business networks

Traditionally, small companies were seen as flexible and customer-centric, but had limited resources and reach. And large companies were perceived as rich in resources, but were bogged down by bureaucracy. The Internet, it was argued, favors small companies, as it enables them to effectively compete with large ones, while preserving the original flexibility.

However, the small versus large focus is becoming increasingly irrelevant. As we discuss in the Insert 3.2 “Not small, not large, but networked,” the

formation of a well-functioning network is essential and this can be achieved both by small and by large companies.

While small companies can indeed now reach customers globally, large companies can in turn eliminate hierarchies and maintain a large number of highly personalized relationships, allowing them to become more effective as well. One consequence is an ever-increasing specialization of individual “network nodes.” In this respect the effect of the electronic marketplace is similar to efficient markets in general. The size of a company loses relevance, but its network and its specific excellence become all-important.

4 New transparency and knowledge of business relationships

As business relationships are increasingly handled on the Internet, something else happens: They become more transparent. This occurs at several levels. Firstly, it becomes easier to gather information about hitherto unknown potential business partners. The services of current partners are thus evaluated more carefully. Also, business relationships of individual sales people become more transparent and transform into company know how. For example, Amazon.com knows its customers better than Barnes and Nobles does. An individual sales person of Barnes and Nobles might understand an individual customer at a specific point in time very well, but none of this becomes company know how. At Amazon, instead, such know how is systemic, as it stems from the extensively processed record of digital interaction with customers. Interestingly, sales and purchasing people occasionally fear the loss of power: Financial brokers have been known to resist the change to electronic customer care for this very reason. Purchasing people may regret the decrease of personal attention by suppliers in a similar way. This is the area where “efficiency” of electronically mediated processes runs into the problem of “behaviors” that need to change to fully take advantage of the power of the medium.

5 Efficient demand network management

Finally, the whole “supply chain” management of industries will change. High levels of stocks can be reduced at all stages. Real-time transparency of pro-

duction capacities, coupled with improved information interchange and business integration of the market participants, trigger reductions in planning and delivery times. The supply-chain thus turns into an efficient, end-customer driven “demand network.”

In view of the above, the term “revolution” can justifiably be used to describe the changes in the business relationships across all parts of the value network. However, the winds of the digital storm blow with different intensity in different quarters and not all sectors and companies are affected to the same extent. You thus have to ask yourself, what immediate opportunities and risks the electronic marketplace entails for your own industry and more importantly for your own company.

TEST YOUR VULNERABILITY!

You must in time recognize the opportunities and risks of e-markets for your company. While it is safe to assume that sooner or later all companies will be affected by the commercial use of the Internet, “time frames are of essence.” Some industries are more vulnerable than others. Some companies will take the initiative, whilst others will merely try to adapt. There will be winners – and there will be losers. You should check now how quickly your sector and your company will be affected by the e-market development. To enable you to test your vulnerability, we have identified ten criteria in an e-market check which would favor immediate entry into the electronic marketplace, see Fig. 2.5. If you satisfy more than half of them, you should be very aggressive in developing an e-market strategy.

Our e-market check can, of course, only provide an initial assessment of the need for immediate action. You cannot neglect the need to act, but at the same time you cannot simply overlook the major risks. Recent history, as we have seen, contains ample examples of both types of mistakes. Instead, you should develop the right e-market strategy, both to prepare your competitive position over the medium term and to participate in the immediate opportunities. Such a strategy must address the specific needs of your company, but also take a wide enough perspective not to be outpaced after a short period of time.

TEST YOUR VULNERABILITY!		
E-Market fit of your industry	Yes	No
1 Largely interchangeable products (no real differentiation, homogeneous goods)	<input type="checkbox"/>	<input type="checkbox"/>
2 Complex value chain (several stages, many participants, international)	<input type="checkbox"/>	<input type="checkbox"/>
3 Intransparent structures (high diversity of products, high SG&A costs)	<input type="checkbox"/>	<input type="checkbox"/>
4 Complex transactions (multiple service components, substantial need for coordination)	<input type="checkbox"/>	<input type="checkbox"/>
5 Multiple competitive initiatives (strong start-up's, established players)	<input type="checkbox"/>	<input type="checkbox"/>
6 High Internet affinity of industry sector (Internet penetration among participants)	<input type="checkbox"/>	<input type="checkbox"/>
E-Market fit of your company		
7 High complexity on the supply side (many suppliers, many small size orders)	<input type="checkbox"/>	<input type="checkbox"/>
8 High complexity on the customer side (many small customers, heterogeneous customer segments)	<input type="checkbox"/>	<input type="checkbox"/>
9 Costly customer relationship management (ongoing customer service, multiple interaction channels)	<input type="checkbox"/>	<input type="checkbox"/>
10 Ability to customize offer (information, service, built-to-order production)	<input type="checkbox"/>	<input type="checkbox"/>
Final result		
> 4 YES:	High propensity for e-markets	
≤ 4 YES:	Moderate propensity for e-markets	

Fig. 2.5 Checklist: test your vulnerability.

We will return to both the industry analysis and the specific strategies for your company in Part IV of this book (Chapters 9 and 10).

PART II

Under Sail: Current E-market Strategies Explained

Having reconfirmed the fundamental value proposition of electronic marketplaces as distinct from the initial hype, we proceed to discuss in this section the forms e-markets have assumed in different environments. We classify, analyze and explain the most promising initiatives. Detailed and international **searchlights** of whole industry sectors as well as individual players form an integral part of this section.

Any discussion of e-markets and their substantial business benefits must recognize that from today's perspective the overall development of e-markets has disappointed business analysts and investors alike. The difficulties that e-markets have encountered in building customers and revenues, however, are not altogether atypical. All business pioneers with new, disruptive technologies and business models have discovered that the path from innovation to mass adoption is not linear. The well-known Technology Adoption Curve posits several phases for the market adoption of innovative solutions. The most challenging step is from a few early-adopters to the broader market. Some customers immediately see the benefits and are sophisticated enough to incorporate even rudimentary versions of a new technology. Mainstream customers, however, require more fully elaborated products and solutions. Sometimes the entire business model of the pioneers has to be revisited for the mainstream. The critical balance to strike is always between ease of adoption and business impact. On the one hand the number of process changes has to be kept low, so as to ease adoption. On the other hand, the impact of those select changes has to be significant enough, so as to achieve a strong business return.

In the short history of e-markets we have already seen several phases, all with their specific challenges. The first wave of independent markets has

been struggling to achieve liquidity. The next phase of consortia tends to have some level of guaranteed liquidity, but is getting entangled in governance issues. Private marketplaces, popular at the writing of this book, present the lowest risk. They are always useful, as companies channel their electronic buy-side and sell-side relationships, as well as the multiple internal interfaces. But they are also a far cry from achieving a true electronic marketplace and leveraging the full potential of Holmes' Law¹ of many-to-many interactions.

At the same time, every category has already produced stunning success stories. Enron's commodity marketplace has facilitated hundreds of billions of dollars of transactions and drives the revenues of its parent company. IBM, Intel, General Electric and more claim many hundred million dollars of savings from their B2B e-commerce activities. E-procurement intermediaries of indirect goods, such as Grainger, have rapidly increasing Web businesses. And private sell-side solutions, such as those of Cisco and Dell, have become fixtures in today's business environment.

The analyses and cases presented in this section provide insights and highly innovative ideas for e-markets, from experimental to established. A thorough understanding of the initiatives from your own industry or function – and possibly even more from unfamiliar industries and functions – is very important. As mentioned earlier, however, this just represents the first phase of the Digital Storm. **Critical questions** remain about the profitability and sustainability of many models. We turn to these in Part III of this book, in particular in **Chapter 7**.

Figure II.1 outlines the logic of Part II.

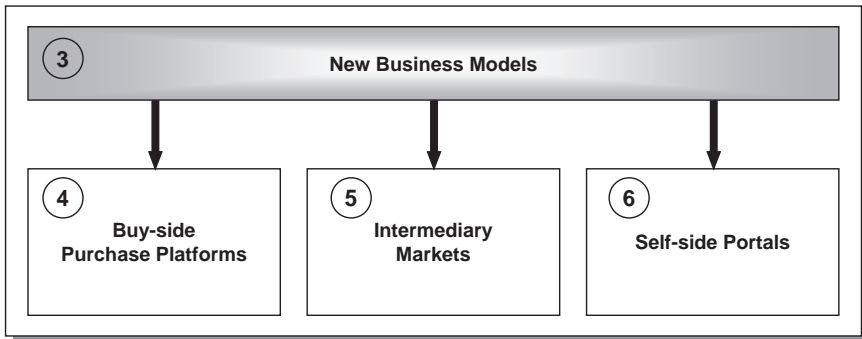


Fig. II.1 Outline of Part II.

In **Chapter 3** we discuss in more detail the benefits that e-markets deliver and various complementary classification schemes. The scheme we adopt in this book distinguishes **three types of e-markets: purchasing platforms, intermediary marketplaces and sell-side portals**. We conclude with a discussion of the business potential and adoption cycles of e-markets in various industry sectors as well as the challenges that they face. In the following three chapters we look at the three types of e-markets in detail.

In **Chapter 4** we show how electronic **purchasing platforms** strive to redefine sourcing-related activities. They can support procurement processes, lower costs and improve quality and speed. Some alliances of large players are aggressively trying to concentrate whole industry sectors on a few purchasing platforms: These would then dominate the entire value chain. The examples in this chapter first describe the early **auction players**, who provide one of the key functions (“buy or sell”) and then zoom in on the **Automobile industry** (in particular **Covisint**), the **Consumer Goods industry** and the **Computer industry**. Again we identify specific challenges that these plays face.

In **Chapter 5** we show how electronic **intermediary marketplaces** are spreading rapidly to cover world markets. Acting as neutral agents, they can assume extensive industry-relevant functions and come from a wide range of sources. Their struggle for scale and liquidity is leading to rapid consolidation of the industry. Process and service integration and true support of complex business relationships are just emerging. Examples include global electronic data exchange leaders before the Internet, such as the information services unit of **General Electric**, as well as Internet pioneers, like **Vertical-Net**. In addition, the cases focus on a large variety of sectors: **Energy** (in particular **Enron**), **Construction, Paper, Chemicals, Steel, Telecoms** and **Financial Services**, as well as **Surplus Inventory markets**.

In **Chapter 6** we discuss **sell-side portals**. The attempt to satisfy customer needs, but avoid fostering competition, led to the formation of several well-known **private marketplaces**, initiated by a single company. However, small local service companies have received support from B2B2C concepts of more sophisticated sell-side portals. A new form of “**digital franchising**” is emerging. The examples of this chapter include veterans such as **Dell** and **Cisco** and less known players such as **e-news** and **AMS**.

Part II serves both as an explanation of a wide set of concepts and as a reference for the most relevant vertical sectors.

Lightning Strikes – Electronic Business Hits the B2B Markets

ONLINE INITIATIVES motivated to serve buyers, sellers or simply collaborators have emerged in almost every industry sector to date. Business models vary as do degrees of success. We classify the multitude of markets into three basic types with varying impact in different industries: buy-side purchasing platforms, sell-side portals and neutral e-marketplaces. Before we turn to the individual types of e-markets in detail, we will look at the driving business principles of e-markets in this chapter.

NAVIGATOR THROUGH CHAPTER 3

E-markets promise a more efficient economy

E-markets can deliver a more efficient economy as they i) increase market transparency and information availability, ii) enable the automation of critical processes, including but extending beyond purchase related processes, iii) allow the speeding up of information flows as well as the separation of information from products. They create the right conditions for a shift to a more efficient form of organization, not large or small, but the networked business. At the same time new pricing paradigms present a challenge to businesses.

E-markets provide for more than transactions

The essence of e-markets goes beyond transactions. E-markets establish coherence, completeness and immediacy by electronically providing a wide range of support functions such as information collection, negotiation of contracts, transaction management and customer service.

E-markets can be classified into three core types

We discuss a variety of complementary methods classifying e-markets. In our view industry structure is the most fundamental guiding principle and we adopt a split into i) Buy-Side, ii) Intermediary, and iii) Sell-Side markets.

Alternative classifications are valid

There are a number of further useful ways in which to consider grouping e-markets. These include (i) horizontal vs. vertical; (ii) dimensions of interaction; and (iii) core value proposition. They help to consider a critical question – how do markets deliver value to their participants?

E-markets can add value to all industries

All activity chains will be penetrated by e-markets. Current development status varies strongly between industry sectors. The effects of the “B2B roller coaster” of 2000 will exacerbate development challenges in some areas.

There is still significant potential for e-markets

As more B2B commerce becomes digital and conducted electronically, the potential for electronic marketplaces increases. Positioning to be a winner needs to start now. The challenge for all e-markets is to attract participants through compelling value propositions that create new value, rather than simply relying on cost reduction in existing processes to attract and sustain interest in them.

E-MARKETS PROMISE A MORE EFFICIENT ECONOMY

As we outlined in “The promise of e-markets” in Chapter 1, e-markets can re-establish the marketplace completeness of content, context and commerce in one virtual space for thousands of physically disparate buyers and sellers. The first important implication of this is in relation to the processes of transaction and exchange that are at the heart of most markets.

E-markets enable enormous improvement in business processes that help raise the efficiency of transactions. They:

- Increase market transparency and information availability
- Automate critical processes
- Speed up and separate information flows

1 E-markets increase market transparency and information availability

Transparency refers to whether participants in the market have the same access to relevant information that influences the operation of the market – for example who is buying, who is selling, current market prices, consequential costs (e.g. transport and freight) etc. In terms of economic theory, transparency leads to efficient markets in which supply and demand reach equilibrium via the price mechanism and inefficiencies of surplus or shortage are minimized. Hand in hand with this “efficient market” benefit goes the ability to electronically manage and reduce the costs along an activity chain comprising multiple independent companies. This is enabled by worldwide transparency of product specifications, suppliers, buyers and availability. Market transparency does not simply come from having on-line databases of worldwide product availability. Raw information of this nature only becomes rich by adding relevant static and dynamic content to which it is linked. Information in the right context becomes valuable and relevant to market participants. Various types of search mechanisms and facilities for personalization tailor information to individuals’ needs.

Greater transparency in e-markets also leads to improved pricing, often through the mechanism of auctions (see Insert 3.1). Basic economic theory tells us that transparency of product prices and suppliers terms and conditions should lead to market prices dropping towards the cost of supply, particularly when products are homogenous and suppliers’ conversion costs are limited. These conditions do not, however, exist in most sectors. As we have seen from the establishment of some of the earliest e-markets – the financial exchanges – the greatest impact they had was to establish the practice of **dynamic pricing**. While most price lists and framework agreements in business-to-business are valid for several months – irrespective of changes in the business environment – prices and conditions on e-markets can be changed in real-time. As a result,

over time there is greater leeway for negotiation between suppliers and buyers as they get used to dynamic pricing models. This in turn raises the level of efficiency of markets.

INSERT 3.1: GOING, GOING, GONE – E-MARKET AUCTIONS AND PRICING

There are a number of different types of auction that businesses can exploit. They often have very different pricing dynamics at work, for both buyer and seller. Here we present a summary, rather than exhaustive guide.

Major types of auction

There are three well-established types of auction. **English auctions** are those which most of us will think of when we think “auction.” They involve a number of buyers competing to purchase a product or service, or groups thereof, from a single seller. Buyers bid increasing amounts and the **highest price** bidder must buy the item. The duration of such auctions may be defined by the price at which no buyer wants to bid more, or they may have a time specific duration, or a specified minimum price that must be reached. In **Reverse auctions** a number of sellers offer the **lowest price** for which they will provide a product or service to a single buyer. Time limits for reverse auctions are similar to English auctions. They can keep going until a specific time, or until a (buyer specified) target price is reached, or until all sellers have reached their lowest price and will go no lower. **Dutch auctions** are designed for speed and maximizing the quantity of product sold. A seller offers two or more identical (or very similar) products to one or more buyers. The seller sets a minimum price at which they are prepared to sell. Bidders specify a bid price and quantity that they want to buy at that price. All winning bidders pay the same price per item, which is the **lowest successful bid**. In Dutch auctions, the winning bid may very well be less than the highest bid. Dutch auctions are so-called as they originated in Holland, designed specifically for the sale of tulips, perishable goods for which the priority is to achieve market clearing rather than necessarily the highest possible price for an individual bloom. Other, less significant, auction schemes exist. An example are **Japanese auctions** with

one seller and many buyers, in which the auctioneer raises the price (from a low starting point) and buyers must bid at each price to stay in the auction.

Pricing systems and challenges

Alongside these various types of auction run three significant pricing systems. The key variables across them are how product attributes are described to match a standard (to drive transparency) and who sets the end price of the product.

In **dynamic pricing** systems the product attributes or services offered are fixed by the seller before bidding begins. The buyers then compete to offer the most attractive price, which a seller can choose or is bound to accept. This is the basis for “English” auctions. With **static pricing** systems the product or service attributes are fixed before the selling process begins. The seller asks the same price from all buyers, though a discount may be given for large purchases. Finally with **negotiated pricing** the product attributes and the final prices for them are open to change. It is likely that there is competitive bidding amongst sellers. The final product is often unique (e.g. a bridge; a building; a service contract; or a set of components with a particular combination of price, quality, shipping dates, financing, and other elements).

As we have discussed in earlier chapters, one challenge that suppliers face is a move to dynamic pricing; particularly where products are commoditized and relationships between buyer and seller are not very close.

Another challenge that auction driven e-markets present to producers, as a consequence of greater price transparency, is the loss of opportunity to differentially price similar products between similar customers. These so-called “value-based” rather than “cost-based” pricing opportunities will reduce. To offset this, producers will seek to bundle differentiated levels of service into the overall purchase in order to differentiate between prices offered to customers.

2 E-markets automate critical processes – transforming organizations

In Chapter 1 we discussed how e-markets, by automating critical processes,

reduce specific costs related to transactions in terms of **purchase price negotiation, information gathering costs, purchase process costs and communication costs**. We won't pre-empt a fuller discussion of these in later chapters, particularly the benefits of purchase process automation in Chapter 4. Instead we note one of the less obvious effects that process automation will have by reducing transaction costs between businesses in the economy at large: the transformation of business organizational structures. (See Insert 3.2.)

3 E-markets speed up and separate information flows

The speed with which information flows within and between companies has potentially significant impact on their business, reaching all the way from operational to fiscal considerations. We use two of our company examples to illustrate these points. At Dell (see Chapter 6), there is no risk of obsolete finished product inventory and hugely reduced risk of component obsolescence given the speed with which it handles information. Cisco (see Chapters 2 and 6), with an ability to rapidly and accurately collate sales information, was until recently consistent in outperforming analysts' estimates of financial performance, with consequent positive effects on its stock price. Rapid information flow, and its separation from product flows also lies at the heart of the initiatives being pursued by many intermediary marketplaces that we discuss in Chapter 5. (See also Insert 2.1 in Chapter 2: "When information decouples").

Many e-markets are seeking to co-ordinate industry activities in ways that simply could not be achieved fast enough or at acceptable levels of risk in an "analogue" world. New product and service introductions are a case in point here. Speed to market is recognized as a critical driver of success in many fields – from electronics products to pharmaceuticals to construction projects – and intermediary e-markets can play a significant role in these cases, particularly where collaboration is needed to achieve success. In this area, the nature of the Internet and its open interfaces mean independence from hardware and operating systems, facilitating communication beyond single system/single company limits. (See Chapter 4 – "EDI and XML explained").

INSERT 3.2: NOT LARGE, NOT SMALL, BUT NETWORKED – THE ORGANIZATIONAL IMPACT

In 1937, economist Ronald Coase surprised academics and business people alike by asking a very simple question: Why do companies exist? Like most good economists he had an answer ready that was the fruit of much research and thinking. His paper “The Nature of The Firm” examined why large companies, that are integrated across the steps of an activity chain, should be able to operate more efficiently than individual companies exchanging goods and services all along the chain.

As Coase observed “economic exchange will tend to be organized in ways that minimize the costs of those exchanges.” Or in other words the structure of an industry is fundamentally determined by the inherent transaction costs of the industry. Coase posited that “transaction costs” (e.g. those related to search, information, negotiation, decision-making and management) have to be “paid for” by all market participants. Within a single company these can often be absorbed without extensive negotiation. So in instances where transaction costs are very high it makes economic sense, in terms of efficiency, to bring them all in-house. This is the driving force behind vertical integration in some particularly capital intense industries such as aluminium refining, paper and pulp production, and steel.

The Internet enables suppliers and buyers to communicate efficiently and in real-time, rapidly reducing transaction costs. This has significant consequences for organization structures. Small but effectively networked companies now have the tools to compete effectively with much larger, integrated enterprises. The Internet reduces some fundamental costs inherent in a free-market economy, but at the same time provides a catalyst for structural change in how businesses organize. So does this favour small companies over large companies for the future? The answer is this is the wrong question to ask!

The age of the “knowledge worker” as well as the possibilities of the electronic marketplace now introduce the **network** as the superior organizational structure. It allows knowledge workers to collaborate with low transaction costs

while fostering the creativity and initiative that are usually stifled in hierarchical organizations.

As a consequence, the question as to whether the electronic marketplace favors small or large companies can remain unanswered – it may no longer be of much relevance. The electronic marketplace favors networked organizations over hierarchical or isolated organizations. The network can be achieved either by large companies loosening their structure or by small companies grouping effectively together. Where exactly the company boundary runs is becoming both ill-defined and irrelevant. How best to organize a network becomes the relevant issue.

The separation of information from products also creates significant opportunities in and of itself. Take the well-known example of Fedex, where customers ability to track packages online has massively reduced levels of expensive human- intermediated inquiries, reduced complaints and raised customer satisfaction. More specifically commercial in terms of illustration is the very significant information industry that has grown up to surround the stocks, bonds and commodities exchanges in terms of reporting information about specific trades, trading patterns and trading histories.

E-MARKETS PROVIDE MORE THAN TRANSACTIONS

E-markets can support not only the buying process but also the whole business relationship between supplier and buyer. This means that all phases of the purchasing process which leads to and from a transaction – from working out and selecting the required products and suppliers; agreeing volumes, prices and terms of delivery; managing the flow of goods; managing cash flows; to providing additional services – are supported electronically. Business purchasing transactions normally run in four phases that can all be supported digitally (Fig. 3.1):

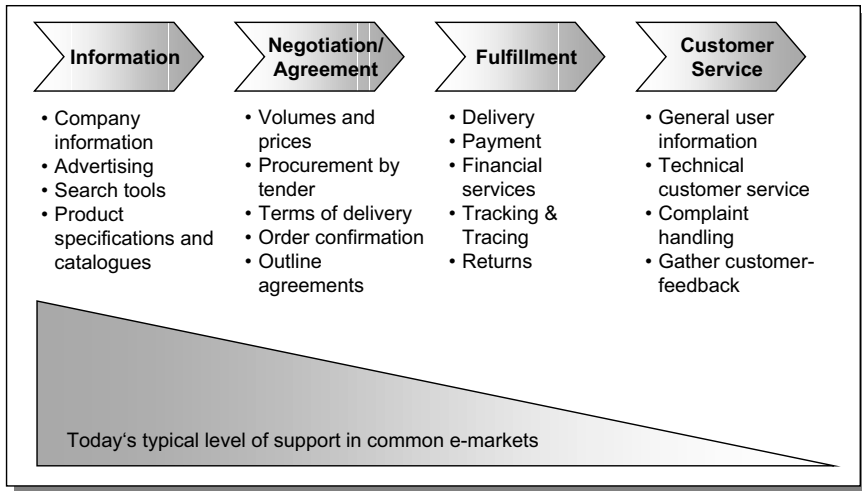


Fig. 3.1 E-markets will support the whole transaction process.

- 1 Information
- 2 Agreement
- 3 Fulfillment
- 4 Customer service

In the **information phase**, the buyer gathers information about suitable products and suppliers. Active advertising by suppliers, a specific search by buyers and provision of product catalogues creates some transparency of services in the marketplace. In the case of tenders, the buyer informs potential suppliers of a specific requirement and initiates the business transaction. E-markets support the information gathering phase through the provision of specific search services, electronic product catalogues and tender platforms. Electronic product catalogues are currently the most widely used tool in e-markets. They are superior to their paper counterparts in a number of respects, for example, through:

- up-to-date information;
- multi-dimensional search facilities;
- multimedia animation;
- electronic links to related topics;

- opportunities for interaction (with and between customers);
- link to internal DP systems (e. g. availability checks);
- direct comparison with competitors offerings; and
- facilities for “up selling” and “cross selling.”

Sellers can also benefit during the information gathering phase, by improving their prospecting processes and observing buyer behaviors at an aggregate level in the e-market.

In the **agreement phase**, suppliers and consumers specify the range of services of the product, agree on volumes, prices and terms of delivery, and enter into a legally binding purchase agreement. The majority of business-to-business transactions take place between business partners who maintain permanent relationships. E-markets support the agreement phase through:

- established product, customer and supplier databases;
- accelerated exchange of bids and counter-bids (e.g. via e-mail);
- application of new pricing models (e.g. via auctions);
- simplified conclusion of a contract (e.g. via electronically transmitted order confirmations and terms and conditions of business); and
- simplified listings of suppliers and agreement of framework contracts.

Delivery of the actual goods or services is handled in the **fulfillment phase**, i.e. the goods are supplied to, or the service rendered for, the customer and the payment is processed in return. E-markets support the flow of goods by electronically co-ordinating supplies, constant monitoring of supply (track & trace), and simplified handling of returns. In the same way, rendering of a service can be monitored at all times, e.g. through access to the current project status of a work group or the setting up of a Webcam on a construction site. Finally, e-markets also support cash flows, whether direct payments by the purchaser to the seller or necessary financial services (e.g. for letters of credit or transport insurance).

Customer service looks after the needs of the customer after the sale. These so-called “after-sales services” today comprise information for users, technical customer support and complaints processing. E-markets can support

all three functions. Comprehensive information for users (e.g. manuals) can be provided efficiently via the Internet. Technical customer service is supported through central product and customer databases as well as improved remote service capabilities. Complaints handling and gathering of customer feedback is also simplified electronically. Furthermore, the Internet opens up a new dimension in customer relations management through the development of one-to-one relations and customized services.

Most of today's e-markets most strongly support the information gathering phase while in most cases the agreement phase is secondary. The potential in terms of management and customer service is far from exhausted. In future, all e-markets will seek to provide **electronic support to all business processes and relationships** and not just supply information or support transactions. This means including not just suppliers and buyers transacting, but all relevant business parties interested in the transaction, such as logistics and financial service providers. Market participants will need to link electronic market information to their internal business processes and systems so common, industry standards will be of great importance.

E-MARKETS CAN BE CLASSIFIED INTO THREE CORE TYPES

Despite the large number of market based relationships within an industry and the substantial differences that exist between the activity chains of different sectors, it is possible to distinguish three essentially different starting points for the e-markets that have emerged to date (Fig. 3.2):

- A small number of buyers seek to meet a large number of sellers (buy-side purchasing platform).
- A large number of buyers meet a large number of sellers (neutral marketplace).
- A small number of sellers seek to meet a large number of buyers (sell-side portal).

At the extremes of the buy and sell-side models there are models in which a single buyer or seller seeks to find a large number of counter-parties. These

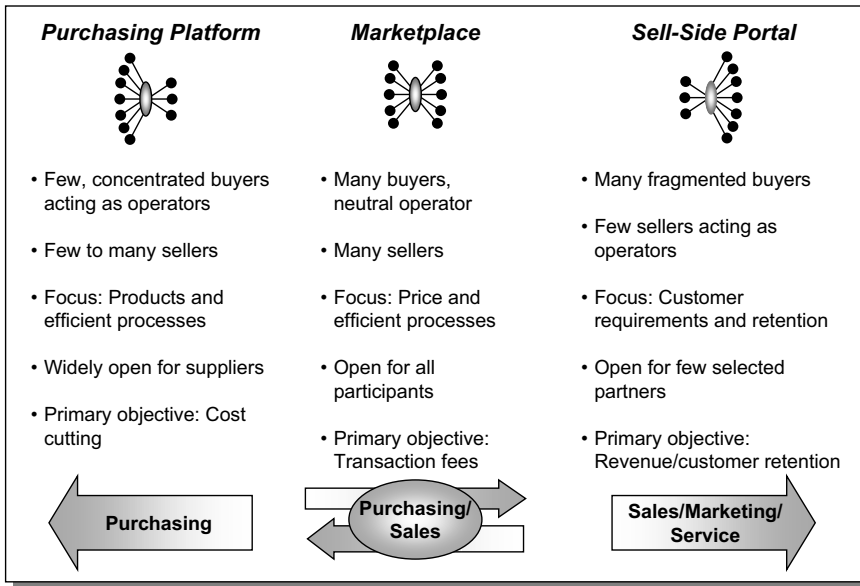


Fig. 3.2 Three types of e-markets.

are so-called “private marketplaces.” We return to this phenomenon in more detail in Chapter 6.

Although the distinction between the three types of e-markets is becoming more and more blurred, the division itself is still useful.

Buy-side purchasing platforms

Buy-side purchasing platforms support procurement with the principal objective of reducing costs (serving the “buy-side”). E-procurement reduces product, process and inventory costs. The potential for cost reduction depends on the structure of the supplier market. If suppliers are already highly concentrated, the potential for purchasing platforms lies overwhelmingly in lowering **process costs**, lower product costs are difficult to achieve. If supplier concentration is low then there is good potential for both **product cost** and process cost reductions. Purchasing platforms are explained in detail in Chapter 4.

Intermediary marketplaces

Electronic marketplaces bring together a large number of customers and a large number of suppliers, and can considerably reduce transaction costs for market participants. They emphasize either the transactions themselves or provide an improved marketplace for information. In both cases, the primary objective for the market operator is to win the highest possible number of suppliers and buyers. Success requires going beyond simply facilitating transactions to embracing and helping to redefine all the critical processes and relationships in an industry, as discussed in Chapter 2. E-marketplaces can either concentrate on one industry (vertical) or can cover several functions (horizontal). We will look at these intermediary marketplaces more closely in Chapter 5.

Sell-side portals

Sell-side portals have developed from two different but related motivations. Some producers have seen an opportunity to use power of the internet to radically alter their activity chain and create competitive advantage for themselves. (e.g. Dell – see Searchlight 18). Others producers have reacted to a perceived “buy side” bias amongst e-procurement platforms and intermediary marketplaces and created their own selling sites. In both cases the desire is to extend the suppliers influence further forward in the value chain. Given that this is likely a common desire for most producers, we expect to see many more manifestations of these portals. We present the specialist portal concept and a number of its variants in detail in Chapter 6.

We believe that from our chosen buy-side/neutral/sell-side classification all three types of e-markets will emerge in most sectors. We observe that there are already purchasing platforms serving the large retailers and consumer goods manufacturers in the food sector, there are marketplaces for raw and processed foodstuffs and specialist portals for food service (Fig. 3.3). In the automobile industry, there are purchasing platforms for car manufacturers and systems suppliers, marketplaces for spare parts and sell-side portals for garages and workshops.

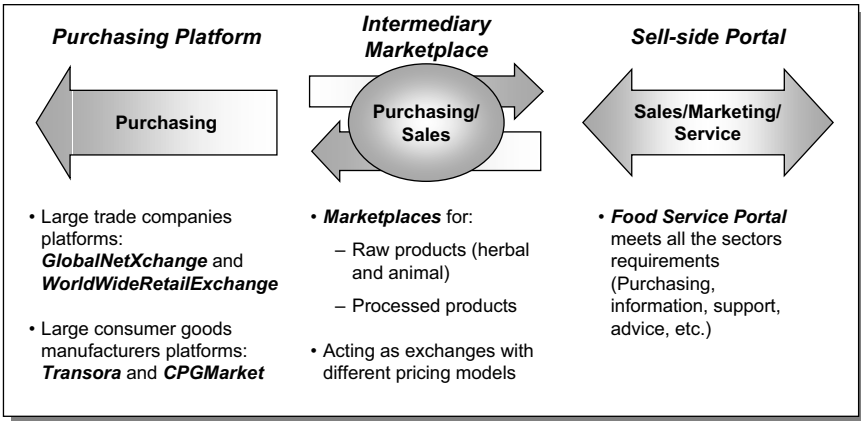


Fig. 3.3 All three types of e-markets to emerge across sectors.

The question of which e-market types will be winners is complicated by the fact that all three types of e-markets in our classification have their roots in earlier forms of B2B e-commerce (Fig. 3.4). For example, prior to the emergence of electronic purchasing platforms, there were multiple solutions from individual companies created via extranets. Similarly, Internet store-fronts ex-

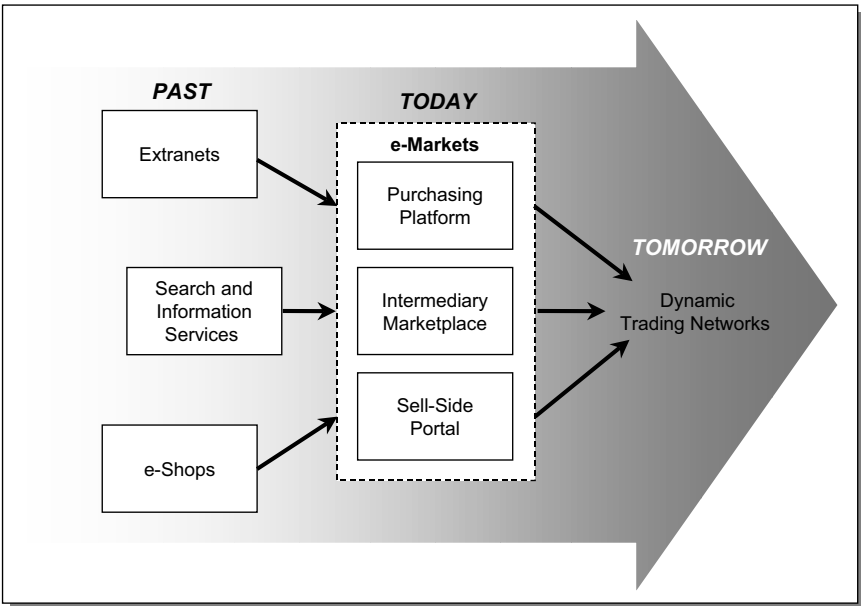


Fig. 3.4 The evolution of business-to-business e-commerce.

isted as the selling solution for individual companies to their business customers. E-markets are already in their second or third stages of evolution. What is important to note is that these evolutions are still along the lines of current processes and information flows. We will see in later chapters that there is still further development to come: successful e-markets must evolve to operate successfully as components of more extensive and dynamic trading partner networks in which completely new processes are created. We look to the future in Parts III and IV.

ALTERNATIVE CLASSIFICATIONS ARE VALID

There are a number of ways of classifying e-markets (see Fig. 3.5). The most common classifications are as follows.

1 Horizontal vs. vertical markets

E-markets can be segmented into horizontal and vertical markets. The former cater to a wide range of industries, whereas the latter are geared specifically towards one industry.

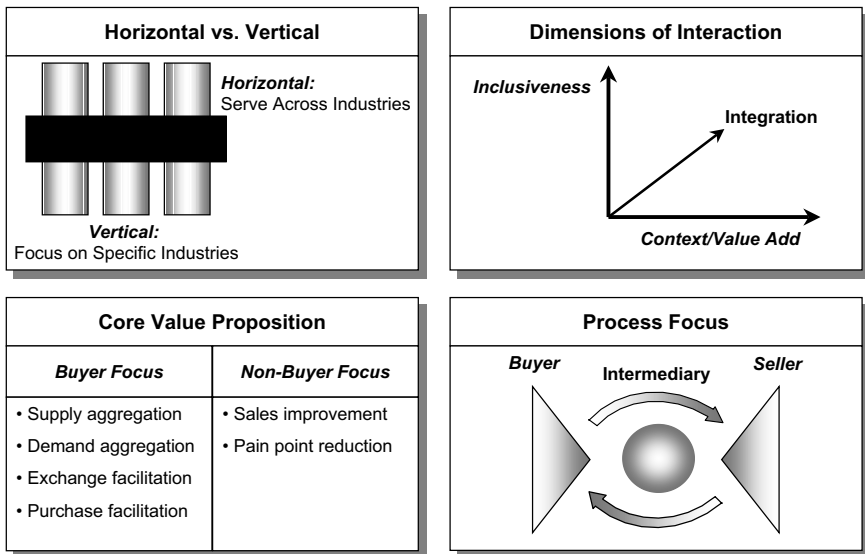


Fig. 3.5 Alternative classification of e-markets.

Horizontal e-markets come in essentially two flavors.

Indirect goods e-markets, also called MRO goods (maintenance, repair and operational). Examples include services from FindMRO (Grainger), MRO.com and Bizbuyer.

Auction sites. The primary purpose of B2B on-line auctions is twofold: the disposal of surplus inventory and capital equipment and the facilitation of a spot-market for commodity type goods. A typical example of the first one is TradeOut.com, a company that specializes in selling surplus inventory among Fortune 1000 firms. Arguably the largest auction site is Freemarkets, described in Chapter 4, operating in over 50 countries with more than 4000 suppliers.

Vertical e-markets. These have been at the center of recent interest in e-markets, as realising the promise of e-markets requires some degree of specialization along industry lines. They can be sub-segmented in three categories:

Third-party e-markets. e-Steel, PaperExchange, ChemConnect and many more belong in this category. We discuss these in great detail in later chapters.

Industry consortia. In addition to the often discussed automotive industry e-market Covisint, these include initiatives like Transora, GlobalNetXchange (gnx.com), RetailersMarketXchange (rmx.com), Aeroxchange and more.

Private Marketplaces. An extreme form of vertical market that has only one player at one end. He creates a marketplace for either his suppliers or his customers. Intel, Cisco and Dell are traditional examples.

2 Dimensions of interaction: inclusiveness, integration and value added services

Another way to understand e-market is to position them considering three dimensions of interaction: inclusiveness (who can interact), degree of integration (how deep do interactions go) and value added services (how rich are interactions):

Inclusiveness: How open is an e-market to participants. Maximum inclusiveness invites anyone if they are willing to accept some compliance with basic rules. The emerging eBay Business eXchange here is a good example. Minimal inclusiveness would involve only a single player on one side and its suppliers on the other, rather like Cisco's purchasing approach.

Integration: To what extent does an e-market integrate the core processes of an industry. Horizontal auction sites or e-exchanges are often minimally integrative, whereas vertical consortia like Covisint intend to integrate the whole supply chain processes of the big automakers.

Context/value added services. This is a measure of the extent to which an e-market adds additional context information and offers supporting services. The most common types of services are transaction services, from auction-support to clearing houses, business publication services and logistics services, but new types of services are developing every day.

The promise of all the benefits of a complete e-market would require a high rank on each dimension. In practice there is a trade-off between the three and any individual market is forced to focus on one or two of the three as its primary target.

3 Core value proposition

A further way in which to consider a classification of e-markets is the core attribute or value proposition that the organizer seeks to offer participants. The value proposition is at the heart of the business model of an e-market initiative. The robustness and true appeal to users will determine the long-term success of each type of market. We return to think about the future success of e-markets in Chapter 8 in more detail, but as an early perspective, we believe that markets must deliver lasting value and remain differentiated from their competitors to have real prospects for success.

For now, we offer a way to consider the propositions that are on offer and, if you are an e-market operator, to question what is at the heart of your proposition.

At a top level we distinguish between propositions that are buyer focussed versus those that are not. Beneath this there are four typical buyer oriented propositions and two "others."

E-markets are currently heavily biased towards creating upside for buyers, as the benefits of liquidity and transparency flow most easily to them. There are four typical buyer focussed propositions:

Supply aggregation helps buyers to identify suppliers more effectively, particularly where the industry is characterized by a fragmented supplier base. Markets of this nature may execute transactions, but their emphasis is on providing context to enable buyers to have a wider choice than previously possible to find appropriate suppliers. Examples here are the markets for Surplus and Reminders (Searchlight 12 in Chapter 5) or markets to facilitate media purchasing such as mediapassage.com and imediapoint.com.

Demand aggregation brings buyers together to leverage their purchasing power to achieve lower prices. Initiatives in the consumer goods industry (Searchlight 6 in Chapter 4) have a number of aims, but this is certainly amongst them – an already relatively concentrated set of buyers is seeking to achieve even more leverage over their suppliers. Elsewhere, demand aggregation provides its greatest benefits where a set of fragmented purchasers face up to a set of concentrated sellers.

Exchange facilitation aims to create dynamic markets for buyers and sellers where they might not have previously existed. An example is the market for Telecom bandwidth. (Searchlight 16 in Chapter 5).

Purchase facilitation focuses on increasing the efficiency and reducing the cost inherent in the process of purchasing. They worry less about achieving lower unit costs of purchased goods and more on reducing all the hidden costs of purchasing particularly related to indirect goods. We discuss this in more detail in Chapter 4.

There are two propositions that are not heavily buyer-skewed.

Sales improvement aims to create a wider window on the world than a supplier can hope to achieve in the offline world only. These are often private marketplace offerings, designed to push products effectively through the value chain. Their focus is on helping to create additional sales opportunities for a supplier, by helping his customers sell his products. This proposition very firmly underpins the seller portals that we discuss in Chapter 6.

Pain point reduction is distinguished not by an overt seller orientation, but by an emphasis on advantaging participants by reducing typical pain

points in the industry. Propositions of this type often include significant tools for collaboration and project management between value chain participants in industry specific processes that are time consuming and/or costly. An example here is e-market initiatives in the Construction Industry. (Searchlight 10 in Chapter 5).

4 Process classification: buy-side, intermediary or sell-side e-markets

This is our primary classification as it looks at the core driver of the market: is it buyer-driven, an intermediary trying to serve both sides in an equal way, or seller-driven? We explain this in detail in the following chapters.

All the classifications above are useful and complementary ways of looking at e-markets. We use the last one as our primary structure for the discussion in this book, since we feel it allows for the most efficient learning from cross-industry examples. However we also use the others, discussing multiple vertical markets in detail and exploring to what extent markets try to focus on any of the three dimensions of interaction.

So using these alternative classifications, which type of market will come to pre-dominate in a particular sector? There is no single answer. In some instances the “cost side of the equation” – the structure of the industry, the nature of transaction costs and pain points that the electronic market is seeking to reduce – is a critical determinant of which configuration of e-market is most appropriate. In others the “value side of the equation” (effectively the other side of the cost coin) – how value is created and distributed for participants in the market – is critical. For example, if value accrues only to buyers at the expense of sellers it may be that sellers begin to reduce their participation in a market, thereby reducing the strength of the proposition. The nature of value creation and its distribution is a critical, and sometimes overlooked, determinant of which market types will prevail where.

E-MARKETS CAN ADD VALUE TO ALL INDUSTRIES

There will be no industry that is left untouched by the effects of an e-market

initiative. Precisely when all players in a sector recognize and respond to the impact is critical, both in terms of value chain dynamics and the competitive positions and business strategies of players in the industry. The state of development of e-markets varies greatly between individual industries at present. There is not yet a sector that conducts the majority of its business relationships via e-markets, but some are further developed than others. We believe that the following facts are inescapable:

- 1 E-markets will become established, with some winners and losers along the way.
- 2 Strategic competitive positions will be determined *before* rapid growth takes hold.
- 3 Extracting the greatest value from e-markets comes from *proactively* re-shaping value chains to create new value, rather than modifying them to reduce cost in existing chains.

Planning and plotting a course through the digital storm is a surer way to success than randomly riding its waves. To help participants think about where their sector is in terms of e-market evolution we have split the state of **development of industries** into three phases (Fig. 3.6).

Start phase

Early e-market initiatives have started, mostly through new entrants; the market has achieved a very small share of industry transaction volumes; the business models is not yet a proven success; competitive positions are not yet established; the market draws little attention from the top management of traditional market leaders. Typical “market” features include:

- Internet home pages for customers with largely static product and company information;
- initial connection of suppliers within an extranet; and
- internal corporate information interchange via an intranet.

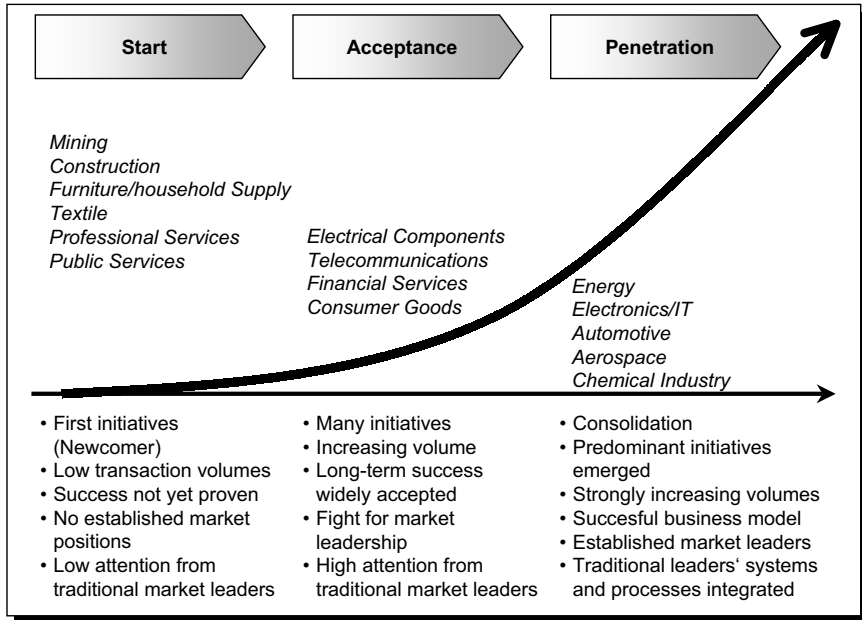


Fig. 3.6 Development stages in various business-to-business sectors.

Acceptance phase

There are a large number of different e-market initiatives in process, including those from traditional market leaders; the market is achieving significant transactions in some industry segments; long-term potential of e-business models is recognized; struggle for strategic competitive positions is underway; the top management of traditional market leaders are paying significant attention. Typical features include:

- dynamic product and company information;
- electronic order monitoring (tracking and tracing);
- dynamic pricing models; and
- connection of associated companies and service providers to the market.

Penetration phase

E-market initiatives have consolidated; share of industry transactions is grow-

ing strongly; successful business models have been established; competitive positions are largely determined; e-markets are increasingly integrated into internal systems and processes of the traditional market leaders. Typical features are:

- integration of internal systems with those of the e-market;
- transparency of the whole supply chain with co-ordination of inventory planning along the chain;
- activity chain-wide information interchange in real-time (e.g. directing point-of-sale information to the manufacturer);
- a new division of some activities across the value chain;
- information linkages to related industries; and
- facilitation of processes and relationships beyond simple buy/sell transactions.

Some industries, such as mining, mechanical engineering and construction are still at the start phase of e-market development. In most industries, many market participants have already accepted their importance, but there is still a lack of tangible proof of successful business models, indeed there have been some notable business failures. Elsewhere, industries are already at the start of the penetration phase. These include:

- Energy
- Electronics
- Automobiles
- Chemicals
- Aerospace.

The presence and effects of e-markets are already clearly discernible for the companies in these industries. The effects of the “B2B roller-coaster” as discussed in Chapter 1 are likely to effect industries’ evolution in a number of ways. Those industries that are in the **start phase** will learn carefully from observation of more advanced sectors. Some highly focused players with clear value propositions and business models will emerge – and likely set good roots

for competitive advantage. Overall sector progress will be characterized by an attempt to leapfrog to the next stage of evolution – trading networks.

In industries that are at the **acceptance phase** there will be a clear shake-out. Investors will no longer be encouraged by overall sector momentum to provide growth funding. A select few – those demonstrating focus, coupled with clear commercial progress – will continue. Others will be consolidated or liquidated. We have already seen the high-profile, US\$65 million demise of a major European initiative in the food sector – Efdex – which typifies this dynamic.

Where industries are in the **penetration phase**, the natural response to the roller-coaster becomes caution and a sharper focus on risk and reward. There will be tighter scrutiny of what can and cannot be achieved from systems investments (see Chapter 8) but the net effect will be to drive to specific practical realities rather than to invest in further extensions of a “scale driven” vision. Focus will replace megalomania. We return to these themes in Part III.

ULTIMATELY THERE IS SIGNIFICANT POTENTIAL FOR E-MARKETS

There will be no industry whose activity chain is not enhanced electronically in one way or another. In the next three chapters we discuss in detail how some of these are rapidly evolving. We do not lose sight, however, of the fact that “enhancement” is not where it ends. As we have discussed earlier – in terms of the impact of transaction cost reduction and organization, and the effects of information de-coupling from product – there are powerful forces at work that can significantly reshape the landscape of traditional industry value chains. We return to this theme later in Part III and IV. Some sectors are regarded as being particularly susceptible to the winds of change promised by e-markets (see Fig. 3.7). These are all industries that have one or more of the following characteristics:

- input products that are commodities;
- high levels of transaction costs;
- extended or multistage activity chains from producer to end user;

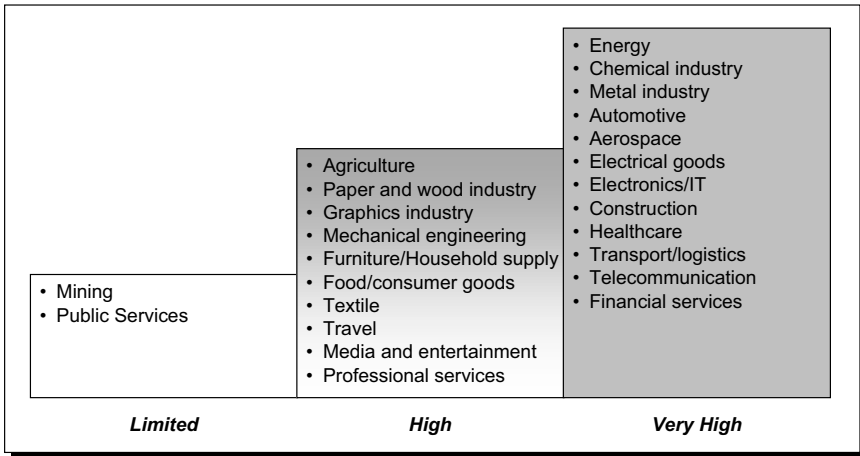
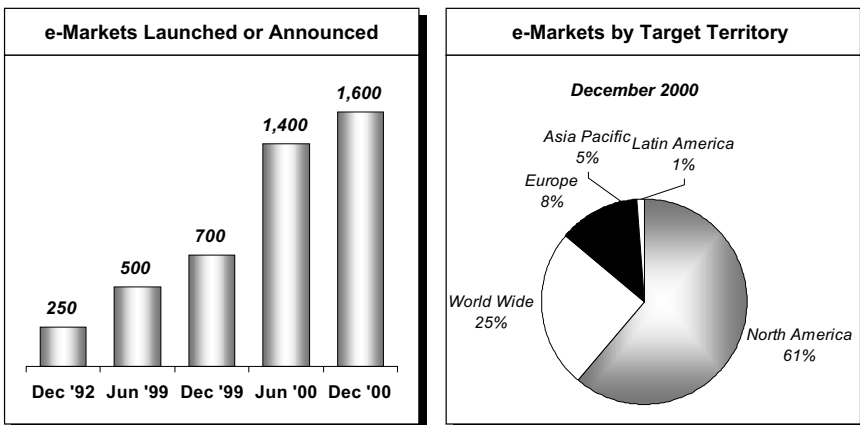


Fig. 3.7 E-markets potential across entire value chain (per sector).

- complex business processes adjacent to or consequent on transactions; and
- users that are early adopters of technology.

The Internet brings these sectors particularly strong prospects for a significant increase in market efficiency, reorganization of activity chains and/or improved customer relationships. Well over 1000 e-market initiatives are already operating today (see Fig. 3.8), although the rate of growth in e-markets has slowed significantly and there is consolidation to come.



Source: Deloitte & Touche; Zona research; OC&C estimates

Fig. 3.8 Rapid recent growth in the number of e-markets.

It is a certainty that business-to-business relationships and business-to-business commerce will continue to shift to being conducted electronically. E-markets have a significant role to play within this. The questions for businesses are around “how?” and “where?” to participate. Critically relevant to these two questions, from the perspectives of those operating e-markets, considering participating in them, or launching them, is a simple theme – create new value. Success will be underpinned by an ability to demonstrate that new value is being created for users by the proposition that is being offered to them. Investors are already wary of concepts that rely on reaching high volume, low cost positions in existing processes based on high share of industry transactions for their success. Providing or being offered a “whole product solution” and an effective “total customer experience” are increasingly important themes for e-market success. In Part IV we return to these themes. We discuss how markets can create value for their users (and thus ensure that they work) and how they can create value for their operators (and thus ensure they are a good business).

“When?” should not be an issue: as the future continues to rapidly unfold, positioning to be a winner needs to start now.

Purchasing Platforms Strive to Dominate Procurement

IN INDUSTRY SECTORS with few dominant buyers, e-markets initially appear in the form of electronic purchasing platforms. These aim to support all transaction and procurement processes and, in the long-term, provide end to end co-ordination and process integration of the whole value chain so as to achieve considerable procurement related savings.

NAVIGATOR THROUGH CHAPTER 4

Purchasing platforms do more than execute transactions

They support the whole transaction cycle and many procurement related tasks. Implementing a successful platform requires effort in system tailoring and process mapping. Even in auctions, where the core execution process is standardized, players offer more value to their users than simply transaction execution (e.g. **Freemarkets, Dovebid**). Packaged software is not enough; tailored solutions are a must.

Purchasing platforms reduce costs and optimize processes

Lower direct product costs are not always the main motivator for or prize to be won from e-procurement. Process and inventory cost reductions, as well as increased speed and quality, are major motives in deploying e-purchasing platforms. Savings generated from the electronic procurement of indirect goods in particular can be significant.

Electronic procurement covers whole industries

Internet-based tools, using XML, enable automated procurement within a value chain. In some industries, adoption by a few large companies can ensure rapid

implementation of a dominant purchasing platform. (e.g. Procurement platforms for **consumer goods**). These in turn are aimed at restructuring purchase processes across entire industries. (e.g. **automobiles – Covisint**). These grand plays face their own particular challenges but their logic is clear.

Electronic procurement leads to integrated value chains

Successful purchasing platforms will go beyond simple company-to-company procurement and bring all key participants within an industry together in a procurement network rather than a linear chain of activity. Critical to the success of these dynamic trading networks will be that they support and benefit all the participants in the value chain.

PURCHASING PLATFORMS DO MORE THAN EXECUTE TRANSACTIONS

What is an **electronic purchasing platform**? We mean multilateral transaction systems addressing the needs of the procurement or “buy” side of a business. Purchasing platforms are distinct because they are multilateral, allowing interaction between several market participants. They support multiple procurement related processes for buyers, including transactions between customer and supplier (Fig. 4.1). By contrast, order modules in ERP (Enterprise

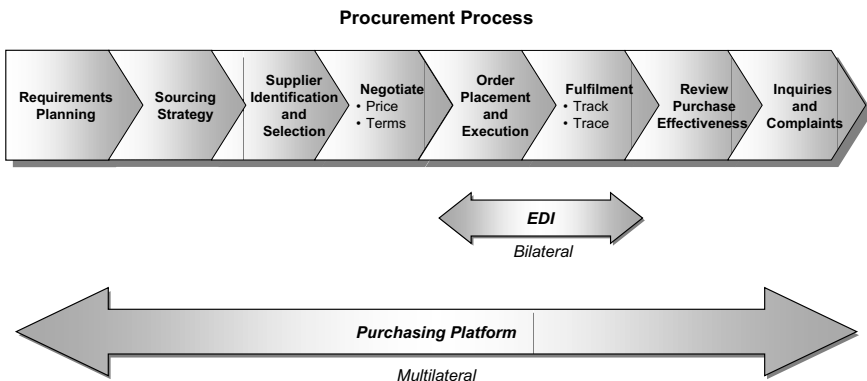


Fig. 4.1 Purchasing platforms support extended procurement-related process.

Resource Planning) systems and bilateral EDI solutions over private networks are less sophisticated. Purchasing platforms support ongoing procurement related tasks such as the development of procurement strategies; supplier assessment; purchasing effectiveness evaluations; compliance with procurement guidelines and even product development. Ultimately they can facilitate activity across multiple stages of the value chain of an industry, and create dynamic trading networks.

Electronic purchasing platforms are predominantly connected to Internet-based **order systems** or **auction platforms**. Significant **components of a purchasing platform** include (Fig. 4.2):

- purchasing guidelines and authorities;
- comprehensive, Internet-based product and supplier catalogue;
- supplier prioritization listings;
- online availability checking;
- information resources for supplier negotiations;
- request for quote engines/wizards;
- catalogue ordering;
- order handling;

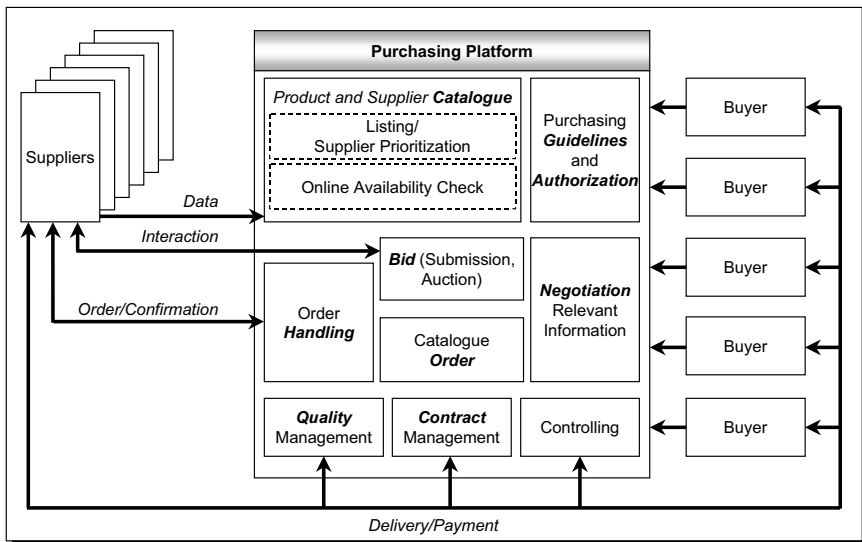


Fig. 4.2 Core elements of an electronic purchasing platform.

- supply monitoring;
- quality management;
- contract management; and
- purchasing control.

These modules typically interface to internal systems such as inventory control, bookkeeping and cost accounting.

The advantages of an electronic purchasing platform are clear: greater price transparency, process automation and as a result, lower costs and higher quality. However, e-procurement is not achieved simply by buying an off the shelf platform – **significant system tailoring** and **process mapping** are required prior to implementation. For example, ensuring that product descriptions use the same standard terms and parameters is critical to maintaining consistent master data files. These files in turn are critical to enabling **ordering systems** to run smoothly. Precision as to the use of specific terms (e.g. for technical product descriptions) is much more important in digital purchasing than before. Ensuring it may need process changes.

Good purchasing platforms facilitate more than just the execution of a transaction. This can be a significant challenge to get right. Even those activities that are well understood can still require extensive mapping and re-planning for transfer to a digital set of processes. For example, the process required to organize a reverse auction for a company so that it receives tenders to supply its requirements is as follows (Fig. 4.3):

- **Identify appropriate products.** The buyer identifies products that have high savings potential and are particularly suitable for electronic purchasing.
- **Define requirements.** Products must be specified in detail. The buyer's target prices then have to be set for these specifications.
- **Select suitable suppliers.** Profiles of suitable suppliers are matched to product requirements. Potential suppliers have to be identified and invited to participate, having agreed to the conditions of participation.
- **Conduct the auction.** Lots have to be determined and the actual auction organized by product.

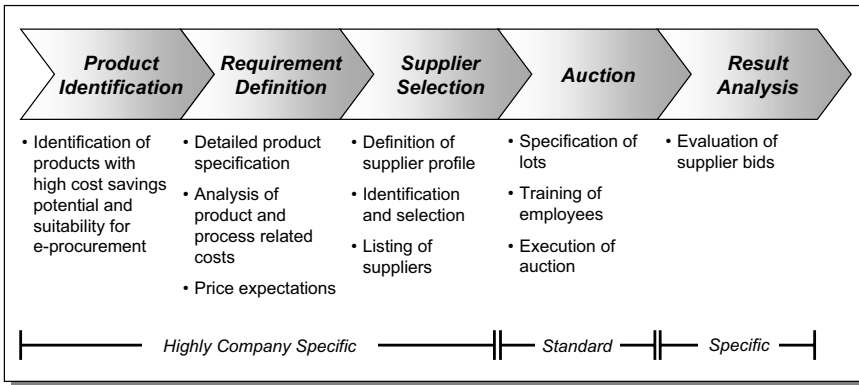


Fig. 4.3 Online auction process from a purchasing department perspective.

- **Analyze the results.** Suppliers' bids are examined after the auction has taken place.

The only standard process here is the execution of the auction component of the tender itself. The other steps have to be planned individually by a company to its own requirements. So introducing a purchasing platform involves more than simply implementation of new software. It requires deep integration with the wider business processes of purchasing.

In the US **FreeMarkets** and **DoveBid** were early movers in the online auction space but approach the support and running of online auctions from two different starting points. Freemarkets has a digital heritage and is more focused on providing a procurement service and solution to purchasing departments of large enterprises. Dovebid is a physical world veteran and enables effective procurement via auctions, using a full mix of physical, Webcast and online auctions.

→ **Searchlight 3:** FreeMarkets – the newcomer in B2B auctions ... (p. 116)

→ **Searchlight 4:** DoveBid – ... and the auction incumbent, moving on-line (p.119)

PURCHASING PLATFORMS LOWER COSTS AND OPTIMIZE PROCESSES

Purchasing in industrial businesses has long since moved from being seen as an auxiliary function to being regarded as a core activity. Complex co-ordina-

tion processes with external suppliers, increasing globalization and the trend towards outsourcing coupled with a focus on core competences has meant that sourcing has grown in importance for most businesses.

As we noted in Chapter 1, e-procurement promises much. We will not extend the framework discussion but drill down to some more specific examples of why and how.

1 Reduced process costs

Lowering procurement process costs, particularly of indirect goods, can be a low risk “win.” The cost savings to be had here can outweigh those in direct goods. Why is this? The answer lies in the fact that direct goods are often bought regularly, in systematic (often large) quantities, by a centralized group. This means a few large regular purchase orders and clear lines of contact for queries etc. Indirect goods bear none of these – and often exactly the opposite – characteristics. As a result indirect goods create inherently inefficient purchase order processing often driven by:

- large numbers of routine administrative tasks requiring human intervention (e.g. special order forms, delivery tracking);
- manual co-ordination processes (e.g. approval by signature for one offs);
- lack of information (e.g. obsolete catalogues or price lists, incomplete requirements descriptions) requiring human intervention; and
- errors creating delays and expensive follow-up processes.

Process cost reductions can be significant, but to achieve them they often require a thorough revision of many “secondary” procurement procedures rather than the simple introduction of procurement support tools. Process costs associated with indirect goods are discussed in Insert 4.1.

2 Reduced product costs

Many companies already operate with a global view to purchasing. Lowest cost sources of supply have often been found. The scope for dramatic purchase

INSERT 4.1: E-PROCUREMENT OF INDIRECT GOODS

A low-risk way to begin e-procurement activities is with indirect goods. As implied by their name, these are goods that are non-production related or MRO (maintenance repair and operations) purchases. They tend to have lower value than production goods. They are acquired as and when they are needed, and orders can be placed by a large number of employees. As a consequence, their process costs can often be several times higher than their direct purchase cost. Aggregating the purchase of indirect goods has traditionally presented difficulties.

Large companies often spend around 30 percent of revenues on indirect goods and services. Example categories include office and IT supplies, clearing services, security services and travel and hospitality. Much of this is likely to be done at a local or divisional level, outside of central guidelines and agreement. Savings made in these areas go direct to the bottom line.

E-procurement systems from **Ariba**, **Commerce One** (Searchlight 23 Chapter 8) and **i2** are particularly focused in this area. These “desktop purchasing systems” allow individual, dispersed users to purchase what they need via a familiar Internet browser interface but within centrally controlled levels of authority and to centrally negotiated contracts.

Purchasing of indirect goods may be under pre-arranged contracts to specific suppliers, or it may be via Internet-based stores focused on this class of goods and services. The e-stores of **Office Depot**, **Staples** and **Grainger** are typical destinations for office supplies. Grainger’s **findmro.com** is specifically designed to source hard-to-find MRO supplies.

Another class of goods that can be characterized by the fact that their purchase process cost can often exceed their material cost are “**C-Parts**.” These are parts that are used directly in production but are of minor value and usually available from multiple sources. In the automotive industry these are items such as screws and glues.

cost reductions, particularly in concentrated industries is often limited. The Internet does, however, provide some incremental opportunities:

- Access to smaller suppliers, particularly those operating overseas, is simplified.
- Large companies' purchasing systems, previously reduced to focus on a few core suppliers, can be re-opened for new suppliers without a loss of efficiency.
- Purchasing cycles can be speeded up and supported by dynamic pricing models (e.g. auctions).
- Disparate local requirements can be aggregated.
- Negotiated cost reductions can be affected immediately.
- Compliance with company purchase policies is significantly increased.

3 Lower inventory costs

Inefficient procurement between companies in the value chain creates a build up of inventory along the chain. This potentially creates storage costs, financial costs of working capital tied-up in inventory, tracking and tracing costs, inventory obsolescence costs, damaged goods costs ... the list goes on. These either reduce the returns to capital invested by companies in the industry or the customer pays. Inventory reduction in the value chain, and its consequences, are one of the critical benefits of e-procurement to both businesses and consumers. Achieving it is done by the efficient transfer of information which is what the internet enables, as we have already discussed.

4 Increased speed and effectiveness

As a consequence of lower inventory holding, business cycles speed up in turn increasing the speed and effectiveness of procurement. Faster procurement cycles can yield a considerable competitive advantage in some industries. Computer manufacturer Dell, for example, bears almost no risk of raw material obsolescence given its very rapid procurement cycles – unlike others in the industry. We return to Dell as a searchlight in Chapter 6.

So how much of this potential is reality now? Industry researchers The Aberdeen Group have examined the **savings achieved** to date in large companies with e-purchasing platforms. Within their sample, they found product

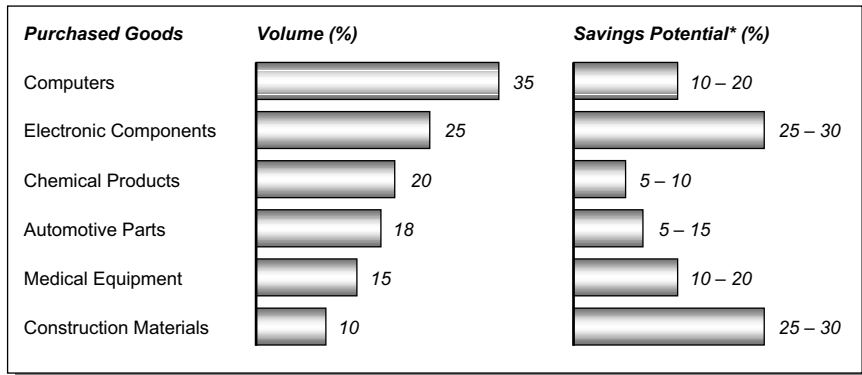
costs were reduced on average by 5–10%. Average handling time was reduced from seven days to two. Process costs per order fell from an average of over US\$100 to US\$30. Inventory costs were reduced by 25–30%. Interestingly they also concluded that the biggest obstacles to the implementation of e-procurement were the inflexibilities of existing information systems and internal resistance of purchasing departments. So further savings are there to be found!

Across industries the **savings available** from e-purchasing will vary widely, depending on the type and scope of goods acquired and the quality of the existing purchasing processes. Commentators expect the largest impact to be seen in the near term in computers and electronic components, followed by the chemical and car industries. We present a recent composite of various projections in Fig. 4.4

Electronic procurement covers whole industries

As we have seen, e-procurement promises a number of cost advantages as the automated exchange of information significantly simplifies transaction processing along an industry value chain. The development of standard technologies will allow the spread of e-procurement to all industries. The first such

PROJECTION (USA 2004) – ILLUSTRATIVE



*Based on total transaction volume on purchasing platforms
Source: Goldman Sachs, Forrester Research, OC&C Strategy Consultants

Fig. 4.4 Projection of volumes and savings achievable by purchasing platforms.

effort in the 1980s was called Electronic Data Interchange (EDI). Its modern-day cousin is the extensible markup language (XML). They essentially allow businesses to speak the same language in electronic transactions, even when they are operating different internal systems and standards. The mysteries of these technologies are revealed for patient readers in Insert 4.2.

Without XML, electronic business conducted via the Internet would be delayed for many years. Now, companies that operate different systems can extract the information they need from a document and import it correctly into their operating systems. Previously incompatible systems can talk to each other.

In early 2000, large purchasing platforms formed in several significant industries, claiming accessibility to all companies worldwide. They included the **car**, **consumer goods industry** and **computer industries**. These three sectors display some **characteristic similarity** in developing e-markets:

- They were already significant users of EDI for purchasing.
- The major companies involved recognized the potential of XML and supported a set of relevant standards for it.
- Several large players collaboratively developed a platform to establish an industry standard, share costs and accelerate sector-wide implementation.
- First movers forced other major players to respond rapidly – either by joining or announcing their own platform.

For the reasons already discussed, the goal of these industry consortia platforms is full automation of transactions, and the processes surrounding the transaction. Although potentially beneficial for all in the chain, including consumers, many have been viewed by competition authorities in the US and Europe with some suspicion. There is a danger that they could represent an improper accumulation of market power. Several investigations have already been undertaken by competition authorities.

As industry leaders, we look at developments in automobiles, consumer goods and computers in individual searchlights.

- **Searchlight 5:** The automobile industry – the Covisint shock (p. 122)
- **Searchlight 6:** The consumer goods industry – a battle of the Titans? (p. 127)
- **Searchlight 7:** The computer industry – Big Blue lives e-business (p. 132)

INSERT 4.2: EDI AND XML EXPLAINED

Electronic Data Interchange (or EDI) has for decades enabled the automated interchange of structured business documents such as orders, order confirmations, dispatch logs and invoices between companies with different information systems. Phrased in simple terms, EDI is essentially a machine-readable e-mail message with strict rules as to what to say.

Based on a defined syntax (e.g. EDIFACT) and semantics, data can be read mechanically, replacing paper documents, such that efficient, rapid and error-free transaction processing is guaranteed. EDI has traditionally been carried out via private networks, either bilaterally or more commonly via networks operated by value-added service providers (EDI VANs). The largest service provider has been GE Information systems, serving over 100,000 customers worldwide. We discuss it in Searchlight 8 in Chapter 5. EDI has a very high level of quality of service and security guarantees.

EDI's disadvantage lies in

- the high costs associated with maintaining network connections;
- the lack of interactivity, rendering many marketplace applications impossible; and
- its lack of flexibility/extensibility.

Technologically, EDI has been superseded by **XML** (Extensible Markup Language), although it will take many years for the legacy base of EDI systems to be fully migrated. XML is a complement to HTML (Hyper Text Markup Language). The critical feature of XML is that it has user-definable syntaxes and vocabularies. This enables users to encode EDI-like descriptions in a standard Internet-

based format. Using XML, it is possible to define **categories and terms** that can be **recognized by computers**.

To appreciate the importance of this simple fact, we should illustrate the differences between HTML, the language upon which the web is built, and XML. HTML is a general-purpose page description language, allowing users to format unstructured text and present it on a web page.

A page might look like: <HTML> text text text <format> text text text, etc.

XML, on the other hand, is a structured language. Data is identified through “tags.” The same page could therefore be seen:

text text <**goods category**> text text <**price**> text text <**size**> <**color**> text text <**link**> text text .

The immediate effect is that business-to-business interactions (communications and transactions) can be migrated 100% to the Internet!

XML has, however, one additional important characteristic: there is only **a syntax, but no semantics**, so the structure is prescribed, but vocabularies and meanings must still be defined and maintained by user groups.

In many sectors, consortia have been formed alongside central XML repositories (e.g. those of CommerceNet and Microsoft) to define and implement sector-specific standard XML dictionaries. One of the best examples of this is RosettaNet, a consortium of major Information Technology, Electronic Components and Semiconductor Manufacturing companies working to create and implement industry-wide, XML-based standards for their industries.

XML is rapidly becoming the basis for even more fundamental advances in software platforms. We discuss these in Insert 8.2: “XML II – towards Web services.”

Within automobiles and consumer goods we have already noted the significant ambition to restructure the way procurement works to reconfigure whole industry supply chains.

These major industry plays have their own major challenges. Not least among them is the fact that it has often proved much more expensive than

planned to build them, both in terms of systems implementation but also in terms getting users to commit to them. Failed European food sector initiative Efdex suffered this fate. Originally conceived in 1994, its technology platform was built before standard components for e-procurement and e-commerce were available, creating significant costs with over US\$25 million spent on systems that were slow to appear. It planned to be trading by 1996, but only achieved its first trade in 1999. User take-up proved difficult to predict accurately. It had attracted only 1500 customers when it closed, against plans to rapidly reach 40,000.

ELECTRONIC PROCUREMENT LEADS TO INTEGRATED VALUE CHAINS

The long-term goal of e-procurement systems is to be able directly to influence activity in the value chain at stages far removed from a specific procurement transaction. The aim is to integrate the earlier and later stages of the value chain via the e-procurement platform. The basic concept of integrating pre-production stages is not new, as shown by the multi-stage supply chains organized by car manufacturers. An example of integration of post-production stages can found in the food sector within the framework of Efficient Consumer Response (ECR): here information on the purchasing behavior of end consumers at retail level is provided back to manufacturers to help them plan their production.

As more volume within an industry activity chain shifts to being purchased across an e-procurement platform the industry moves towards a critical tipping point. Once beyond it, the efficiency gains for those involved are suddenly significant, as purchasing activity along the chain becomes tightly linked and a vision of integrated supply chain management becomes a reality. Within this vision, information does not flow in a linear fashion along an activity chain, connected to specific transactions. Instead it moves dynamically among a network of relevant trading partners who can usefully use information from any stage of the activity chain to improve the efficiency of their operations (see Fig. 4.5).

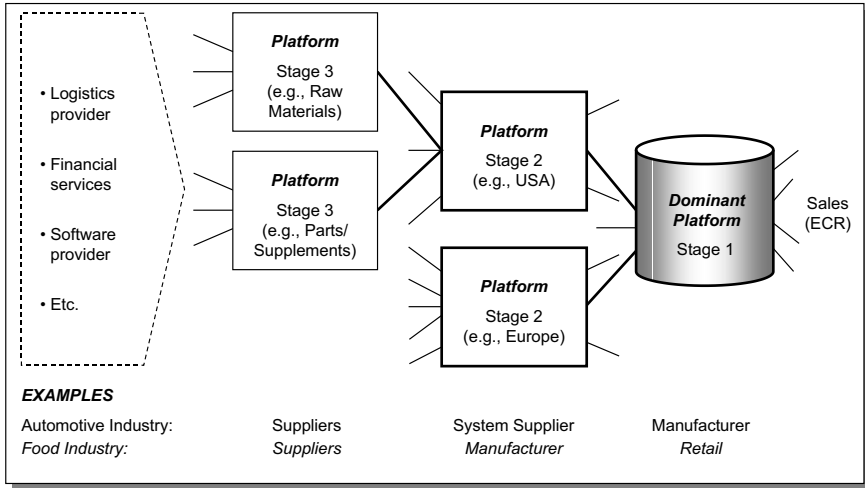


Fig. 4.5 From electronic procurement to dynamic trading networks.

Moving towards this vision requires significant integration and management of information drawn from previously unconnected data sets. Key players are already collaborating to see how they can achieve this (see also Chapter 8, Searchlight 23). Critical to their success, however, will be the need to provide additional value and benefit to all the players who constitute the new value networks. They will fail if all that potential participants, particularly suppliers, see is potential to be squeezed from yet another direction by a buyer arguing on the basis of transparency and volume for further price reductions. Their evolution, for this reason may take time, but dynamic trading partner networks will be one major change in the landscape wrought by the winds of the digital storm.

SEARCHLIGHT 3: FREEMARKETS – THE NEWCOMER IN B2B AUCTIONS ...

FreeMarkets concentrates on running auctions for the purchasing organizations of large industrial companies. It is a clear market leader in the direct goods area. Although it is primarily a facilitator of one aspect of e-procurement – auctions – and thus not directly in our focus, we include it as it is an industry veteran.

FreeMarkets aims to transform procurement processes ...

Publicly quoted FreeMarkets, based in Pittsburgh, Ohio, was founded in 1995 by Glen Meakem, previously in purchasing at General Electric, and Sam Kinney, a former management consultant. The two founders had seen from their previous experience that:

- Procurement of direct goods is complex, fragmented and in no way transparent.
- Quality assurance of products is a particularly critical issue.
- Buyer and/or seller auctions can yield great savings.

They realized that by leveraging the Internet to connect buyers and sellers they could efficiently implement auctions on a scale not previously possible.

In 1995, the business began development of a proprietary software solution (“BidWare”) for purchase auctions on the Internet. It now supports several auction models: simple, multi-period, multi-currency, price index (in which the relationship to the price of a reference good is fixed) and multi-parameter auctions (where criteria other than price play a role).

...providing services for the entire auction process...

Successful auctions need to be carefully prepared before they can be carried out electronically. To aid in this process, FreeMarkets therefore also provides a consultancy service to help enable the auction that covers:

- 1 **Product Identification of suitable products:** Selection of products that are suitable for auction (i.e. time expiring products with high buyer cost savings potential as they move towards expiry).
- 2 **Requirements Definition of requirements:** e.g. technical specification, volume, quality, conditions of delivery and conditions of payment.
- 3 **Supplier Selection of suitable suppliers:** Existing and new suppliers are identified, checked, notified about the auction and prepared for participation.
- 4 **Auction Execution of the auction:** Conducting typically an Internet auction lasting between one and three hours in which suppliers can track the competitors' bids anonymously and lower their prices in stages until the end of the auction.
- 5 **Evaluation of results:** Reviewing how the auction ran and whether it successfully met the client's expectations.

It has become a leader in on-line auctions

Serving 100 customers, FreeMarkets covers over 165 “supply verticals,” and has executed over 9200 online auctions. More than 3000 suppliers from 50 countries are included in the supplier database. Specialty chemicals, confiscated goods, packaging materials, metal parts, and valves are some of the categories covered.

Over US\$14 billion of goods and services have been transacted on-line since 1995, providing customer savings of over US\$2.7 billion. Average **savings** in product costs have been up to 40%. Annual growth in revenues and market volumes continues to be in excess of 150%.

Customers include United Technologies, Unilever, GlaxoSmithKline, Visteon, BP Amoco and HJ Heinz.

FreeMarkets aims to exploit network and scale effects

FreeMarkets has an attractive business model because the value of FreeMarkets rises with each auction. Auctions that result in customer savings spur increased use of the service, creating new business and in turn an expanding supplier

database that in turn attracts further customers and suppliers. Economies of scale kick in as relatively fixed costs of auction organization and administration are amortized over larger auctions.

A volume-driven business model

FreeMarkets generates the majority of its revenue from monthly service fees negotiated individually with customers before their first auction. These service fees are typically about one percent of the expected annual auction value. Further income comes from success payments dependent on savings realized.

Despite facilitating over US\$10 billion in auction commerce in FY 2000, the company recorded an operating loss of US\$165 million on a total revenue of US\$91 million. Commentators project that it can breakeven with auction volume of US\$13–15 billion.

Competition poses a significant business risk going forward

The **risks** inherent in the business model are clear, as reflected in the roller coaster ride of its (and its competitors') share price: savings from similar types of auctions will level out over time as they become the norm for some purchases and ultimately customers may organize the auctions themselves. There are now a number of software suppliers for auctions to allow this – companies such as Ariba, Commerce One, Oracle and SAP have recognized the attractiveness of this opportunity.

The future lies in an extended service offering

Continuing to grow volumes of auctions handled is a prerequisite for success; FreeMarkets needs to overcome resistance to new customers moving online.

The company has recently unveiled the next stage in its growth strategy; it is intent on extending its service offering from one time sourcing activities to helping customers plan their full supply chain processes. To this end, the company has made a US\$340 million acquisition of Adexa, a supply chain management software vendor.

It remains to be seen if this strategy will be successful. As in procurement, there are many strong vendors in the supply chain management software space. FreeMarkets' success will likely depend on the extent to which it can maintain strong customer relationships and migrate loyal customers to this more extensive service offering.

SEARCHLIGHT 4: DOVEBID – ... AND THE AUCTION INCUMBENT, MOVING ON-LINE

While FreeMarkets focuses on serving buyers, California-based Internet auction house DoveBid, Inc. focuses on sellers. It offers participating companies and public institutions an open purchasing platform for the acquisition and disposal of industrial goods through an Internet auction mechanism.

The screenshot shows the DoveBid website interface. At the top, it says "DOVEBID Business Auctions Worldwide" and "Over 60 years of experience". There are navigation tabs for "Home", "Auctions", "Buy & Sell", "Your Account", "Valuations", "Company", and "Help". Below this is a secondary navigation bar with "Calendar", "Marketplace Categories", "Payments", "Software Downloads", and "Webcast Help".

The main content area features an auction listing for "GKN Aerospace Corporation" with the title "Aerospace Equipment and Hot Presses". A table provides details:

Auction Type	Location	Starts (PT)	Ends (PT)
WebCast	Carson, CA	3/6/01	3/6/01
	USA	10:00:00 AM	5:00:00 PM

Additional information includes "Main Asset Type(s): Aerospace Equipment and Hot Presses Metalworking & Machine Tools" and "Featured Items" such as "SNK 5-Axis CNC Profiler", "(2) Cincinnati Gilbert CNC Horizontal B...", and "(9) Hot Presses".

Below the listing is a "Sale Information" section with details on dates, location, and proxy bids. A "Preview Information" section is also visible.

Overlaid on the bottom right of the screenshot is a promotional graphic with the text "Everywhere" at the top, two globes in the center, and "You Want Us To Be Global Knowledge" at the bottom.

Fig. 4.6 Dovebid's auction site.

DoveBid has a long heritage as a real-world business

DoveBid Inc, Headquartered in Foster City, California is one of the world's largest "real world" industrial auctioneers and asset appraisal firms. Founded by Harry Ross in 1937, the company's first auction sold 1000 used mops in a liquidation of a janitorial supply company for just 35 cents each. DoveBid now conducts auctions of large capital assets that have included the sale of the Maine Yankee Nuclear Power Plant and Camp Beale, one of the largest land auctions in history. DoveBid helps customers with all aspects of asset disposition of used capital assets in 19 categories, from single machine tools to 100-location projects. The company has fourteen offices in the US and seven in Europe and the Pacific Rim from which it serves global leaders such as Boeing, IBM, Lockheed Martin, Lucent, NEX, Nortel, and Raytheon.

An online channel increases liquidity

DoveBid's complementary online strategy is to focus on obtaining maximum value for sellers through competitive bidding. Its rationale for doing so is to increase liquidity in the marketplace.

The company's new service offerings combine the company's expertise in the sale and appraisal of used capital assets and portfolio of asset disposition solutions, with Internet offerings that includes live Webcast auctions, around-the-clock online auctions and sealed bid Internet sales. These Internet enabled services are in addition to traditional auctions that are enhanced by connecting buyers via Internet.

When DoveBid took its capital asset auction services online in November 1999, many doubted that buyers would bid for expensive industrial equipment over the Web. The doubters have been proven wrong; 60% of its business is conducted using the Web (online or Webcast).

Aggressive goals for expansion via a full service offer

DoveBid offers an extensive portfolio of online-enabled services.

The company's **asset disposition service** provides a wide array of auction and liquidation services. DoveBid works with its customers to determine

the optimum sales strategy to maximize the value of the sale, supports the sale with marketing resources and provides the necessary on-line transaction services

Webcast auctions bring distant markets “on-location” with DoveBid’s broadcasting of auctions live over the Internet. Participants can view asset descriptions and photographs online and bid in real time against both on-location and online bidders.

Online auctions allow 24×7 bidding supported by direct marketing to match customers’ assets with the right buyers. Buyers worldwide can inspect assets over the Internet through photographs posted on the Web or 360-degree virtual tours, available in multiple languages. Features include alerts to buyers when specific assets become available – ensuring that assets are matched to interested buyers.

A **Webcast network** offers Vertical Market B2B Portals, Exchanges, eMarketplaces and Online Publications access to the capital asset market. Currently 13 major organizations take advantage of DoveBid’s Webcast Network, including Yahoo! B2B

DoveBid valuation services are conducted in conjunction with partners Norman Levy Associates, AccuVal, Philip Pollack and Greenwich Industrial Services, the world’s largest appraisal company. Appraisals of machinery and equipment, inventory, intangible asset and business valuations are made accessible online, through a secured and encrypted Website

Transaction support services including shipping, logistics, financing, insurance, inspection, and warranty services are delivered through strategic alliances with some of the industry’s leading service providers

Results

Dovebid is a privately held company, so assessing its financial performance is not straightforward. Indications are, however, that the company’s use of the Internet has significantly grown the company’s revenues.

Future direction

DoveBid has aggressive plans to consolidate the fragmented business-to-business auction space, expanding vertically beyond its core manufacturing base and continuing to expand geographically through acquisition.

Maintaining an edge against a large number of new competitive upstarts will be key going forwards. However, the company's significant offline presence and leverage would seem to place it in a favourable position to accomplish its goals.

**SEARCHLIGHT 5: THE AUTOMOBILE INDUSTRY –
THE COVISINT SHOCK**

The announcement of Covisint in February 2000 by DaimlerChrysler, Ford and General Motors was highly significant in two ways: Covisint set out to restructure the processes of the entire automobile industry. And it was the first large-scale e-procurement initiative by a consortium of established industry giants. Covisint thus marked the turning point from independent B2B pioneers to industry-led markets.

Born from powerful parents

Covisint, an acronym for “Collaboration, Vision and Integration,” is one of the best-known initiatives in business-to-business e-commerce. DaimlerChrysler, Ford and General Motors launched this e-procurement initiative in February 2000. It became operative on October 3, 2000, with an auction hosted by Arvin-Meritor, a supplier of suspension components and exhaust systems. At the time of Covisint's incorporation in December 2000, each of the Big Three held about 30% of the company, the other co-founders Renault-Nissan held about 5% and the technology partners Oracle and Commerce One held jointly slightly less than 5%.

The platform enables both the electronic purchasing of vehicle parts and services and an improved collaboration along the whole value chain. Estimates

of the potential savings vary widely from US\$200 (Renault) to over US\$1000 (Goldman Sachs) per vehicle. Covisint will be open to all participants in the supply chain of the worldwide automobile industry.

A service offering to change the automotive world

The Covisint platform comprises **three areas**: purchasing, supply chain management and joint product development. While the specific service offerings are continuously evolving, the following gives a good overview of the core areas:

1 Procurement

The platform offers online auctions, catalogue purchasing and quote and asset management. It enables specialized marketplaces in public and closed areas, supports contracting and handles payments.

Highly confidential handling of sensitive data is a must. These data include volumes and product prices as well as company-related discounts. There are no plans for the joint purchasing of major parts, so the individual auto manufacturers will continue to differ in terms of quality, technology, service and price. But Covisint is exploring how to achieve cost reductions among the suppliers by bundling purchasing volumes in these categories.

Savings in purchasing will come from potentially large reductions in product and process costs. Major savings are targeted for C-parts (See Insert 4.1: “E-procurement of indirect goods”).

2 Supply chain optimization

The second area Covisint addresses is the optimal use of resources across the entire supply chain. Significant current assets are tied up in the value chain between raw materials and finished vehicle. Covisint supports supply chain management in the following areas:

- **Joint supply chain planning (“Forecasting”)**. Authorized participants jointly develop production plans and use a standard parts database
- **Stock management (“SupplyNetwork”)**. Current information on prod-

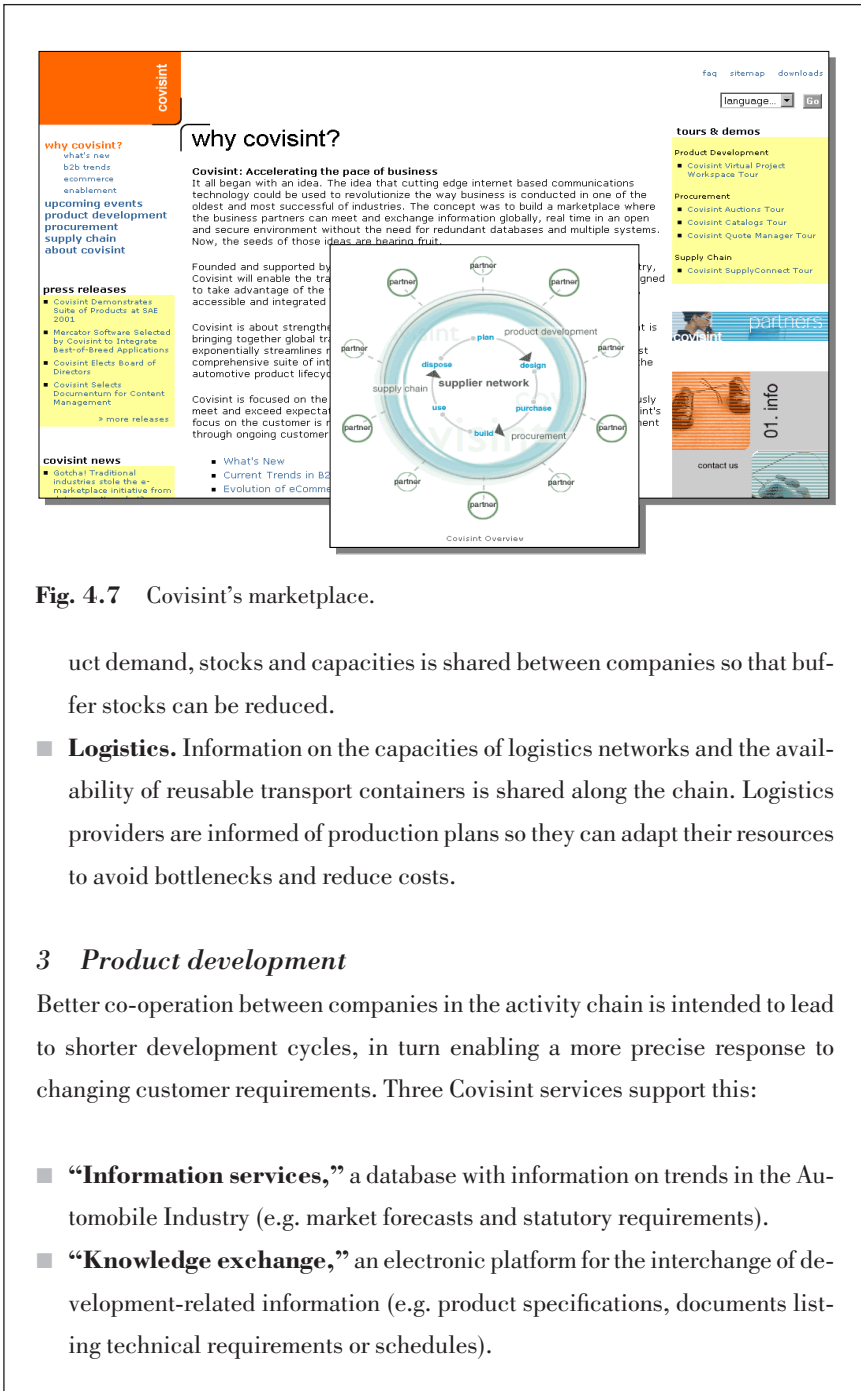


Fig. 4.7 Covisint's marketplace.

uct demand, stocks and capacities is shared between companies so that buffer stocks can be reduced.

- **Logistics.** Information on the capacities of logistics networks and the availability of reusable transport containers is shared along the chain. Logistics providers are informed of production plans so they can adapt their resources to avoid bottlenecks and reduce costs.

3 Product development

Better co-operation between companies in the activity chain is intended to lead to shorter development cycles, in turn enabling a more precise response to changing customer requirements. Three Covisint services support this:

- **“Information services,”** a database with information on trends in the Automobile Industry (e.g. market forecasts and statutory requirements).
- **“Knowledge exchange,”** an electronic platform for the interchange of development-related information (e.g. product specifications, documents listing technical requirements or schedules).

- **“Collaboration,”** a project management tool that synchronizes component development across worldwide partners.

Covisint generates revenues from flat-rate usage payments by participants, transaction fees and advertising. According to Dan Jankowski, head of corporate communications for the exchange, Covisint logged US\$350 million in transactions in the three months of operations in 2000. It estimates that around US\$240 billion worth of products could be traded electronically every year once the site is fully developed. Analysts project resulting annual revenues for the venture of up US\$3 billion. This compares with US\$1.3 trillion in annual spending on goods and services by automakers worldwide.

There are aspirations to extend the concept to include *end customers* in the future. Covisint could become the basis for built-to-order production of vehicles with a lead time of just a few days – the ultimate goal of the automobile industry.

Limited competition, but participant numbers are a key to success

Covisint faces only a limited number of direct competitors. Some existing platforms, like FreeMarkets, have automotive customers. But other consortia, like a Volkswagen-backed European venture including BMW, PSA Peugeot Citroen and Fiat, never got off the ground.

The number of participants of the exchange and their transaction volumes, however, are critical: Each additional member raises the utility for all participants. Minimizing barriers to entry for competitors and ensuring absolute confidentiality of transactions are key. Covisint has managed to maintain a certain pull on other *auto manufacturers*: Renault and Nissan joined the Big Three as founding members. There are continuous rumors about PSA Peugeot Citroen, Mitsubishi and Honda joining. Some manufacturers, most notably Volkswagen and Toyota, as well as large suppliers, such as Visteon, seem to prefer developing their own private marketplace. In order to lure the *suppliers* to join the

marketplace Covisint had to take a more “collective” approach than originally planned. While it resisted giving out additional shares in the exchange, Covisint granted its initial 40 suppliers profit sharing stakes in the business.

Covisint will shape its own future

Contrary to all the other major initiatives in the automobile sector, Covisint has launched and is operating smoothly. It is backed by strong parents and has an unquestioned staying power even through adverse financial markets. In the absence of strong competition, Covisint’s challenge is primarily to stay dynamic and evidence its value proposition.

Covisint has been under scrutiny from the US and European anti-trust agencies and they continue to limit its degrees of freedom. Although the launch of Covisint was cleared, the company will remain under close scrutiny. If cost reductions turn out to be derived primarily from the stifling of competition (monopsomy), rather than technical innovation, then Covisint could still be classified as violating anti-trust laws. The company has defended itself so far by emphasizing both its function as an independent technological resource and the benefit to all parties involved.

The other challenge to the dynamics of Covisint comes from its very core strength: The powerful shareholders. While the committed transaction volumes from these large manufacturers are staggering, joint ventures between competitors are notoriously hard to manage, in particular in fast-changing environments.

Covisint will overcome the above challenges when it substantiates the strong value proposition to its participants. Beyond industry-wide cost-reductions it might, however, also want to foster differentiated value creation.

At the end of the day, Covisint is in the enviable position of being in full control of shaping its own future.

SEARCHLIGHT 6: THE CONSUMER GOODS INDUSTRY – A BATTLE OF THE TITANS?

The consumer goods sector, particularly packaged and fast moving goods, has long been one in which manufacturers and retailers have battled with each other to secure their profit margins. A global trend towards concentration of retailers has lent weight to the retailers' camp, allowing them to squeeze their suppliers' margins over time. Over the years manufacturers have responded by improving the efficiency of their operations and seeking to develop new, value added products. Both sides were quick to see the opportunities that purchasing platforms might provide. In a flurry of activity in early 2000 a number of international procurement alliances were born. Manufacturer-sponsored marketplaces such as Transora, backed by over 50 of the world's major manufacturers, stood ready to respond to the Retailer-backed ventures such as GNX and WWRE, backed by some of the world's largest retailers. Recently, there are interesting signs that players are prepared to redraw some of the traditional battle lines if it will lead to success for their ventures. Meanwhile Wal-Mart, the world's largest retailer and traditionally fiercely competitive, has steered a more independent course.

Two well-defined sides

A common characteristic of the purchasing platforms created in the consumer goods sector (as with the Automotive and Computer industries) is the relatively small number of powerful buyers in the retail trade facing a large number of potential suppliers in manufacturing. Power has shifted over time to retailers as they have invested both in their own consumer product brands and their customer proposition in terms of retail experience.

Retailers load the first weapon

The retailers were the first group in the sector to establish e-marketplace initiatives. **GlobalNetXchange** (GNX) was founded in February 2000 by Carrefour, Sears and Oracle and soon attracted considerable industry purchasing power:

- Carrefour, the world's second-largest retailer

- Sears Roebuck, third-largest retailer in the US
- Kroger, largest food retailer in the US
- Metro, third-largest trading enterprise in the world
- Sainsbury, second-largest food retailer in Great Britain
- Coles Meyer, largest retailer in Australia.

WorldWideRetailExchange (WWRE) was opened to retailers and suppliers at the end of March 2000. Over 25 retailers participated in WWRE in its first few months of life, including Albertson's, Ahold, Auchan, Group Casino, Delhaize, El Corte Ingles, JC Penney, Kingfisher, Marks & Spencer, Rite Aid, Safeway (US), Tesco, Walgreen and Boots. Members are granted equity participation in the entity. US\$100 million was indicatively tagged for development of the platform, so commitments are substantial.

Wal-Mart, the world's largest retailer, second largest e-tailer after Amazon and fiercely competitive, has adopted a more independent stance. Since its early days, and reputedly driven by the vision of the legendary Sam Walton, Wal-Mart was a heavy investor in technology to drive the efficiency of its business. It operates a well established, proprietary supplier exchange network

WorldWide Retail Exchange

Veillez choisir votre langue: Français

Join WWRE: Retailers Suppliers

Welcome to the WorldWide Retail Exchange (WWRE), the leading Internet-based business-to-business (B2B) exchange in the retail e-marketplace. Current membership consists of 53 retailers from around the world with combined annual turnover of U.S. \$722 billion. The WWRE utilizes the most sophisticated Internet technology available, enabling retailers and suppliers to substantially reduce costs across product development, eProcurement and supply chain processes. We invite you to explore our site to learn more about what the WWRE has to offer.

Product Development: Product Design, Pre-Production Approval

eProcurement: Auctions, Group Buying, Catalogs, RFP/RFQ/RFI

Supply Chain: Product Tracking, Collaborative Planning, Forecasting & Replenishment

Industry Forums

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Fig. 4.8 WorldWide Retail Exchange.

called Retail Link. It is this that it is now developing into a richer, private e-marketplace rather than joining in of the public initiatives.

Wal-Mart is not entirely removed from the collaborative model, as it participates via its subsidiary McLane, a distributor, in **RetailersMarketX-change** (RMX). This was originally an initiative by oil giant Chevron to open up its proprietary system to improve the supply chain for its own filling stations and its affiliated retailers. Live since December 2000, it has now expanded to target small businesses, other filling stations, convenience stores, small retailers and their suppliers. It faces direct competitors in **PerformanceRetail** (PRI) – supported by oil companies Amerada Hess and Tosco – and **C-Store-Matrix** (Matrix), backed by the National Association of Convenience Stores (NACS).

The major manufacturers respond

The threat of already powerful buyers aggregating their buying power further stimulated a direct response from the manufacturers. The heavy artillery in this space is **Transora**, created in June 2000, with US\$240 million in funding from 50 manufacturers, to be a joint purchasing platform. The list of partners reads like a Who's Who of the US Consumer Goods industry: Coca-Cola, Cadbury Schweppes, Colgate, Gillette, Kellogg, Kodak, Kraft, Nabisco, Procter & Gamble, Sara Lee, Unilever, and others. Transora has announced that it is open to all consumer goods manufacturers worldwide, with no shareholder having more than a 5% equity stake. It intends to be a major force. Indicative levels of investment are US\$250 million in system development alone.

Transora is targeting a potential 11% reduction in manufacturers cost of goods, amounting to a saving of US\$22 billion according to the Grocery Manufacturers of America. More efficient purchasing and improved supply chain management are the key drivers. On-line product catalogues and ordering will be possible for direct and indirect goods and 'Collaborative Planning, Forecasting and Replenishment' (CPFR) will be used to improve automation, inventory management and product development in the food sector. Not to be out-done

by their US counterparts, European manufacturers formed **CPG markets**. It is backed by major producers Danone, Nestle and Henkel, and based on mySAP.

A shared primary objective: reduction of purchase costs

To date the primary objective of these platforms has been to reduce procurement costs. Three areas are prime targets: Process costs; product costs and inventory costs.

In testing and piloting optimization of ordering processes has been shown to yield considerable reduction in **process costs**. Orders by fax, telephone or sales meetings can be dispensed with and the number of overall orders reduced. Transparency of purchasing conditions reduces **product costs** while reducing delivery times and volumes lowers **inventory costs**. Improved demand estimation, automatic inventory management, just-in-time delivery and control can lower inventory costs by 20–40%. Time and volume-specific delivery and inventory management are of immense importance in the foodstuffs business, given the risk of perishability in addition to the costs of tied-up capital.

Peace? A more collaborative, but challenging future

The pedigree and power of the industry giant sponsored platforms certainly sets up a potential battle of the titans between manufacturers and retailers. The reality is that battle plans have had to be revisited as the future for B2B e-commerce in the sector evolves. There is likely to be more co-operation between the two sides than previously envisaged, in order to ensure success. Already **Transora** and **GNX** have set their sights on a ‘new era of collaboration’ for the grocery industry in their announcement of an interoperable ‘Megahub’. Transora had previously held out a hand to competitors and established connectivity agreements with **Foodtrader** and **Novopoint**, to reduce industry concerns about an apparent lack of interconnection between the different players.

The need to secure the best possible conditions for trading volumes to develop rapidly, and rationalize duplicated costs, has also seen rivals **RMX** and **Matrix** sign an agreement in principal to join forces to serve the convenience store industry.

The potentially combative stances of involved may have been softened, but there still some tough challenges to meet:

- **Internal co-ordination and founder competition:** Managing the balance of power between traditional competitors now involved in a collaborative enterprise remains a concern for management.
- **Antitrust issues:** The US Federal Trade Commission (FTC) is keeping a wary eye on these giant consortia. Acting within a tight (self)-regulatory framework may slowdown decision making and restrict future flexibility.
- **Maintaining the participation of key players:** Demonstrating the delivery of real benefits to those participating is critical to the continued commitment of members and future success. Transora has run a large number of pilot programs running but is not yet fully live. Volumes traded on GNX in its first year, 500 transactions worth US\$600 million, are still small in relation to the US\$400 billion annual purchases of its members. Some consortia members, such as Bristol-Myers Squibb and Procter & Gamble, have already indicated their intention not to over-commit to these ventures. They plan to continue to push some of their purchase volumes either through private marketplace initiatives or auction platforms such as FreeMarkets.

The landscape of e-markets in the Consumer Goods sector will continue to evolve. What is certain is that it is unlikely to be as originally conceived. The ambition of having a very small number of globally dominant platforms is being replaced with a vision for a more broadly based, flexible network that can accommodate the private marketplace initiatives of some players.

SEARCHLIGHT 7: THE COMPUTER INDUSTRY – BIG BLUE LIVES E-BUSINESS

The computer industry, inherently a technologically advanced sector, has spawned two major marketplaces backed by heavyweights of the industry. These competing consortia, e²open by IBM (as well as Toshiba, Ariba, I2 and others) and Converge (previously eHITEX) by Hewlett Packard and Compaq, are poster children for buy-side e-markets. By the end of 2000, IBM already claimed more than US\$ 1 billion in internal cost savings from e-procurement.

IBM “creates” eBusiness ...

IBM, long a powerhouse of IT hardware, software and services, came late to the Internet frenzy that had taken hold of the entire IT industry. In 1996, “Big Blue” was on the verge of missing the potential of leveraging its unique assets to ride the Internet wave. At that time, a small project was launched within IBM’s Software Group that recognized the potential of the Internet to drive fundamental new business value into organizations. **eBusiness** was born.

eBusiness provided IBM with a unifying theme to focus on across all of its divisions and a strong message for business partners and the external marketplace.

... and applies it to itself

For IBM it was obvious that launching its own Internet-based supply chain management should be a major initiative, not only as a source of competitive advantage but also as a proof point that IBM was itself an “eBusiness.”

However, the company faced two major challenges.

Firstly, IBM had a complex set of co-opetition relationships; a given industry “competitor” might also be a supplier to, or collaborator with, separate IBM divisions. For example, IBM has been involved in the joint development of the PowerPC with Motorola and Apple; IBM Technology Group is a major supplier of components such as hard disks to both Dell and Compaq; Computer Associates is both a major partner of the hardware and service divisions of IBM and a major competitor of its software divisions.

Secondly, the scale of the venture was substantial. Within just one sub-product group, such as tape storage, IBM might deal with over 100,000 distributors and resellers; these issue over 2.8 million invoices in the USA alone, and despite significant EDI usage, 95% of suppliers (in 1997) were still sending their documentation in paper form.

While IBM was still contemplating the best way to address these issues, in early 2000 two of its competitors started to act.

Hewlett Packard and Compaq-backed Converge (originally eHITEX) gets to market first

At the beginning of 2000 HP and Compaq founded an open Internet marketplace, eHITEX, for the computer industry, encouraging all manufacturers, subcontractors, dealers and peripheral suppliers to access the platform. Initially covering more than 28,000 products and about 200,000 components, the platform was expected to drive additional cost reductions of between 5 and 7 percent.

Twelve companies, including AMD, Gateway, Hitachi and Samsung, joined HP and Compaq in contributing to the US\$100m funding required for the venture. However, the platform is expected to become self-financing through transaction fees and consultancy services. The **principles** on which the business model is based are:

- **open membership:** The platform is open and free from special rights for all electronics manufacturers, sub-contractors and dealers;
- **equal access:** each member is able to access the whole service;
- **non-exclusivity:** Each member has the opportunity to work with other platforms;
- **confidentiality:** The whole information flow is handled confidentially; and
- **standardization:** The new company uses standards, such as RosettaNet, which are supported by most of the founding members.

The **advantages** of the platform to the participants are expected to lie mainly in the following areas:

- **a broader range of choice:** Access to new customers and subcontractors, or alternative distribution channels and greater market transparency;
- **improved order processing:** High performance, uninterrupted Web-based access to all procurement processes and real-time transactions;
- **lower transaction costs:** An open, standardized infrastructure for simplified and accelerated business processes;
- **reduced inventory risks:** Shorter throughput times and simpler order tracking; and
- **more efficient communication:** Cost-effective interaction between the business partners.

eHITEX renamed itself Converge in December of 2000. At the same time the company acquired NECX, a leading electronics components exchange, from VerticalNet – along with a triple-digit, three-year software contract.

IBM responds by leading the e²open venture

Two months after the announcement eHITEX from Hewlett Packard and Compaq, IBM announced its intention to lead the development of and participate in a separate marketplace for electronics and telecommunications equipment under the name of “e2open.com”.

IBM had strong assets to kick-start this new venture: The marketplace is being hosted and built by IBM Global Services and uses software from its e-commerce software partners Ariba and i2, whose supply-chain software automates and manages the purchasing and inventory process. IBM used its network to attract further strong shareholders including Nortel, Matsushita, LG, Seagate and Toshiba.

The founding companies have committed US\$100m in equity capital, while other investors have committed US\$80m in funding in return for a 20% equity stake. e²open has jump-started its position by partnering exclusively with partminer.com, giving it the capability to provide technology, services, and access to a catalog of more than 12 million electronic parts.

In April 2001 they announced a “strategic member program” for non-shareholding participants. Omron, Ricoh, Sanyo and Sharp joined as such.

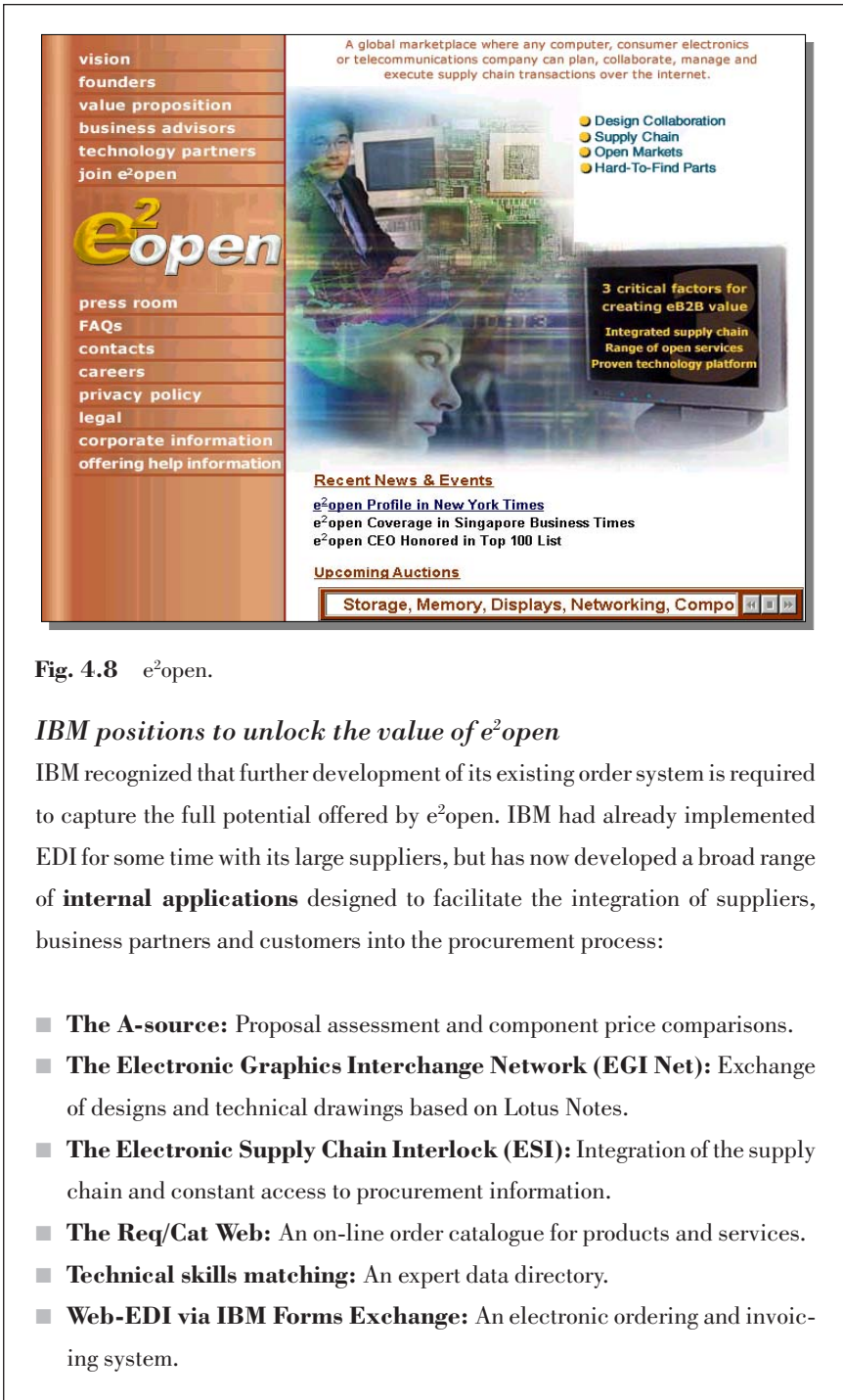


Fig. 4.8 e²open.

IBM positions to unlock the value of e²open

IBM recognized that further development of its existing order system is required to capture the full potential offered by e²open. IBM had already implemented EDI for some time with its large suppliers, but has now developed a broad range of **internal applications** designed to facilitate the integration of suppliers, business partners and customers into the procurement process:

- **The A-source:** Proposal assessment and component price comparisons.
- **The Electronic Graphics Interchange Network (EGI Net):** Exchange of designs and technical drawings based on Lotus Notes.
- **The Electronic Supply Chain Interlock (ESI):** Integration of the supply chain and constant access to procurement information.
- **The Req/Cat Web:** An on-line order catalogue for products and services.
- **Technical skills matching:** An expert data directory.
- **Web-EDI via IBM Forms Exchange:** An electronic ordering and invoicing system.

Integrating these internal developments with the power of a full electronic procurement market will generate significant business value for IBM. The company claims that its internal cost savings have already surpassed US\$ 1 billion by year-end 2000.

Intermediary E-Markets Try to “Deliver It All”

INTERMEDIARY ONLINE MARKETPLACES are an e-commerce phenomenon. In less than two years around 1500 marketplaces have emerged worldwide. This mushroom-like growth has been stimulated by the promise of very attractive returns for winners in the game: High shares of industry transaction volumes; loyal users attracted by rich context; a range of additional services revenues and high returns to relatively low levels of invested capital. Their survival, however, is determined by their ability to achieve critical mass and market liquidity. It is a high-risk game.

Intermediary marketplaces have seen both the most stunning successes and the highest-profile failures. It is particularly rewarding to compare two sectors, where deregulation should have offered a similar opportunity: Energy and telecoms. Whereas in energy Enron, an industry veteran, jumped on the opportunity and built the world's largest marketplace, telecoms has initially been dominated by independents, who have failed to become significant. Players in many other sectors have to rethink their strategies. Initially positioned to facilitate the virtual consolidation of highly inefficient and highly fragmented industries, many intermediary business models are still in their formative stages, seeking to move beyond the purely transactional role to define higher value-added propositions of interest to mainstream customers.

To be successful, these e-markets have to go beyond pure transactional exchange and provide substantial value-added services that address process issues in the industry as a whole. In many sectors growth has not been as rapid as some players hoped, so competition is transforming into co-opetition and consolidation is on the horizon.

NAVIGATOR THROUGH CHAPTER 5

Intermediary marketplaces assume extensive functions

Intermediary markets are essentially “neutral,” bringing together multiple buyers and sellers (e.g. **General Electric GXS, Enron**). Information and transactions are at the forefront, but “context”, “customization”, “collaboration” and “connectivity” are playing an increasingly important role (e.g. **the construction industry**).

Marketplaces take on many different forms

Horizontal marketplaces deal with a function or business type, while vertical marketplaces specialize in a particular sector. The trend is increasingly towards networks of marketplaces. (e.g. **VerticalNet; paper, chemicals, steel industries**).

Marketplaces have clear success factors

Demonstrable economic benefit for participants and rapid growth are preconditions for the development of a marketplace. Customer relations then become increasingly important. Marketplace operators must provide extensive information that supports participants (e.g. **telecommunications, financial services**).

Marketplace operators have several revenue models to choose from but profits remain a challenge

There are several revenue models available to marketplaces. However, commercial success requires management of a flexible mix of revenue sources.

Consolidation is on the horizon

The number of marketplaces will continue to grow, but the competitive landscape will soon change. We are already seeing intense merger and acquisition activity across all sectors.

INTERMEDIARY MARKETPLACES ASSUME EXTENSIVE FUNCTIONS

Intermediary, and essentially “neutral,” these e-marketplaces bring together multiple suppliers and buyers via the Internet on a single Website. As with today’s local weekly markets in some towns and the stock exchanges, they are open to all suppliers and buyers – even if users may have to register to participate in them. Compared to buy-side purchasing platforms, intermediary e-markets can potentially offer even more purchasing advantages to their participants. The “hub and spoke” architecture of a neutral e-market, enabling many-to-many connections via a central marketplace, can be more effective than creating a large number of point-to-point connections between multiple buyers and sellers via purchasing platforms.

Such electronic one-to-one connections between suppliers and buyers were prevalent before the advent of the Internet. Large EDI-based networks were created (compare Insert 4.2: “EDI and XML explained”). The biggest global network was run by General Electric Information Services. GEIS has created a unit focusing on Internet-based B2B markets, General Electric GXS, which is facing the daunting task to migrate its customers into the new economy.

→ **Searchlight 8:** General Electric GXS – and dance they must! (p. 152)

Intermediary e-markets fulfill the classic economic functions of a market without participants having to be physically present. Information is up-to-date and interaction can be in real-time. As we said in Chapter 1, we see three main areas contributing to the completeness of such markets: “Content,” “Context” and “Commerce.” In simple terms, one can identify five levels of functional sophistication in these markets, across these three parameters (see Fig. 5.1):

- 1 **“Virtual industry directories:”** Suppliers can announce their presence and list their products on the marketplace via links to their corporate Website in the form of a link collection and corporate information held on the Website. These are “content” related functions.

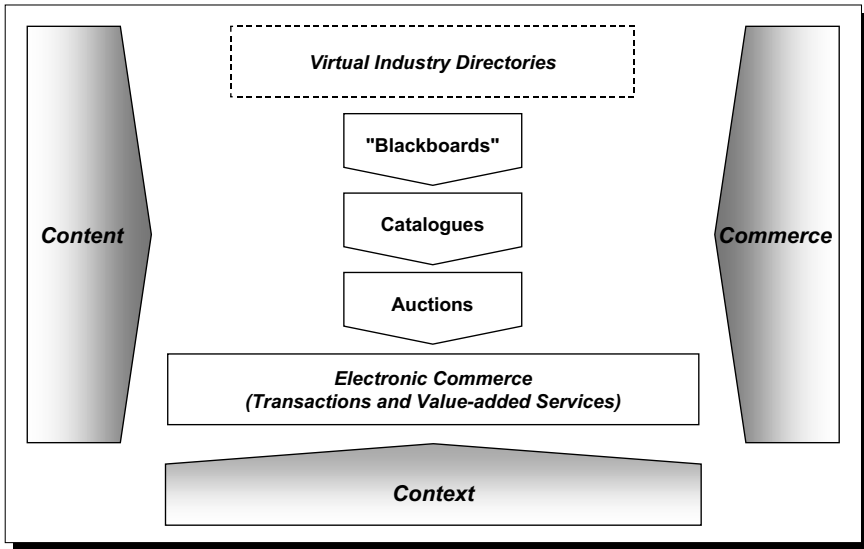


Fig. 5.1 Functionality of e-markets.

- 2 **“Blackboards:”** Suppliers or buyers publish individual products or services offered or sought on the Website. So, for example, a supplier can market individual excess stock. Again “content” functions.
- 3 **Catalogues:** Suppliers product catalogues and price lists are aggregated into a database and/or made transparent and comparable through a search function. Business can be initiated by e-mail and, in some cases, orders taken electronically. Some neutral e-markets offer sellers an exclusive facility to set up their own Internet shops with tools available via the e-market Website. Some markets provide a buyer-oriented facility to bundle orders together to achieve volume discounts. Once again “content.”
- 4 **Auctions:** Suppliers can sell their product via auction, while buyers can seek tenders (reverse auctions) for their requirements. These are often time period specific. A “commerce” function.
- 5 **Electronic commerce:** At their most sophisticated, transactions among market participants are supported in real-time. A host of value added services are offered by the market operators or associated companies in support of this. Again a “commerce” function.

Essentially, neutral e-markets support and facilitate commercial transactions between third parties. Transaction-related information that creates contacts between companies and initiates individual transactions is at the heart of these markets. Virtual industry directories, blackboards and catalogues enable systematic searching, offer constantly up-to-date information, and are technically relatively simple to implement. Although most e-markets today are still purely information suppliers creating opportunities for transactions between parties, they are already substantially increasing market transparency. In time e-marketplaces themselves will execute transactions – in some cases maintaining the anonymity of seller and buyer. Ultimately the more sophisticated markets will go far beyond simple buying and selling to add dynamic pricing services, negotiation algorithms, notification services, up-selling and cross-selling services. **Value added services** such as credit worthiness checks, trustee functions, organization of logistics chain, customs handling, and interim storage and factoring will be added as wrap around services to the commercial transactions.

By far the most interesting case is “new economy upstart” energy company **Enron**. Enron is the most successful intermediary marketplace to date. Its marketplace executed trades worth US\$336 billion in the year 2000. It used the window of opportunity of the deregulation of the US electricity market to build its early dominance. With a history of operating in relatively asset intense energy transmission businesses they are leveraging their energy trading knowledge and related skills to create value adding service propositions around the provision of transaction focused, exchange-based markets.

→ **Searchlight 9:** The energy sector – Enron, the exploding powerhouse (p. 155)

As we have said, “**commerce**” – the initiation and handling of transactions – is at the heart of intermediary e-markets but effective markets also offer their users access to relevant information (“**context**”) to enable and support their transactions. This may take the form of reports from specialist trade publications, access to archives and databases, and relevant current general news. Valuable context can also be generated by the marketplace itself, for example by providing analyses, at an aggregate level, of users’ behavior.

The next stages in the development of neutral e-markets are already visible (Fig. 5.2). Maturing e-markets develop “**rich connectivity**” within their

target customer groups, by encouraging and facilitating interaction between the participants. Rich connectivity includes collaborative messaging so interested parties can exchange views on specific topics. Services can include job centers, industry specific training resources and buyer/supplier evaluations and ratings which enable participants to review ratings of products and evaluate business partners based on the experience of others. Supplier/buyer evaluation tools of this nature increase market transparency and the quality of information available to participants – without editorial expense for the marketplace operators. Ratings systems also encourage responsible behavior as they are open for all to see.

Successful intermediary markets will provide numerous opportunities to tailor their service (“**customization**”) to the needs of individual participants. Homepage views of the market Website can be individually configured, product catalogues can be limited to display only relevant required services, industry newsletters can be automatically edited to a single users predefined requirements. All this customization is achievable at very low incremental cost to the market operator using standard information management tools.

Successful marketplaces will need to enable effective co-operation between participants (“**collaboration**”) to resolve industry specific process bottlenecks or “pain points” – for example the development of new products or the implementation of joint projects. These pain points may not necessarily

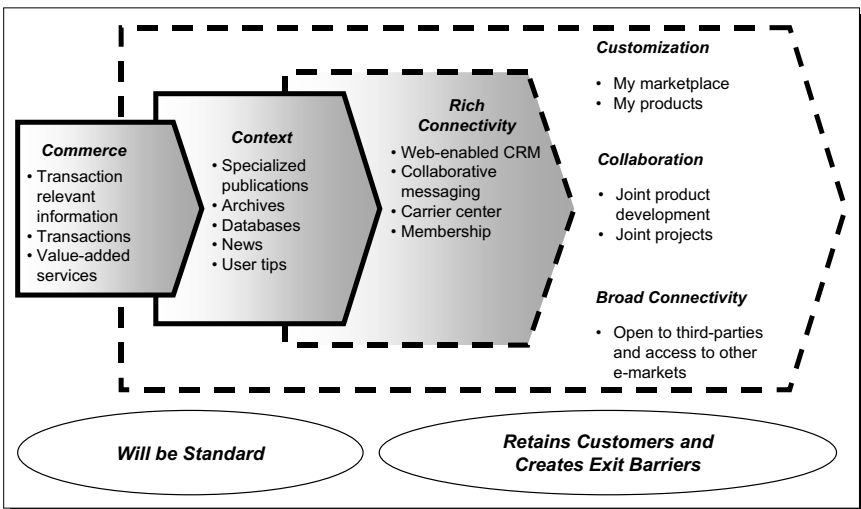


Fig. 5.2 Future development of successful marketplaces.

be a direct precursor to or consequence of a transaction. They will however represent an opportunity to generate revenues from specific services or tools made available on a “pay for” basis. This type of functionality increases the importance of a marketplace to its participants. E-markets for the **construction sector** provide a good example of what we mean.

→ **Searchlight 10:** The construction industry – finding simplicity in complexity? (p. 158)

Another factor that will begin to separate the successful e-markets from the also-rans is open networking of the market with service providers, participants from related sectors and, above all, other relevant e-markets. This creates what we call “**broad connectivity**.” This means that individual sector specific markets do not become closed worlds or walled gardens, but can allow companies to manage business relationships that extend beyond their industry sector, for example for the purchase of indirect goods. Effective intermediary e-markets provide a powerful mix of rich connectivity, customization, collaboration and broad connectivity that ensure individual participants have a comprehensive and relevant virtual space within which to operate. These elements also help forge strong relationships among participants and create powerful barriers to exit.

Providing more than lowest cost transaction processing and a source of cheaper materials and services is a must. Improving the overall process by which business gets done along the industry value chain is the best route to survival and profit.

INTERMEDIARY E-MARKETS TAKE ON MANY DIFFERENT FORMS

There are many forms of intermediary e-market. The most notable difference is between horizontal and vertical marketplaces (Fig. 5.3). **Horizontal marketplaces** offer their services across multiple sectors (e.g. general trade, auctions, import-export, remaindered items and excess stock). In general terms these are easier to implement than their “vertical” counterparts and offer simple commercial and non-commercial functionality. In terms of raw numbers,

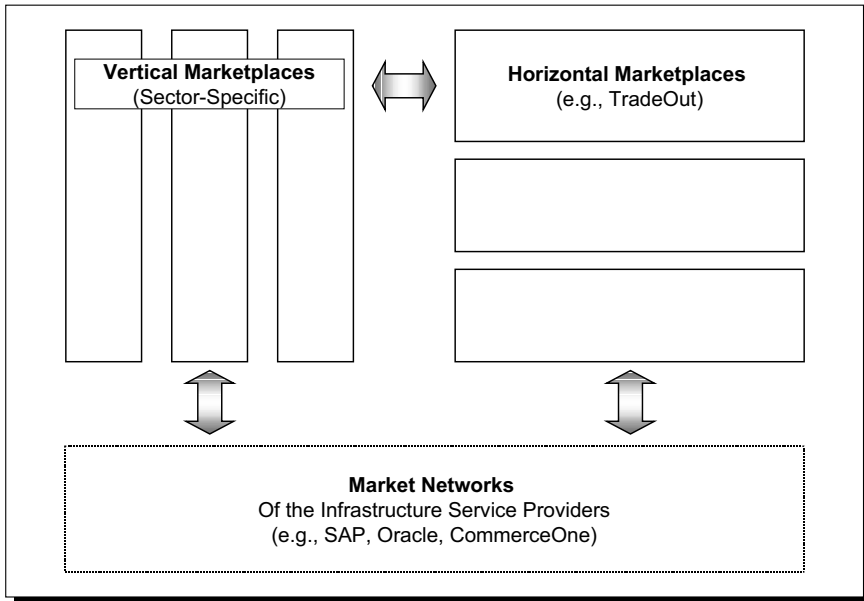


Fig. 5.3 Marketplace classifications.

their importance looks to be declining. By late 2000 horizontal marketplaces occupied around a third of the market.

VerticalNet, a pioneer of the industry, has set up vertical markets in many sectors. The company's IPO early in 1999 marked the beginning of what became a wave of e-market euphoria world-wide. VerticalNet provides simple marketplace functions for over 50 sectors and has been seeking rapid internationalization. As it has been challenged by later entrants in the many sectors it is serving it is continually evolving its role in the electronic marketplace.

→ **Searchlight 11:** VerticalNet – can a pioneer stay relevant? (p. 162)

Surpluses and remaindered items are an important part of the business of horizontal marketplaces. Specialized marketplaces bring together suppliers and buyers who would previously have had no opportunity to do business together. Marketplaces such as Tradeout.com, Liquidation.com, Surplex.com and Rebound.com ensure that surpluses and remainders are now traded world-wide on the Web. A critical issue facing these marketplaces is whether they can survive in their own right in the longer term, or whether they will only be able to survive as a compliment to sector-specific vertical marketplaces.

→ **Searchlight 12:** Marketplaces for surpluses and remainders – great now!
 Viable later? (p. 167)

Vertical marketplaces focus on one industry sector. They now exist in virtually all sectors (Fig. 5.4), require an in-depth knowledge of the sector from their operators and generally aspire to be the dominant player in the sector. They can be constructed to provide a simple information and transaction platform for a group of sector participants (e.g. as found in Transport or Telecommunications), or they can develop as complex industry marketplaces for a large number of different participants across several stages of the value chain (e.g. as found in construction or health).

There are many industries sectors in which the growth of intermediary e-markets has been notable, but we consider developments in the **agri-industry** to be particularly remarkable. In few other sectors have so many marketplaces established themselves so quickly. This is one of the reasons that by late 2000 the agri-industry had become one of the three biggest sectors for e-markets in only a few years. One of our favourites is **GoFish**, a marketplace for the fisheries industry. In addition to the current price trends on the fisheries exchanges, weather reports, sector news, its own radio station and a comprehensive manual, visitors to the Website will also find numerous processing notes for fish and seafood.

Horizontal Marketplaces		
General Marketplaces VerticalNet (many verticals) Global Trade Center		Residual items AsseTrade Surplex Liquidation TradeOut
Vertical Marketplaces		
Agriculture Farms.com Rooster GoFish XSAg	Electronics/IT Converge Tradeloop e ^o open Teksell	Healthcare MedUnite Omnibuyer Neoforma WebMD
Chemical Industry CheMatch Elemica ChemConnect Envera	Energy Energygateway Intercontinental- Enron Exchange	Metals e-Steel Metalspectrum MetalSite Steelscreen
Construction BuildOnline Buzzsaw Buildpoint Citadon	Financial Services 401kexchange OpenIPO MuniAuction Tradebonds	Telecommunication Arbinet Enron Band-X RateXchange
Consumer Goods GlobalNetXchange Transora WorldWideRetailExchange	Graphics Industry Impresse Noosh iPrint printCafe	Transport CarrierPoint GoCargo Celarix Transportation.com

Fig. 5.4 Marketplace examples by category.

Vertical markets, by their nature, are advantaged against their horizontal cousins in the depth of their customer understanding that they can build. This specific knowledge can be the basis for providing valuable services beyond simple transaction facilitation and execution.

The disadvantage of vertical marketplaces is that each individual marketplace may have to bear the full cost of its own technology investment, while potential synergies in marketing across sectors are limited. These structural disadvantages have been addressed by companies such as Ventro that have sought to bundle several related vertical e-markets together through acquisition and co-operation. The clear dividing line between a horizontal marketplace with some sector emphases and a vertical marketplace serving several related sectors is therefore blurred and will blur further.

We provide case examples from various sectors – the paper, chemical and steel industries – to illustrate the development of vertical marketplaces.

→ **Searchlight 13:** The paper industry – paperless PaperExchange (p. 169)

→ **Searchlight 14:** The chemical industry – poisoning the independents? (p. 174)

→ **Searchlight 15:** The steel industry – unlikely early movers (p. 178)

Intermediary e-markets hold their greatest **potential** in large fragmented markets. For this reason, VerticalNet, for example, concentrates its attention on sectors with over 3000 suppliers and more than 40,000 consumers. In some sectors it is the potential to increase the efficiency of multi stage or layered transactions that makes a marketplace offer attractive (e.g. Construction or Health). Sectors in which products are homogeneous or relatively easily to categorize (e.g. Agriculture and Energy) are also attractive. Highly complex and specifically tailored, on the other hand, are much less easy to trade on marketplaces. The presence of internet savvy users within a sector has been a spur to e-market development in some industries (e.g. Electronics and Telecommunications). In others the fact that the products themselves can be digitized (e.g. Telecommunications, Financial Services) or the absence of strongly branded producer goods on the supply side (e.g. Agri-industry) have stimulated growth.

INTERMEDIARY E-MARKETS HAVE CLEAR SUCCESS FACTORS

There are four important success factors for e-markets: deliver high levels economic benefit to participants; rapid growth; achievement of a critical mass; and development of strong customer relationships.

E-markets have to provide a clearly-identifiable **economic benefit** to their participants. This can come either from higher sales or lower costs for suppliers and/or buyers. **Higher sales** can be driven for suppliers by developing new customers in existing markets or creating new markets. Access to new customers can be achieved by overcoming obstacles of geographic distance, size, established competitive positions or a lack of market transparency that exist outside the e-market space. The creation of new markets can come from creating sufficient market liquidity for product categories that were previously not economically viable. Thus, in the past, there were no functioning markets for excess Logistics, Telecommunications or Energy capacity. Efficient trading opportunities for these time-expiring products are emerging only with the advent of electronic marketplaces.

Lower costs can be driven from the greater efficiency of the markets. Product costs tend to fall as greater market transparency leads to improved pricing and therefore lower market prices. Under certain circumstances, aggregating individual buyers purchase requirements also leads to the achievement of better prices. At the same time, electronic handling reduces transaction costs for both suppliers and buyers. Finally, manufacturing process and inventory holding costs can be reduced if real time product availability information can be provided between participants.

The second important factor for success is **rapid growth**. Market transparency is only achieved if the majority of those in the sector participate. As the number of participants increases, so **network effects** take hold as the number of potential trading relationships rises sharply and, for each participant, the probability increases of finding the best business partner in the marketplace. As discussed in Chapter 1, network effects lead to a geometric increase in the utility to users of the marketplace and, to a natural tendency towards concentration, because e-markets with a large number of participants

provide disproportionately greater benefits to their participants than their smaller rivals. These effects can be particularly strong if participants in the markets are competitors but can also act as buyers and sellers, for example as in the Energy, Transport or Telecommunications markets. In these instances the neutrality of the marketplace operator is important. On top of all of this there are benefits to scale because average costs fall as the number of participants increases. Our case example of the telecommunications sector clarifies these effects.

→ **Searchlight 16:** The telecommunications sector – exchanging the ultimate digital commodity (p. 182)

Intermediary e-markets are seeking to effectively create and exploit network effects so that they achieve **critical mass** and **liquidity** rapidly. This is a key to long term survival. There are at least three potential routes to doing this:

- 1 Attracting large customers and leading suppliers to the marketplace
- 2 Creating incentives for frequent use, by providing free services and the (temporary) waiving of participation fees
- 3 Providing a high level of size-independent economic benefit (e.g. best context).

In terms of target metrics for success, 20% of sector volume is often quoted as the order of magnitude required to reach critical mass as a market leader. The search for critical mass and, once it is reached, acceptance as the industry standard has been one of the drivers behind marketplace operators giving equity in their businesses to important participants and decision-makers in the relevant sector.

The need rapidly to reach critical mass also has consequences for the business models that marketplace operators will adopt. Notable in this respect are Vestro, owner/operators of the Chemdex (now closed) and Promedix marketplaces. In early 2001 the company announced a change of business strategy from one of building and owning 100% of its marketplaces towards joint ownership of marketplaces with established “bricks and mortar” industry partici-

pants. This may reduce the apparent neutrality that Vestro can claim for its markets – but it hopes to accelerate its speed to liquidity.

Besides providing real benefits to all participants and growing rapidly, the **development of enduring customer relationships** is increasingly important for the continuing health of a marketplace. Marketplace operators must aim to achieve the highest possible level of “stickiness” for their market. To do this they must offer compelling reasons for an individual user to stay online in the marketplace for long periods, and to use the market often. Alongside this aim is a determination to create subtle, but effective switching costs which deter users from adopting another service. Customization of the e-markets tools and applications to an individual users needs and linkage of these tools into the individual users work processes are ways of creating effective barriers to exit. These are issues that are increasingly important in the financial services industry.

→ **Searchlight 17:** The financial services sector – the second electronic revolution (p. 188)

“Getting it right” on all the fronts that we have described requires a deep knowledge of how the industry works, well beyond just understanding how commerce is transacted in the industry and could be effected electronically. Marketplace operators need to both experienced “insiders” who appreciate the critical processes that surround commerce in the industry and creative “outsiders” who bring a perspective on how to reconfigure these processes to improve their effectiveness. Industry insiders and experts are the most likely winners in this space, rather than well funded, technology savvy entrepreneurs who claim their advantage is built on speed of execution. We return to how to “get it right” in Part IV.

MARKETPLACE OPERATORS HAVE SEVERAL REVENUE MODELS TO CHOOSE FROM

E-market operators have a range of possible sources of income. The most important amongst these are:

- 1 **Member subscriptions or participation fees:** Fixed or usage-dependent fees for use of the marketplace;
- 2 **Transaction fees or commission:** Volume or value-dependent fees for carrying out transactions in the marketplace;
- 3 **Income from advertising or sponsorship:** Marketing to marketplace users by third parties;
- 4 **Sale of marketplace information:** Sale of anonymized information (e.g. to suppliers) on users dynamics and behaviors to create market transparency;
- 5 **Fees for additional services:** Usage-dependent fees for services, for example access to specialist databases, sector news, credit worthiness checks, organization of the supply chain, trustee functions, etc.; and
- 6 **Software and technology licencing:** Sale of marketplace operating software to other operators.

Today, the majority of earnings generated by e-markets come from the first two sources. Unfortunately, there are some disadvantages with these. Firstly, they can slow down growth in usage of the market by creating a barrier to using the market, and secondly they may create an incentive for participants to avoid communicating via the marketplace.

Finding the right mix of revenue sources, often in the face of directly comparable competitors, is viewed as a key challenge for marketplace operators. Unfortunately the business model should have determined the very structure of a marketplace and current efforts by many e-markets to change the revenue mix in mid-course are not likely to succeed.

We discuss in more detail the routes to profitability and likely successful business models in Chapter 7. It is worth noting here, however, that even those who are well established players in the game are fundamentally challenged to decide the best way forward.

CONSOLIDATION OF MARKETPLACES IS ON THE HORIZON

We do see significant consolidation among marketplaces just around the corner. The network effects of successful marketplaces; the failure of some early

marketplace initiatives; an increasing trend towards mergers to achieve critical mass more quickly and increasing caution among venture capitalists all tend to indicate consolidation.

Expect to see bold acquisitions made by marketplace operators with IPO cash still on their balance sheets, buying rivals whose stock prices have hit the doldrums.

We look to the future in greater detail in Chapter 7.

SEARCHLIGHT 8: GENERAL ELECTRIC GXs – AND DANCE THEY MUST!

General Electric's Information Services (GEIS) had been the undisputed world leader in electronic data interchange (EDI) before the Internet, handling a trading volume of US\$1 trillion for over 100,000 companies worldwide.

With the launch of the Global eXchange Services (GXs) in 2000, GE is now aggressively leveraging this basis to strive for global leadership in B2B e-commerce. GE is arguably the most instructive example of how large companies are now embracing the electronic marketplace and of the legacy challenges they have to overcome.

A leader in the “old economy”

General Electric is a global leader by most measures, be it revenues, earnings or market capitalization. In 2000 it had revenues of US\$130 billion, earnings of US\$12.7 billion and a market capitalization around US\$500 billion. GE has consistently won awards as the most admired/respected company, biggest wealth creator and more. CEO Jack Welch is among the world's most frequently featured business leaders.

Throughout the 1980s and early 1990s, GE Information Services (**GEIS**) built the world's largest network and supporting data centers for electronic data interchange (**EDI**), the electronic business standard in pre-Internet times. As recently as 1997, GEIS was essentially the only B2B electronic buying network in town. It can boast of serving more than 100,000 customers worldwide (of which GE's own Trading Partner Network has 7000), including 60% of the Fortune 500 companies. For these it handles 1 billion transactions (worth over US\$1 trillion) annually, dwarfing current B2B Internet exchanges.

For that very reason, GEIS initially looked at the insecure, unreliable Internet-based systems as “poor man's solution” to EDI. Had anyone asked GEIS for its top priority in 1999, it would have responded “getting our customer base safely through the Year 2000 (**Y2K**) transition,” rather than moving towards Internet-based e-commerce.

Transitioning GE to e-business

In 1999 Jack Welch started to push GE towards embracing e-business. He famously stated that e-business should be “priority one, two, three and four” for all GE divisions. But large companies don’t change their course readily.

As soon as the Y2K scare had passed, Welch took a more decisive stance. He devised a program called “**destroyyourbusiness.com**” (DYB), requiring all divisions to reinvent themselves, leveraging the Internet, before somebody else did. Every unit had DYB-teams, seeking to transition GE into the Internet Age. Anecdotes about locked mail rooms and unplugged printers at GE have since permeated the business press.

To date the unit that has most aggressively embraced B2B e-commerce is GE Plastics. In 2001, this division pledged to contribute US\$4 billion in buying and selling over the Internet (of the US\$20 billion expected for the conglomerate as a whole). GE’s new CEO-to-be, Jeffrey Immelt, has announced that he anticipates cost savings of US\$1.6 billion for 2001 from e-commerce. Going forward, however, GE will shift its attention from its current efficiency and cost focus towards generating additional revenue through Web-based services.

The launch of Global eXchange Services

In early 2000, Harvey Seegers, CEO of GEIS, proposed an even more aggressive plan to transition this service provision unit into the New Economy. Like IBM, who in the early nineties had created a unit separate from its mainframe business to launch the PC, Harvey Seegers pushed to split GEIS into two parts: GE Systems Services, continuing to run the EDI network; and GE Global eXchange Services (GXS), a software and marketplace builder based on Internet technology. Seegers was successful, securing hundreds of millions of dollars of investments from GE headquarters for his plan. Tellingly he chose to run the then much smaller GXS unit.

So far, GXS has lined up a range of important partners, from CommerceOne and PriceWaterhouseCoopers to Tibco. It has acquired another partner, TPN Register, a leading interactive catalog management system provider. Although primarily focused on building and running (private) marketplaces for

other companies, GXS has also launched its own **Express Marketplace**. Apparently the unit does not fear estranging its customers by competing with them. Instead it positions its marketplaces as an alternative for those companies that do not want to build their own solutions.

The dancing elephant

The big challenge for GXS going forward is that all its widely publicized “assets” are largely still in its sister, GE Systems Services, that focuses on smoothly running the physical infrastructure for EDI networks:

- An enviable customer base and trading volume, in particular in manufacturing, retail, transportation, energy and telecom.
- Three huge data centers with sophisticated back-ups and 24/7 service in the US, Europe and Asia.
- A well-trained staff of over 600 professionals, with mastery of the computer languages (legacy and modern) as well as speaking the local languages.

The migration of these assets to the Internet world will not be easy: GXS’ services are much more application oriented than before and Internet-based markets do indeed threaten to “destroy the (infrastructure) business” of GE Systems Services as e-markets no longer need expensive leased-line networks to run over. But the GE elephant has to start dancing to the Web tune. The impressive speed that GXS has shown over the last year positions the company as a leading contender in B2B e-commerce going forward. The (dance) steps are clear, and the emphasis has now shifted towards execution. And, as Harvey Seegers says, “GE has execution down cold.”

SEARCHLIGHT 9: THE ENERGY SECTOR – ENRON, THE EXPLODING POWERHOUSE

Enron is one of the world’s largest natural gas, electricity, and communications businesses. The driving factor in the company’s recent growth has been their commitment to the Internet. In late 1999, the company created a platform for online energy trading. Within 6 months, 45% of the company’s wholesale business was being conducted online. By yearend 2000, EnronOnline had become the world’s largest Web-based e-commerce site, processing commodity transactions with a notional value of over US\$3bn per day.

Roots in energy

Enron was formed through the merger of two leading US natural gas suppliers in 1985. As they built and acquired assets in their quest to become a world leader in natural gas supply, the company realized that deregulation of the energy industry would provide significant opportunities for wealth creation.

From vertical to virtual integration

Traditionally, energy companies would acquire or produce their product, transport it, and distribute it to their end customers. An example of this “vertical integration” would be an oil company who owns oil wells, their own refineries, and their own gas stations.

Enron’s contrasting approach was to enable “virtual integration” by bringing together suppliers and purchasers of energy commodities and services. Enron would become a centralized marketplace for contracts in gas, electricity, oil or other goods and services. Deregulation would allow them to play this role.

In 1989, the company began trading gas commodities in the US market. In 1994, the company conducted its first electricity commodity trade.

In 1990 around 80% of Enron’s revenues came from the regulated gas-pipeline business. In 2000, 95% of its revenues and more than 85% of its operating profits came from “wholesale energy operations and services” – their commodity trading business.

The Internet multiplier

As an offline market maker, Enron saw the potential of using the Internet to make

their operations more efficient. The effect was dramatic, serving as a prime example of the potential of the Internet for operating marketplaces.

The company designed an Internet-based global transaction system where different counter-parties can see real-time prices from Enron and transact instantly online.

EnronOnline went live in November of 1999. The site was an instant success, prompting Enron to expand the range of offerings, the range of trading models, and the range of applicable geographies.

The site began trading US Gas and Canadian Gas and soon followed that with Electricity products from the US. Since, there has been a montage of different commodities and products from emissions trades, to weather-derivatives, crude oil products, telecom bandwidth, and networked data storage.

Enron also began to offer auctions in addition to standard trading, and expanded into new geographies. By early 2001, business was conducted from five trading floors in Houston, four in London and others spread around the US and internationally (Amsterdam, Frankfurt, Tokyo, Sydney and Sao Paulo).

In the year 2000, the company processed 548,000 transactions, with a nominal value of US\$336 billion. In the fourth quarter of the year (approximately one year after the site went live) the company was offering more than 1150 products to 3000 customers, and processing on average 3900 transactions per day, with a nominal daily value of approximately US\$3 billion. By April 2001, cumulated trading volume had reached \$525 billion. Enron was by far the world's largest e-commerce site.

Proof of concept hits the bottom line

Enron's revenue increased from US\$40.1 billion in 1999 to US\$100.8 billion in 2000. The majority of the increase in revenue came from buying and selling contracts in natural gas and electricity.

Adapting strategy based on the new reality

Enron goes further than many marketplace operators, becoming not only an

operator, but a participant as well. “Enron’s strength lies in the knowledge its market-making gives it,” according to one competitor.

There is also a new aspect to Enron’s business model, a concept they call “optionality.” It was pioneered at Enron by Jeffrey Skilling, the company’s CEO. Optionality means that a business uses access to many customers and suppliers to minimize risk and maximize value in any transaction. An electric company, for example, might not use a power plant to generate maximum electricity, if selling the plant’s natural gas fuel could bring a higher price at that moment. The unprecedented, real-time market visibility resulting from the company’s online systems has uniquely enabled them to pursue this strategy.

Success attracts competition

In March 2000, energy giants BP Amoco, Royal Dutch/Shell and the Totalfina Elf Group joined forces with financial institutions Deutsche Bank, Goldman Sachs, Morgan Stanley Dean Witter and SG Investment Banking to announce the launch of IntercontinentalExchange, an electronic marketplace for energy, metals and other commodities. In July 2000 the original founders were joined by a group of six large US electricity providers, who had formed a trading consortium and were looking for a platform: American Electric Power, Duke Energy, El Paso Energy, Reliant Energy and Southern Company Energy.

IntercontinentalExchange is headquartered in Atlanta. It has launched metal trading in August 2000 and energy trading in October 2000. With such powerful member companies committing trades it should not come as a surprise that cumulated volume surpassed the US\$100 billion mark in April 2001.

Going forward

Enron’s success has built the confidence that it can successfully create markets for other dynamically-priced commodities. As proof of concept, the company points to their bandwidth trading business. Enron also introduced financial derivative products (futures, options), which build critical liquidity (see Insert 7.2: “Liquidity of e-markets”). To date, Enron is the best example of the power of Internet marketplaces and their potential to change their operator’s business.

SEARCHLIGHT 10: THE CONSTRUCTION INDUSTRY – FINDING SIMPLICITY IN COMPLEXITY?

Buzzsaw, along with its main competitors in the US construction industry, Citadon (the result of a merger between Cephren and Bidcom) and BuildPoint, is an example of an e-market with a strong focus on effective supply-chain collaboration: It aims to provide a building project management resource to involve all relevant participants in the industry from architects to contractors.

A large and complex industry ripe for e-markets.

The construction industry is one of the biggest sectors in the economy and offers ideal long-term conditions for the use of e-markets.

Numerous parties are involved in construction projects. Apart from some strong brands, building materials manufacturers include a large number of small regional suppliers. The “craft” industry (carpentry, bricklaying, plumbing, electrical) is heavily fragmented but there are also many local suppliers among the architects, construction companies and wholesalers. There is demand from hundreds of thousands of builder-owners for a broad range of new development and renovation services. The business relationships and co-ordination requirements between all participants are many and diverse. Inefficient planning and communications processes currently accompany the industry’s complex structure.

Three players stand out from the 150 or so competitors in the space: Buzzsaw, Citadon and BuildPoint. We will look at Buzzsaw in a little more detail.

A newcomer to the building sector (launched November 1999), Buzzsaw’s collaboration strengths grow out of its most important partner – Autodesk – a leading manufacturer of CAD software in the field of building. Autodesk provides support to Buzzsaw in the form of technological know-how, capital and management resources. Other important investors include Bank of America and Morgan Stanley. By May 2000, Buzzsaw had raised total capital of US\$90 million. The company focuses its offer on the USA via ten regional sales offices, but will seek to gain a global presence in the next five years.

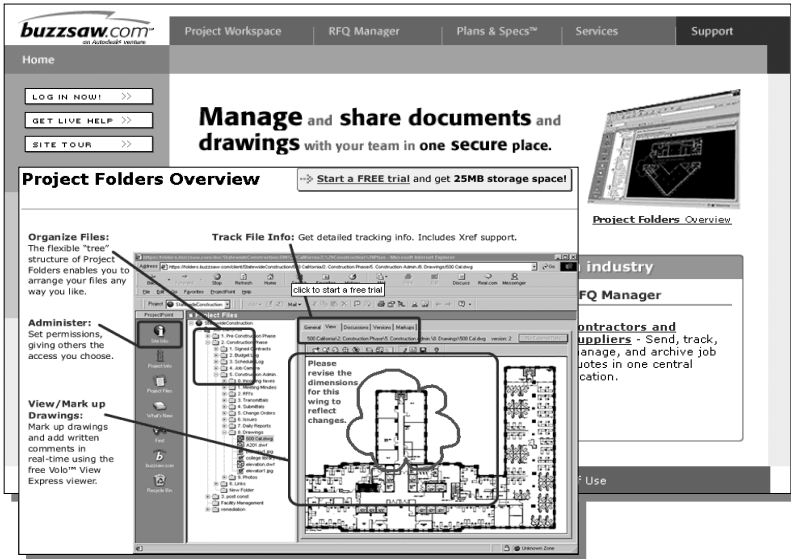


Fig. 5.5 Buzzsaw.

Buzzsaw offers effective project management

Buzzsaw offers three important services to the construction industry:

- Software for process support (e.g. collaboration, design, calculation, project planning and accounting)
- A wealth of information for the building sector
- An exchange for trading goods and services in the building sector.

The **software** provided is designed to improve planning and communication in building projects and also to help reduce the normal incidence of budget and scheduling excesses. At the heart of the software is **building project administration** that can be used to reproduce the whole management of complex building projects. It includes the support of design, project planning and building progress monitoring. Building project administration includes deadline and consignment administration. Those participating in the building project can “meet” to discuss the current project status in an on-line conference via a Web

camera, Web telephony, on-line document usage or an electronic flipchart. A further Buzzsaw service provides installation of Web cameras on building sites to allow monitoring of progress on a building by the builder-owner. CAD planning software is also provided.

... and critical context for participants

Buzzsaw also offers comprehensive **contextual information** for the building sector, including:

- Sector news
- A sector directory
- A product database independent of specific manufacturers
- An education and training directory
- Local weather conditions for building.

All goods and services relevant to the building sector are negotiated on an Ariba-powered **exchange**, supported by a convenient multiple-criteria product search facility. There is also a tendering engine.

A vision of a completely revolutionized building project process

How is the service used? An owner and architect in location x can use the site to collaborate with designers in location y on project drawings, track and send documents from their desktops, and hold online meetings to discuss details of a project which may be located in location z. Architects can use Buzzsaw Catalogs to search for products and later specify the chosen products for the General Contractor (GC) to use. Once construction begins, GCs can then look up the specified products requested by the architect and find out how to order them. Using the Bid Manager, the GC sends out invitations to bid to subcontractors. The GC can track responses, accept or reject bids and build a project team. The team is then given access to project information on Buzzsaw, and can stay in contact in a number of ways, including a customized homepage. Once underway, all team members can view the site via Webcam.

A broadly based revenue model

The main sources of income for Buzzsaw during 2000 were based on the following:

- **Transaction fees.** Buzzsaw received a transaction fee of just less than one percent for all goods and services negotiated via the marketplace. To scale this, the worldwide on-line market for building materials is estimated in the region of US\$3 trillion over the next five to ten years, so an average transaction fee of about 0.5% charged on this total would generate US\$1.5 billion. With a world market share of 20%, Buzzsaw could have an annual turnover of US\$300 million from transaction fees.
- **User fees for software.** During 2000, Buzzsaw charged between US\$200 and US\$1000 per user per month and it had handled over 7000 building projects by the summer of 2000. The number of building projects that could use Buzzsaw services is estimated at around 250,000 annually. Assuming a long-term average of US\$200 per month as a user fee, the market potential is US\$600 million and Buzzsaw could generate a turnover in the region of US\$120 million. Income from new software products sits on top of this.
- **Advertising income.** Buzzsaw has an initial advantage of attracting advertising income from the building sector. This income depends, however, on the importance that Buzzsaw can establish within the sector over the long term. Income is expected to continue to be tens of millions if its targets are met.

Adding these streams together provides an insight into the scale of potential ambition at Buzzsaw: a US\$500 million revenue business.

Current environment still challenging

By late 2000, Buzzsaw had 20,000 projects managed on the site, with 1200 new users and 600 new projects being added each week. Buzzsaw’s strength in having a strong presence at an early stage of the supply chain (among architects) had, however, left large and valuable sections where Buzzsaw had been weaker than its rivals – such as bidding. In October 2000 the site launched a bidding

service to allow contractors to send out invitations to bid and gather information on prospective bidders.

However, the reality is that Buzzsaw and its competitors have all struggled to realize significant revenue from any of the sources described above. Fierce competition, slow adoption, low usage and “introductory” pricing have all contributed to a turbulent start to e-markets in the construction industry. Major rivals Citadon and Buildpoint both made staff cuts in early 2001. Critical to future success for all is growth in the number of projects managed online.

Winning propositions rooted in “completeness”

E-markets will become an established feature of the building sector. What is clear is that any winning proposition in this space must offer – either organically or via partnership – services that reach across the entire value chain. In addition to competition from newcomers, established companies in the building sector are emerging with their own Internet services. These “old world” players can exploit their extensive building know-how, existing customer relations and established processes. Their critical advantage may be to reassure existing participants that a move to online project management is practicable.

SEARCHLIGHT 11: VERTICALNET – CAN A PIONEER STAY RELEVANT?

At the beginning of 1999, VerticalNet’s IPO heralded the onset of a period of worldwide e-market euphoria. The company started out as a site for professional communities. By early 2001 it was offering industry content and B2B commerce functionality for almost 60 sectors and a technology platform for full implementation of e-marketplaces. The pioneer and early leader in B2B markets has been challenged to continuously evolve its business model. VerticalNet now focuses on leveraging its technology as well as its enviable base of over 20,000 industrial suppliers.



Fig. 5.6 VerticalNet Marketplaces.

An evolving strategy to address a changing market

VerticalNet addresses the breadth of the market through two complementary businesses. **VerticalNet Marketplaces** targets the small-to-medium enterprise (SME) market, providing content, community, and B2B commerce functionality for 59 sector-focused community Websites. **VerticalNet Solutions** targets the Large Enterprise market, providing software to companies and consortia who wish to operate their own online marketplaces. VerticalNet strives to combine these strengths by increasingly linking its “enabled” supplier network with the e-markets it builds.

The pioneering business: VerticalNet Marketplaces

VerticalNet began by providing content and community to professionals in vertical industries. The company’s initial focus was on attracting the buy-side. However, it did not address the purchasing departments of these customers, but rather the professional end-users. Conventional wisdom at the time – the

heyday of the “virtual community” euphoria – dictated that VerticalNet would eventually be able to monetize these valuable individuals.

Under the leadership of the early B2B visionary, Mark Walsh, the company started its first virtual sector community, WaterOnline, in 1995. The site targeted professionals in the municipal and private water industries. By early 2001, VerticalNet had built out and brought together 59 sectors under one roof. Each “sector” has its own domain name, but uses the same layout and Website structure and offers similar types of services.

Context

The most prominent feature of each site is **editorial information**, with each sector catered to by an industry-expert editor. The sector experts write analyses, explain trends, present innovations, advertise events and discuss products. This content is closely linked to daily industry news and press articles. A shop in each sector offers sector-specific literature, software, videos, magazines and market research reports, one way in which the site looked to monetize its customer base.

Collaboration

An important draw for users is the so-called **professional center**, which offers job-specific information as well as the ability to collaborate with other industry participants. It contains a job center offering recruiting company profiles. There is also an education area with access to training courses and materials, and an industry events calendar and services provided by training establishments. Registered users can exchange ideas in a discussion forum with Live Chat, which is one of the ways the sites strive to make users return on a regular basis. There are also lists of industry standard terms, sector-specific software for download and links to other potentially interesting industry-relevant Websites.

Transactions

As VerticalNet’s strategy evolved, the company realized that in order to facilitate commerce and derive the bulk of their revenue, it needed to represent in-

dustries’ sell-side on their sites as well. The large supplier base has arguably become VerticalNet’s strongest asset. The company provides a number of services to suppliers.

Vendors can present themselves and their products through VerticalNet’s **e-commerce centers**. These are essentially Internet shops with product catalogues and ordering and payment facilities.

VerticalNet offers various types of support for handling commercial activities. A buyer can search in **product centers** for products to retrieve product information. It is possible to search by various category descriptions and also directly access manufacturers’ catalogues exhibited in **virtual storefronts**.

VerticalNet’s value proposition to businesses renting virtual storefronts or e-commerce centers focuses on two points:

- the business partner appears within the context of the sector and is linked to a page frequented by the relevant target group
- VerticalNet offers a highly scalable Web technology solution, enabling even small companies to have a competent Internet presence.

From operating exchanges to enabling them:

VerticalNet Solutions

VerticalNet’s NECX subsidiary was a leading electronic components exchange, and a significant revenue stream for the company early on. In mid-2000, the company chose to divest the business, selling it to Converge, another exchange serving the high technology industry. As part of the deal, Converge agreed to use VerticalNet’s technology platform as the engine for their exchange, jumpstarting the **Solutions** line of business for the company.

VerticalNet Solutions offers a software platform for market makers to build and operate digital marketplaces. The product suite is an end-to-end solution that includes community, content and market design tools, multiple market mechanisms and transaction types, multi-party system interaction and a broad range of buy- and sell-side services. This offering combines the technologies

from a number of software acquisitions, such as Isadra, a developer of a catalog aggregation solution, and Tradeum, a provider of a dynamic pricing platform.

Competitive challenges for both marketplaces and technology solutions

In the Marketplace business, the company faces stiff competition from vertical marketplaces in each individual sector. Nonetheless, VerticalNet has been successful in attracting many sell-side companies to their network of sites. By mid 2001 the company claimed to have an “enabled” network of over 20,000 industrial suppliers.

The Solutions business operates in an equally competitive environment facing such established marketplace software providers such as Ariba and Commerce One (see also Searchlight 23). The core challenge for VerticalNet in this area is to “productize” its strong platform, as required for a profitable software business.

For the year 2001 VerticalNet expects revenues around US\$150–160 million, with both businesses contributing on an equal footing.

Profitability is a prerequisite for staying relevant

Unfortunately, customer growth has so far not translated into profitability. VerticalNet achieved revenues of US\$112.5 million in the year 2000, but had a loss of US\$97.4 million. In response to these financial concerns, as well as the across-the-board fall in favor for Internet and B2B in general, the capital market had at one point in early April 2001 reduced the company’s valuation by about 99% from its peak value in early 2000.

VerticalNet has responded aggressively to these challenges by reducing its cost structure and refocusing its activities. In particular the company is striving to network its many holdings in order to fully leverage the accumulated assets it has built. It has also restructured its strategic relationship with Microsoft to reflect the new priorities. VerticalNet expects to reach profitability in QIV 2001.

To use an analogy from biology: VerticalNet still has to prove, whether it is a transition species, such as a small weed that colonizes soil to prepare it for other plants, or whether it is a virgin forest species, such as a hardwood tree, which continues to thrive in more mature environments. Whatever VerticalNet’s ultimate fate will be, it has made history as a pioneer that put B2B e-markets on the map.

SEARCHLIGHT 12: MARKETPLACES FOR SURPLUSES AND REMAINDERS – GREAT NOW! VIABLE LATER?

Electronic marketplaces for surpluses and remainders bring together buyers and suppliers who have not had an opportunity to do business directly. Marketplaces such as Tradeout.com, Liquidation.com, Surplex.com and Rebound.com ensure that surpluses and remainders are now traded worldwide on the Internet. As their value is essentially focussed on creating liquidity, a key question is whether they can survive long term or whether they will become an extension of vertical marketplaces.

Surplus goods offer a large market with potential for huge efficiency gains

Surplus goods and remainders arise for a wide variety of reasons. A manufacturer may have overestimated demand, product specifications such as color or size may not match requirements, orders are withdrawn or investment goods are replaced before the end of their useful life. Remainders can occur when companies are liquidated – a possibility at all value added stages, from raw materials through to finished product. The estimated annual value worldwide of surpluses and remainders is over US\$35 billion and about one quarter of this is finished products.

The market is characterized by a very fragmented supplier and consumer structure as surpluses or remainders occur in every company and can be of interest to many buyers due to potentially low prices. Previously, complex net-

The screenshot displays the Liquidation.com website. At the top, there are language options: "Auf Deutsch", "En Español", and "En Français". Below this is a navigation bar with links for "HOME", "BUYER", "SELLER", "SERVICES", "MARKETPLACE", "MY ACCOUNT", "HELP", and "ABOUT US". A "Sign-Up for the Buyer Alerts" and "Contact Us" link is also present. A search bar is located on the left with a "SEARCH" button. The main content area features a large banner titled "The Complete Solution for Business Surplus" with a description of the B2B network. Below the banner are three columns: "Buyer Benefits" (Secure, Powerful Sourcing Tool, Easy Fulfillment), "Full Service Solution" (Shipping & logistics, Inspection, Sales & Marketing, Collections & Escrow, Shipping & logistics, Financial Services, Fraud Prevention), and "Seller Benefits" (Pre-Qualified Buyers, Protection of Brand, Guaranteed Payment). A "REGISTER NOW!" button is at the bottom right.

Fig. 5.7 Liquidation.com surplus marketplace.

works of brokers and sub-brokers found potential buyers. Now the internet has enabled the development of specialized marketplaces for these surplus and remainders.

The online surplus market is still developing

One of the market leaders is **TradeOut.com**, a horizontal marketplace for surpluses and remainders from all industries. **Liquidation.com** is another US supplier with a similar range of services.

The final positioning of the various marketplaces is far from complete. Initially, horizontal marketplaces worked to aggregate supply and demand for surpluses and remainders over multiple sectors. More lately a number of specialists appeared to deal with surplus inventory in particular vertical sectors such as **Retailexchange.com** in consumer goods and the self-explanatory **truckcenter.com** and **autotradecenter.com**. Goods are generally marketed by auction, although in some cases fixed prices can also be demanded, or bids sought by sellers.

Surplex.com emerges as a leader in the European market

In Europe, the German company **Surplex.com** entered the market in February 2000 and has rapidly developed into a leading on-line marketplace for the

marketing of surplus industrial machinery. Over 12,000 offers, from kilns to hydraulic presses, are available online and the company employs more than 100 staff and is aiming at a turnover in excess of US\$35 million for 2000, mainly from transaction fees. It remains to be seen whether Surplex.com will establish itself as a broad horizontal marketplace or whether it will take a more vertical focus and expand its used machinery offer.

The future of standalone surplus markets is uncertain

The **disadvantage** of these marketplaces is that they focus on creating liquidity and transparency of price rather than solving specific industry pain points. They may leave critical issues unresolved, for example the arrangement of transport, installation and service of industrial equipment. A further problem is that suppliers to vertical marketplaces do not have to make their surpluses identifiable but can increasingly use dynamic pricing opportunities to sell, so “surplus” goods become transacted in “normal” marketplaces. The long-term success of surplus and remainders markets is by no means assured.

**SEARCHLIGHT 13: THE PAPER INDUSTRY –
PAPERLESS PAPEREXCHANGE**

After a great deal of activity, there are only a few e-markets remaining in the paper industry. PaperExchange and producer-backed Forestexpress.com are the incumbant powerhouses while Enron’s Clickpaper.com and Miller Freeman’s PaperLoop represent potential threats. PaperExchange is currently the leading electronic marketplace for paper and related products. It is a typical example of the development of vertical marketplaces in a sector.

The paper industry is characterized by low growth rates and overcapacity. The market is heavily fragmented on the buyer side while several producers supply almost 50% of total sector volume to companies of all sizes. Transaction frequency is high and spot purchases account for around 15% of industry purchasing. Brands play a minor role because of standardization. The benefits of an electronic mar-

marketplace in this situation are obvious – greater price transparency and market liquidity, the efficient allocation of production on a global basis, increased liquidity, and increased transaction efficiency. Established companies such as the US giants International Paper, Weyerhaeuser and Georgia Pacific have only recently entered the B2B market space. At the same time, large-scale intermediaries such as Unisource have also failed to offer their own Internet services.

PaperExchange is a dominant pioneer...

Founded in 1996 by former corporate consultants and managers from within the Paper Industry, **PaperExchange** targeted large paper manufacturers with the goal of bringing increased liquidity to the market. The range of products was initially limited to cardboard boxes and packaging material but has since expanded to cover all six major industry standard product segments. The number of companies participating in the marketplace has risen from 250 at the end of 1998 to over 5500 in early 2001.

...offerings and features are comprehensive

PaperExchange enables suppliers and customers to negotiate prices and conditions using standardized procedures and then execute transactions via the electronic marketplace. All paper grades, cardboard boxes, cellulose, waste paper, primary products and machinery are traded. Its services are offered in all of the major European languages. Early in 2001 the company expanded its offer with the introduction of PEx Procurement Manager, an online procurement tool for those in the paper industry.

To get started, a participant registers using an Internet form that, in addition to registration, also provides a facility to enter customer-specific features. Following registration the participant receives an identification number that grants access to the PaperExchange services. Suppliers and buyers remain anonymous until a deal is struck. In the event that an agreement is entered into, the supplier pays a commission of 3% of the gross transaction value to PaperExchange. Sellers can pass on this transaction fee to buyers.

Participants have the opportunity to **personalize** their user interface by creating a MyPaperExchange. Information about products, inquiries and offers, as well as sector-related news and discussion forums, can be individually configured. Each participant can prepare forms for frequently activated transactions, archive its published offers or inquiries and enter product profiles for a rapid search for relevant entries. Offers and searches are held in a database in which customer data is also recorded so participants can define enquiries to flexibility. Users can enter preferences to enable offers and information to be pre-selected. Security is guaranteed through configurable individual user access rights, encryption and certification.

Editorial **context** in the form of articles, newsletters and headlines are made available to customers. Materials are organized according to topics and keywords, enabling participants in the marketplace to have requirement-related access to information. Significantly, some of this is drawn from strategic partner **Paperloop**.

PaperExchange also offers numerous complementary **services**. The marketplace supports business initiation through Web forms and the publication of contact addresses. Creditworthiness checks are carried out using standard procedures at the request of buyers. Widespread use is made of standard information sources on the creditworthiness of companies and special requests are passed on to the Société Générale de Surveillance, the quality assurance and credit rating agency. Co-operation with C.H. Robinson, a global supplier of logistics services, enables PaperExchange to provide transport cost estimates and the planning and handling of transport are undertaken on request.

Strategic alliances have become an important component of the PaperExchange business model. Partnerships with suppliers such as International Paper, Asia Pulp & Paper and Bowater increase volumes and reinforces trust in the marketplace. Sales potential is strengthened through an exclusive agreement with Staples, the large office supplies company.

PaperExchange creates value for buyers and sellers

Buyers have access to a large number of worldwide suppliers. The time and

expense required to search for business partners, as well as direct transaction costs, are reduced. Greater market transparency increases efficiency while reducing purchase prices. Additional cost savings are generated through buyer's direct access to the suppliers and through service aggregation as buyers consolidate invoices and handle processes electronically.

Sellers are given access to a larger market. Savings for sellers result from simplification and acceleration of the negotiation process while, at the same time, the dependency of sellers on traditional, expensive sales channels and selling organizations is reduced. Standard products with an attractive margin can be offered electronically, particularly in an industry where utilization fluctuates. Manufacturers with capacity can be pre-sold via the marketplace. Order production, instead of storage production, is possible, helping to optimize current assets and lower manufacturing costs. Previously expensive ancillary services such as credit checking, transport cost estimation, transport handling and insurance are now cost-effective and can generate potential new customers.

PaperExchange is a major force

Rapid execution of strategic alliances along the value chain by a top-flight management, indicate the company is a powerful competitor. The multilingual features of the service demonstrate a desire to establish a rapid foothold in the global market.

The company continues to focus on adding value by reducing supply chain inefficiency and has recently partnered with Schenker, an international freight forwarder and logistics provider, to strengthen this area of its offer. It is a natural service extension to further reduce industry pain points.

Competitive pressure in Paper Industry B2B e-markets is Growing

PaperExchange has a first mover's advantage in that the benefit of the marketplace increases for each individual participant as volumes increase. However, the potential of neutral markets could be limited given the long-term delivery

contracts that still prevail as a result of the capital intense nature of sections of the print industry (e.g. Newsprint).

Three large producers, Georgia Pacific, International Paper and Weyerhaeuser created **Forestexpress.com**, an electronic purchasing platform for the forest products industry, in early 2000. Subsequent investors have included industry heavyweights The Mead Corp., Boise Cascade and Willamette Industries. At the same time, there has been a consolidation of paper industry e-marketplaces. Companies such as Fob.com and PaperX.com have closed down their transaction-based services and shifted their focus to providing e-commerce services and solutions.

Enron's **ClickPaper.com** has a different business model to that of PaperExchange and ForestExpress.com. Instead of concentrating on being a matchmaker between buyers and sellers, ClickPaper.com aims to create a more liquid spot market that will benefit Enron's risk management products. ClickPaper.com not only discloses prices, but also guarantees transactions by always playing the role of counterparty. It began by trading risk management contracts such as swaps and price caps that help paper producers or consumers hedge against price fluctuations.

Trade magazine publisher, Miller Freeman, has also been attracted to the sector, launching **PaperLoop.com** with hopes of leveraging the industry access of their industry leading publication Pulp and Paper Magazine. PaperLoop is likely aiming to provide and operate an e-market platform for pulp and paper industry. Miller Freeman's reputation, relationships, and industry knowledge of where specific pain points lie may enable Paperloop to be a formidable player alongside PaperExchange and ForestExpress.com.

Even with industry consolidation increasing traffic to surviving e-marketplaces, the traffic to these Websites remains below expectations. PaperExchange traded 42,000 tons of pulp and paper in 2000, 22 times more than in 1999, but there is a long road ahead if PaperExchange seeks to command a sizable portion of the global US\$370 billion pulp and paper industry.

SEARCHLIGHT 14: THE CHEMICAL INDUSTRY – POISONING THE INDEPENDENTS?

The commodity nature of much of the chemical industry offers a natural basis for e-markets. The sector is thought to represent one of the potentially biggest electronic marketplaces worldwide. Independent e-markets initially dominated the landscape. The environment of the large multinationals, however, has proven unhealthy for these young intermediaries. One by one the independents are yielding business to emerging initiatives backed by the large conglomerates.

An industry suitable for e-markets...

The strong attraction of e-markets to the Chemical Industry has been stimulated by the industry's complex structure – few sectors have such extensive trade conducted with primary and intermediate products. There are hundreds of thousands of chemical goods and no two manufacturers offer the same range of products. Where possible, every supplier tries to market its products as “specialities” and overall market transparency is low. Logistics and administration make up a high proportion of total costs.

The World Chemical Exchange Open for Trading at ChemC

Home | Exchange Floor | Commodities Floor | Corporate Trading Rooms | Market News | Memb

Welcome | World Chemical Exchange Overview | Find Out More | System Requirements |

Log in to the World Chemical Exchange

ExchangeWatch

Selected Categories	Sells	Buys
Agrochemicals	12	2
Basic Industrial Chemicals	101	63
Fine and Specialty Chemicals	154	30
Industrial and Specialty Gases	9	6
Petrochemicals	16	9
Pharmaceuticals	36	8
Plastics and Polymers	108	25

Search the World Chemical Exchange for:

Updated: 20:30 04 Mar 2001

Welcome New Members

Buyers and sellers of chemicals, plastics, and industrial gases -- from all over the world -- are converging on the leading Internet exchange.

Fig. 5.8 ChemConnect's online marketplace.

Early steps taken into e-markets have raised high expectations. In test procurements, global player BASF has claimed 10% lower purchase prices for raw materials and up to 40% lower costs for indirect goods. In addition to product cost savings, e-markets were also expected to reduce process costs in the Chemical Industry by 2–3% of sales, and a combined potential to reduce total costs by 10–15% has been predicted.

... but early independents have not thrived

During the year 2000 not a day has passed without reports of e-commerce activities in the Chemical Industry. At one point more than 50 marketplaces had emerged to bid for a share in the US\$1.7 trillion worldwide chemical market, whose online volume could soon exceed US\$100 billion.

The first entrants into the online market were independents such as Chemdex/Ventro, eChemicals (ICG), ChemConnect, CheMatch and Chemunity. As a quick indicator to what happened, consider the fate of the first three. Chemdex was shut down in December 2000. eChemicals has discontinued operations in January 2001 with its assets sold (for a humiliating US\$5 million) to Aspen Technologies. And ChemConnect has made the timely switch from the “independent” into the “consortia” camp in its equity round in March 2000, taking in 20 chemical and plastics industry companies as investors and charter members. The other two companies, CheMatch and Chemunity, can also hardly be considered as thriving independent exchanges.

The needs of an ordinary company

Before analyzing the developments in more detail let us look at the needs and e-commerce strategy of a typical company in the industry. In the fall of 2000 Dow Chemical described its differentiated online strategy through six core ingredients:

- *MyAccount@Dow* for direct online sales. It allows customers to configure their online orders and purchases and can either fulfil orders directly or divert small orders to dealers and distributors.

- *Elemica* for contractual chemical buying and selling.
- *Omnexus* for contract plastics sales.
- *ChemConnect* for spot buying and selling.
- *TradeRanger* for procurement of maintenance, repair and operating goods (MRO).
- *SciQuest* for laboratory supplies.

As over 90% of all Dow's business is done on a contractual basis, Elemica and Omnexus are strategically more important than ChemConnect, even though Dow has been an early investor in ChemConnect. With improved liquidity the share of spot markets, such as ChemConnect, could eventually increase to over 20% of business, but these changes of habit are notoriously slow.

A tale of power plays and business models

A sector characterized by such large conglomerates as the chemical industry is structurally unaccommodating to independent players. No e-market can be successful in this industry without the backing of the large multinationals and such backing comes at a price. Not surprisingly, trading volumes of independent players have remained disappointing.

Another strong barrier for independents was the abovementioned practice of long-term contractual agreements. **ChemConnect** (and its Worldwide Chemical Exchange, WCE), while boasting 7000 members from over 100 countries and seasoned industry executives, offers primarily auction-based trading for a wide range of chemicals and plastics. And its closest competitor, **Che-Match**, while also claiming 425 member companies from 34 countries, focuses on spot trading for bulk chemicals. Although these models offer value, they have so far not managed to surpass 1% of the business volume even for "heavy" users, such as Dow Chemicals. The core need of the industry consists, instead, of a platform that would enable the seamless electronic trade between a small number of large players, linking their internal systems.

New consortia-led exchanges

The two factors led to the launch of different types of e-markets. **Elemica** was founded in August 2000 by eight industry leaders: Autofina, BASF, Bayer, BP, Dow Chemical, DuPont, Rohm and Haas as well as Shell. In the following months many more have invested and pledged to participate, including the Japanese heavyweights Mitsubishi Chemicals, Mitsui Chemicals and Sumitomo Chemicals. Although Elemica was still not fully operational by mid 2001, its focus on enabling contractual agreements between its members and presumably large volume commitments have secured the company a prime spot among e-markets expected to lead the industry. **Envera**, a smaller competing site, has even created the term *b4b* commerce to emphasize its focus on contractual support between companies. **Omnexus** has a similar business model for plastics. As might be expected, all these players and their member companies are active drivers of the *Chemical Industry Data Exchange* (CIDX), an initiative to develop common XML standards for the chemical industry.

Commerce in indirect goods is covered by companies such as **TradeRanger**, a procurement e-marketplace for petrochemicals as well as for the upstream and downstream oil and gas industry. The goods offered include hoses and pumps, safety equipment and apparel as well as electrical equipment. This company has good chances of success, as it addresses an important need and is also backed by 14 industry players, whose combined annual procurement volume is around US\$125 billion.

The future remains challenging

The chemical industry is far from having established an e-market model to reap the full benefits of B2B e-commerce. When compared with the much riper energy industry, transaction volumes are very small and business models immature. It will be interesting to follow the fate of players such as ChemConnect, Elemica and TradeRanger. It has become clear, however, that the giants are systematically eradicating the unfortunate start-up marketplaces that have ventured into their sector.

SEARCHLIGHT 15: THE STEEL INDUSTRY – UNLIKELY EARLY MOVERS

The steel industry was one of the first to embrace electronic marketplaces. MetalSite and e-STEEL are two market leaders that offer a broad range of B2B services. This development has been unusual in two respects: Steel had been almost a synonym for the slow moving “old economy.” And strategic investors in steel e-markets had come primarily from the sell-side, for which exchange-type markets also bear inherent risks. Following the general trend, the industry has proceeded towards building private marketplaces, but mature models have not yet evolved.

The steel industry is well suited to be served by electronic marketplaces

The steel industry is characterized by a complex value chain. Numerous intermediaries exist both between raw materials suppliers and producers, such as steel mills, and between this group and their buyers, such as the Automotive Industry. Despite extensive contractual relationships with large end users, intermediaries and processors continue to be the biggest customer group of steel producers. The industry generates a large variety of products, involving various sizes, grades and finishes. These create high transaction costs in the sector. It is against this background that two leading electronic market places have emerged in the US: MetalSite and e-STEEL.

MetalSite – The steel marketplace pioneer

MetalSite was the first electronic market place for the Steel Industry and it created the capability for complete transaction processing over the Internet. Producers Weirton Steel, LTV and Steel Dynamics founded the company in 1998, with the initial goal of auctioning excess inventory and secondary goods. Other partners have been admitted later, including producer Bethlehem Steel and distributor Ryerson Tull, while Weirton has sold parts of its stake at an attractive valuation to ICG in late 1999. MetalSite is headquartered in Pittsburgh, Pennsylvania. By early 2001 over 100 companies in the industry were market-

ing their goods to thousands of buyers through the site. At that time Metalsite had “rightsized” its staff to around 100 employees.

MetalSite has a strong sell side emphasis and offers the “MetalSite Catalogue” for transactions. By entering requirement profiles, buyers can search for and order products electronically. Bids for listed products can be submitted either by auction or through direct requests for quotes. Further to the product catalogue in which volumes and prices are quoted in real time, sellers can also create their own auctions for marketing.

MetalSite earns income on transaction fees and by offering information in co-operation with publishers of specialist magazines for the Metal Industry. A user only pays for the services that he actually uses. MetalSite also provides logistics services for buyers and sellers and a “MetalSite Purchasing Card” is designed to facilitate credit checks, payments processing and granting of credit to buyers.

MetalSite has been actively extending its business. It has started to deal in scrap via ScrapSite.com. In conjunction with i2 the company has also begun to offer collaborative planning solutions, allowing participants to reduce overall inventory.

MetalSite is claiming to complete over 6,000 transactions per month. In the year 2000 it has grown its buyer base by over 300%, offered 2.2 million tons of steel, closed more than 50,000 sales orders and conducted over 100,000 auctions.

e-STEEL: an industry challenger

e-STEEL, by contrast, had been founded in 1999 by a group of independent investors, including Goldman Sachs, Kleiner Perkins and Bessemer Venture Partners, although industry heavyweights, such as US Steel, have also joined. e-STEEL’s business model focuses more on enabling private commerce between players. “e-STEEL exchange” enables buyers to make direct inquiries about required products to sellers and, conversely, sellers are able to offer their products to potential buyers.

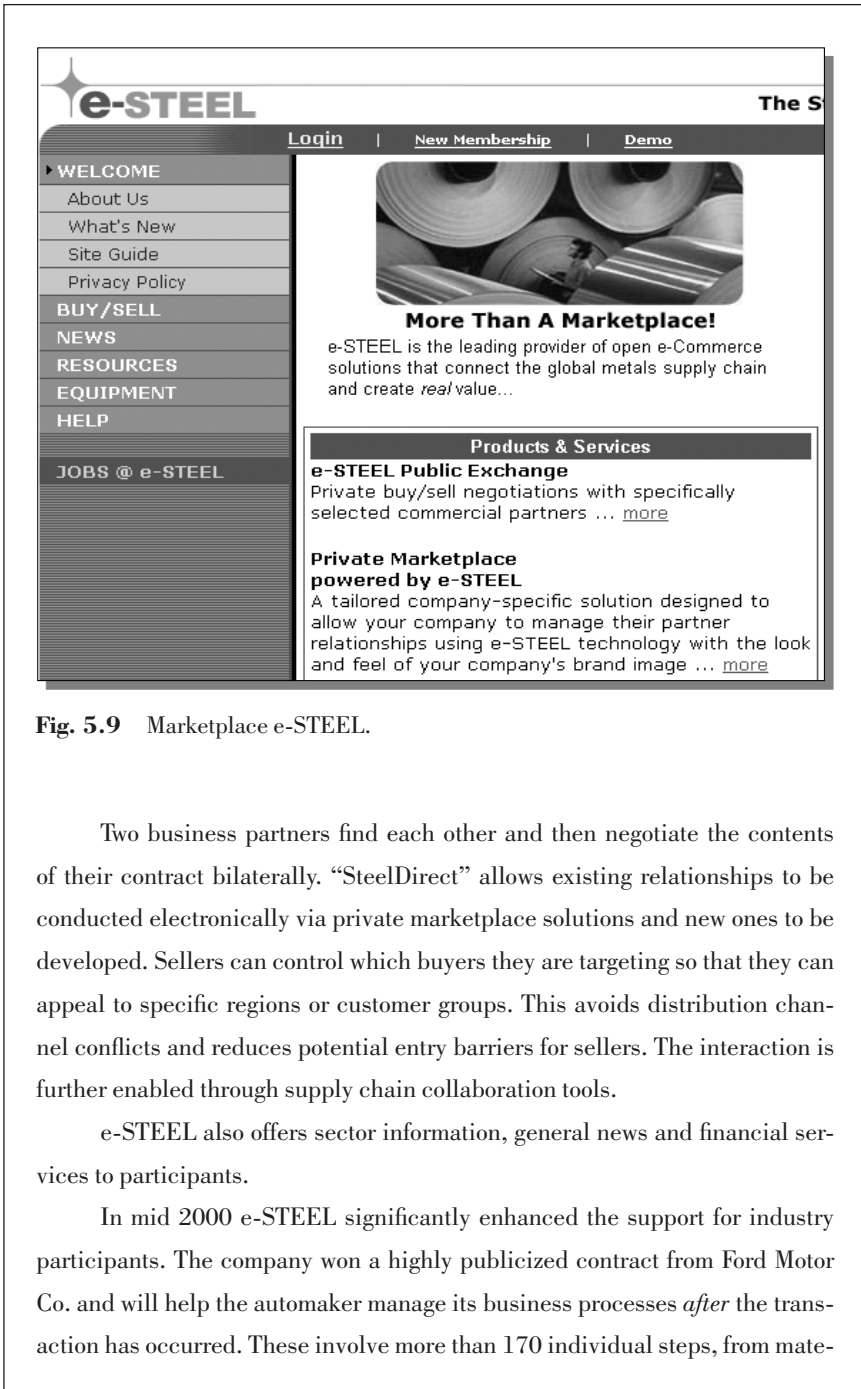


Fig. 5.9 Marketplace e-STEEL.

Two business partners find each other and then negotiate the contents of their contract bilaterally. “SteelDirect” allows existing relationships to be conducted electronically via private marketplace solutions and new ones to be developed. Sellers can control which buyers they are targeting so that they can appeal to specific regions or customer groups. This avoids distribution channel conflicts and reduces potential entry barriers for sellers. The interaction is further enabled through supply chain collaboration tools.

e-STEEL also offers sector information, general news and financial services to participants.

In mid 2000 e-STEEL significantly enhanced the support for industry participants. The company won a highly publicized contract from Ford Motor Co. and will help the automaker manage its business processes *after* the transaction has occurred. These involve more than 170 individual steps, from mate-

rial and financial information to logistics flow and claim management. Ford buys nearly 5 million tons of steel and steel-related products annually.

In order to speed up time to profitability e-STEEL has also started to build private marketplaces for buyers and sellers of steel. BHP Steel, its first customer in this space, has launched a marketplace in early 2001. e-STEEL receives annual licensing fees as well as upfront deployment and professional services fees in these projects.

Marketplaces aim to put pressure on existing intermediaries and to increase market liquidity and transparency

Both MetalSite and e-STEEL earn up to 1% in transaction fees borne by the seller. By contrast, traditional intermediaries took five to ten percent of the transaction value.

Beyond simple purchase cost reduction, the market places offer to improve production and inventory control by optimising information flows and providing manufacturers with access to customer groups, whom – for marketing or cost reasons – they might not have been able to serve thus far.

Electronic marketplaces are expected to see increased activity as commodity markets, particularly for raw materials or semi-finished goods, such as hot-rolled sheet metals. The range of services of the traditional intermediaries will need to develop to keep their offer competitive.

Large steel producers develop their own private marketplaces

Several other steel marketplaces, such as Steelscreen.com, Metalspectrum, Global Steel Exchange and more, have sprung up around the globe. The largest challenge to MetalSite and e-STEEL will, however, come from the private marketplaces that steel makers around the world are starting to install.

As discussed in Chapter 6 and in Insert 10.1: “Suppliers – at the mercy of e-markets,” there is a strong incentive for the supply side of markets to develop private sell-side e-commerce activities. The developments in steel have been slowed down by a terrible second half of the year 2000 for the industry. On the

other hand, the sector is used to planning for the long term and knows it cannot afford to neglect e-commerce.

Besides e-STEEL, other public exchange companies, such as B-Steel, CoreMarkets and Metals Suppliers Online, are earning money by helping steel companies develop their own e-commerce platforms. Weirton Steel, Bethlehem Steel and others are aggressively moving forward with their own sites.

Minimills, the business innovators of the eighties, have so far been slow to adopt the Internet. Nucor, the largest operator in the US, has only done selective sales through the exchanges. Its private marketplaces for bar mills and later for flat-rolled mills, however, are expected to come on-line during the course of 2001.

Despite early moves the landscape is still immature

Overall, the steel industry has not yet found the recipe to best leverage electronic platforms. MetalSite and e-STEEL have built strong positions and could leverage those further by linking to buy-side marketplaces, such as automotive exchanges. It is, however, still too early to judge the potential impact of private marketplaces. The promised cost savings and the dramatically improved customer service have yet to materialize.

**SEARCHLIGHT 16: THE TELECOMMUNICATIONS
SECTOR – EXCHANGING THE ULTIMATE DIGITAL
COMMODITY**

Telecommunications is among the most obvious sectors for electronic markets. Bandwidth is a digital commodity: As such it does not have to be transported physically and can be traded between competitors. This trade is being facilitated by specialized e-markets, such as Arbinet-theXchange, Band-X and RateX-change, as well as broader commodity exchanges, such as Enron. While these marketplaces are successful in further commoditizing telecom bandwidth, they could well become the first victims of this development.

Rapid evolution

The telecommunication industry at large has spurred the emergence of several types of electronic marketplaces. To date, they have focused on providing four distinct types of offerings:

- **Network infrastructure** B2B marketplaces, as provided by Telcobuy.com, Cisco Systems and Nortel Networks.
- **Used equipment and parts** marketplaces, as offered by Telecomfinders, PowerSourceOnline and SellmyIT.com.
- **Telecom Services** marketplaces, as provided by Demandline and Simplexity.
- **Bandwidth** marketplaces, arguably the most interesting of all, set up by companies such as Arbinetthexchange, Band-X, and RateXchange.

In this searchlight we focus on this last type of marketplaces (bandwidth).

Global interactions characterize the Telecom Services industry

Providing telecommunications services today requires the coordination of a

RateXchange Services

- Trading Services
 - RateXchange Trading System (RTS)
 - RTS Snapshot
 - Become a Participant
 - Participant Login
 - Marketplaces
 - Private Label Exchanges
- Consulting Services
 - Commodity/Risk Management
 - Analytics
- Information Services
 - Pricing Information
 - Market Research
 - Industry News
- Market Data
- Pricing Information
- Market Research
- Route Maps
- RateXchange in the News
- Industry News
- Community
 - FAQ's
 - Interviews
 - Education
 - Why Trade Bandwidth?
 - How to Shift to Trading
 - About Us

RATExCHANGE™
Maximize Your Assets.

MARKET DATA
NY-London DS3: USD/month, 1-yr contract

Capacity	City Pair	Markets	Sell Price DSO	Term	Sell MRC	Start Date
DS3	LA-HK		0.65038	12M	115,001	22-Feb-01
STM-1	LON-NY		0.00224	12M	16,202	1-Mar-01

COMMUNITY
RateXchange CEO Jon Merriman: [Read the full interview.](#)

Q: Why trade bandwidth?
A: The competitive impact of deregulation is among **many reasons** to trade bandwidth online. Read more [frequently asked questions](#), or [talk to us](#).

RATExCHANGE TRADING SYSTEM
Click the map below to see some of the routes traded on RTS.

Fig. 5.10 RateXchange telecom marketplace.

large number of relationships. A typical telephone call from London to New York, for example, might involve the following companies:

- British Telecom: Network operator for local call connection in London
- One.Tel: A service provider of long-distance calls in the UK
- Global Crossing: Operator of transatlantic cable
- AT&T: A service provider for long-distance calls in the US
- Verizon: The operator of the local network in New York.

If the customer has a mobile phone, or if the service provider is a pure reseller, call handling can become even more complex. Also, each call triggers a new combination of suppliers.

The networks of the various **service providers**, such as MCI Worldcom, British Telecom or NTT, are connected to those of other service providers for both voice and data services. The agreements between service providers for connection of their networks (“interconnection”) are negotiated bilaterally, based on worldwide technical transmission standards. Each service provider has certain transmission capacities on specific links that are specified by its network infrastructure. Missing links or capacities of other service providers are bought in to provide the required services for its customers. Some service providers (“resellers”) offer services without owning any network infrastructure. An example is Virgin Mobile, reselling services in the UK and Australia, with plans to expand into the US.

Telco marketplaces simplify relationships, utilize excess capacity, and reduce transaction costs

In this environment **telecom marketplaces** strive to simplify bilateral negotiations among the various service providers. Put in simple terms, specific technical capacities are traded on these marketplaces on specific links for specific times. This involves both voice “minutes” and data “bandwidth.” The market places bring together service providers with either capacities or requirements.

In order for transactions to be possible at all, the supplier’s network must be connected to the seller’s – the “logistics” of telecoms. Most telecom marketplaces enable this through so-called “co-location” premises, in which all market participants connect their lines to the infrastructure of the marketplace operator. When a transaction occurs, the networks of the supplier and the customer are interconnected. This avoids delays between the conclusion of the contract and the operation of the services. Alternatively service providers can connect their network infrastructures directly, for instance in so-called PoPs of data networks.

Telecom market places represent a “pure play” striving to increase transaction efficiency. They are suitable for “spot” purchases, but can also enable longer term contracts. In particular they enable anonymous trading. This allows suppliers to sell excess capacity without affecting the price structure of their existing business. This is an important incentive as many carriers have more than 30% excess capacity in parts of their network.

Telecom market places offer significant transaction cost savings. In particular the increased speed of negotiation creates a rapid utilization of free capacity. Before e-markets started to operate, negotiation and implementation of interconnection agreements could take between two and three months, and negotiation costs could reach up to 15% of the total value of a deal.

The global market for telephony bandwidth in 2000 was estimated to exceed US\$700 billion.

Market participants trade minutes and bandwidth

The **suppliers** at telecom marketplaces are mainly large carriers such as British Telecom, MCI Worldcom, NTT or Deutsche Telekom, who operate their own networks. Vendors also include companies providing network infrastructure for other carriers, so-called “carrier’s carriers,” such as Global Crossing or GTS. **Customers** can be other carriers, but more often consist of Internet service providers, local service providers and resellers who acquire their capacity on the open market. Voice capacity is traded on “minute exchanges,” which have become significant distribution channels for large carriers. Differentiated prices

reflect various service quality agreements. Capacity for data traffic is traded on “bandwidth exchanges.” IP (Internet protocol) capacity is a particularly fast growing segment of data exchanges.

The declared objective of many of the marketplaces is to start trading infrastructure services in addition to capacity. These could include co-location services, data center space or “dark fibre,” i.e. optical fibre lines that have not yet been commissioned on specific links. The heterogeneous nature of such services may restrict many marketplaces to a mere facilitator role: They might initiate contacts between trading partners without taking on the pricing and implementation of transactions. It is doubtful that these models are viable in the long term.

Lack of profits renders the early leaders highly vulnerable

The first important telecommunications marketplaces were Arbinet, Band-X and RateXchange. All three receive either a fixed commission for each successful transaction or a percentage of trade values. All of them are, however, struggling to reach profitability.

Arbinet is a market place with its own infrastructure for exchanging international voice telephony capacity, i.e., a “switch-based clearing network.” It was founded in 1994 and at the end of 2000 employed 90 people in New York, Tokyo and London.

As a neutral intermediary market place, Arbinet arranges capacity and provision for US and international long-distance calls. Market participants can negotiate anonymously, and Arbinet automates the interconnection of buyers and sellers through its own exchange. The company also provides invoicing and payment between trading partners as well as quality control of supplier networks.

By April 2001 Arbinet claimed 130 members, trading 1.2 billion minutes on an annualized basis. The exchange was processing 300,000 trades per day. Assuming a price of 10 cents/minute and a 7% commission fee, such impressive sounding volumes would still only translate into net revenues below US\$10 million per year.

Band-X was founded in London in 1997 and enables anonymous trading for international voice telephony and IP capacity. Its offerings include a clearing exchange for switched minutes, a neutral trading forum for international wholesale circuits, a request-for-quote service, co-location facilities and digital coordination services. Band-X operates worldwide with offices all over Europe and the US, Hongkong, India and Brazil. In April 2001 the company claimed an international “membership” of over 14,000 companies. It stated its daily trading volume as 1 million minutes per day, which would put it, however, only at about a third of the size of Arbinet.

RateXchange focuses more on bandwidth transactions in its RateXchange Trading System (RTS). While the company claims 6,000 “members,” most of these only access its information services. The actual “major market participants” in early 2001 only amounted to about 20 carriers, with 120 registered users overall. After the acquisition of Xpit.com in early 2001 the company also launched the RateXchange Futures System (RFS), which allows users to trade bandwidth futures globally. The derivative market is a natural extension of the information services and could potentially acquire a larger significance than the underlying bandwidth market.

Total revenues for Q1 2001 were a paltry US\$340,000, with a net loss of 7.6 millions. With cash reserves of only US\$8 million, RateXchange is facing obvious challenges.

Such a lack of profitability of the current marketplaces has not deterred new entrants. Most significantly **Enron**, the 800-pound gorilla in Web-based commodity exchanges, has entered the market with a strong offering in broadband services, including a marketplace for bandwidth and risk management services (see also Searchlight 9).

Even if volumes increase, telecom marketplaces must rethink business models

Telecoms markets will continue to grow, driven primarily by data traffic. Efficient trading in the latter requires a clearer classification of the service levels offered, similar to the common standards in voice traffic. This will presumably

be resolved by the end of 2001. As soon as these standards are in place, however, price competition will only intensify. While marketplaces will perform a critical function for the sector, they will themselves be hit by the increasing commoditization of products. Even high volumes might not be able to offset for this shortcoming of the basic business model. Ultimately, a wider range of services will be required to render these marketplaces attractive as a business.

SEARCHLIGHT 17: THE FINANCIAL SERVICES SECTOR – THE SECOND ELECTRONIC REVOLUTION

The emergence of e-markets has had a profound effect on the financial services industry. Business models which have remained relatively static for many years have been exposed to radical change, leading established companies to aggressively pursue e-market initiatives, and opening the playing field to a host of new entrants to challenge the dominance of the established firms. Financial intermediaries that were once secure are in danger of being disintermediated. Companies that once focused on specific product offerings are finding that they can, and must, participate in marketplaces that cater to specific customers – and that their solutions must be integrated with those of others to provide the whole solution. Established financial services companies are finding that they must actively participate in new e-markets to prevent themselves from being sidelined by new entrants who have suddenly been empowered by those marketplaces. In doing so, they are finding that what was originally a defensive measure actually opens significant opportunities for growing their business. (Note: In order to focus our discussion we do not cover the insurance industry in the analysis that follows).

There are five key e-market roles that financial services companies are playing at present (see Fig. 5.11).

Enablers of industry e-markets

Virtually every e-market has some financial component to it, whether it is credit

<i>Category</i>	<i>Description</i>	<i>Examples</i>
Enablers of Industry e-Markets	• Providing financial services to enable other e-markets	• Chase • Barclays • Citigroup
Content/Analytics Providers to Financial e-Markets	• Providing ASP-based content and analytical tools to other financial services offerings	• Tradeworx • Algorithmics • Bloomberg
Exchanges for Financial Products	• Exchanges to trade financial products such as equities, bonds, currency	• Archipelago • BrokerTec • Goldman Sachs
e-Finance Markets for B2B Services	• Marketplaces for buyers and seller of complex financial products	• 401kexchange • Search401K • Fidelity
e-Finance Markets for Corporate Customers	• Marketplaces providing whole solutions targeted at the corporate end-users of financial services	• TreasuryConnect • PlanSponsor.com

Fig. 5.11 E-market categories in financial services.

services or payment processing. Established financial services firms recognized very early that they had a role to play in these e-markets. **Chase**, for example, offers e-Financial Services (sm) to provide a menu of credit, invoicing, accounting and payment processing service modules to e-marketplaces. These services are nothing new – they are simply an extension of the existing services an institution like Chase offers its corporate clients, but tailored for delivery over the Internet and integration with e-marketplaces.

Content/analytics providers to financial e-markets

Content and analytics providers have traditionally had a strong position in the financial services world. Most people are familiar with the ubiquitous Bloomberg terminals on Wall Street trading desks, and there are many lesser known, yet critical, content and analytics providers throughout the industry. These systems have in the past been based on a closed architecture, with dedicated, difficult to learn terminals being required on each traders’ or analysts’ desk.

The rise of e-markets has created new opportunities for both emerging (for example, **Tradeworx**) and established (such as **Thomson Financial** and **Bloomberg**) companies to reach a greater and more diverse user base. The result has been an increased democratization of the financial services industry, where non-specialists have access to tools and data that were only available in exclusive settings. Whereas the dedicated platforms, with their high costs and learning curves, limited the number of people who had access to specific tools, the new systems, which typically employ an ASP service model, are enabling people to gain access to a greater range of analytics and content, whenever they need it. This is not only benefiting a new group of users who did not have access to these tools before. The very traders who were using the dedicated systems are finding that the ASP-based tools provide them with the flexibility to use a greater range of data and analytical tools, and to cut across the artificial boundaries created by dedicated systems.

A number of companies are targeting institutional users with sophisticated tools. For example, **Algorithmics** is a leading developer of enterprise risk management solutions that has started offering financial institutions an ASP version of its market, credit and liquidity risk solutions for both their own internal use, and for use by the institution's clients. Similarly, **Tradeworx**, founded in February 1999, has developed powerful analytical tools that can be delivered via an ASP model through business partners to end consumers (B2B2C model through partners like **CNBC.com** and **CBS Marketwatch**), directly to institutions for use by financial advisors in providing services to their clients, and directly for internal use by the institutions themselves. In doing so, they are providing unprecedented levels of information and analytics to directly enhance the customer experience, to deepen the relationship of financial intermediaries with their clients, and the effectiveness of institutions themselves. These benefits simply could not be achieved in a flexible, robust and cost-effective manner with previous technology.

Exchanges for financial products

Over the past several years, a plethora of electronic trading platforms (Al-

ternative Trading Systems/Electronic Communication Networks (ECN)) have emerged, touching on a wide range of financial products from equities (ECN's such as **Archipelago** and **Island**) to foreign exchange to fixed income products. The systems focus on trading both new issues (for example, **OpenIPO** and **MuniAuction**, which provide an online underwriting/auction platform for new equity and municipal bond offerings, respectively) and the trading of existing products are addressed by a range of new and established players.

Although the most common and well-known electronic trading exchanges focus on equities, the trading of fixed income products presents a clear illustration of how trading exchanges are revolutionizing the broader financial services industry. The fixed income market is valued at US\$13.5 trillion market in the US alone, with daily turnover of over US\$500 billion. However, there are over 4 million distinct fixed income products on the market, compared to only several thousand equities. The large number of products and relative low volume with which each is traded has led to the creation of a manual and non-standardized trading process, with very limited liquidity and a lack of pricing and volume transparency. As a result, specialists in bond trading are typically required to perform the searching and negotiations to conduct transactions manually.

Emerging companies like **LimiTrader**, **BrokerTec**, **eSpeed** and **Tradebonds.com** have begun to address these challenges, each taking their own approach to the problems. While these firms focus on trading specific types of fixed income products, others, such as **MuniAuction**, focus on the auction of new bond issues – in this case, municipal bonds. At the same time, established firms such as **Goldman Sachs** and **Credit Suisse First Boston** have pioneered their own proprietary systems.

The anticipated outcome of these efforts is to make the fixed income market more transparent and efficient, and to increase liquidity by allowing more buyers and sellers to participate in the marketplaces.

E-finance markets for B2B services

Complex financial services have traditionally been dominated by sellers. Because of the complexity and sophistication of the products, and the level of

in-depth knowledge required to make intelligent decisions, buyers have had a difficult time comparing competing service offerings from multiple companies. Decisions were based on brand recognition, convenience and existing relationships, rather than more tangible and comparable features like price or performance. Even relatively simple products like mutual funds present significant challenges to the user who wants to find the best one for their financial needs.

The trading exchanges described above cannot be used to deal with these more complex products. Instead, e-marketplaces that allow sophisticated searching and matching are being created to allow buyers and sellers to find the right match for each other.

An example of an area that has seen a significant use of e-marketplaces is 401(k) (tax-deferred defined contribution pension) in the US. Over US\$1.7 trillion in assets are held in these pension plans, which are typically offered by corporations to their employees. A typical 401(k) plan offers a mixture of record keeping and recording services for the corporation, and a wide range of investing options for the employee. As a result, the number of options that are available in each plan, and hence the pricing of the plans, are quite numerous and complex. Before the advent of e-marketplaces, the only way to compare plans was to request bids from different companies. As over 85% of plans are sold through financial intermediaries, this is actually quite difficult to do. In addition, this process inherently favors large providers, such as **Manulife** and **Fidelity**, over smaller, lesser known providers.

Several exchanges have been created to improve the price and option transparency in 401(k) pension plans. **401kexchange.com**, **401kconnect** and **Search401k.com** are all targeting this market with a reverse auction marketplace. They allow companies to search through a database of providers and intermediaries, perform research on particular providers, their plan features and performance/service histories, and issue RFPs to participating suppliers. Unlike many e-markets, all three of these marketplaces reinforce the role of the intermediary, and are often targeted at them rather than the corporate customer. The benefits of the marketplaces are that they allow companies to compare the costs, benefits and options of different plans more seamlessly and with less ef-

fort than the manual system. In addition, smaller providers have greater exposure in these settings, enabling them to generate business they otherwise would not receive. Large established providers have felt that they have less to gain from these services, and have been less willing to participate. Instead, many of them are developing their own proprietary offerings to market their products independently. **Fidelity**, for example, has developed its Adviser Express site to provide financial advisors with all of the plan details they require without going through a more cumbersome telephone or mail process.

E-finance markets for end customers

Perhaps the most significant implication of the e-markets that have emerged in Financial Services is that the boundaries that have traditionally existed are being broken down, and new services reassembling these components are being created. This latest wave in Financial Services e-markets is targeted towards providing solutions specifically focused on the end-customer – CFOs, for example, or Purchasing Managers – pulling together various products that were once isolated in silos due to expertise, channel and cost barriers.

Examples of emerging e-markets in this category include TreasuryConnect and PlanSponsor.com, focusing on corporate treasury officers and pension plan sponsors/participants, respectively.

Financial services companies have been on the cutting edge of the digital storm, quickly adopting new technologies and business models as they emerge. Both established and emerging companies are creating new types of value for customers, transforming a once conservative and stodgy industry into a hotbed of innovation. Whereas the initial innovation was in online brokerages, e-markets are enabling a new wave of greater value creating innovation to occur. Established companies use e-markets to develop new proprietary offerings that cut across traditional product boundaries for their clients, while insurgents into the Financial Services arena use the e-markets to extend their reach and build agile partner networks to deliver products and services that would be impossible in the traditional setting. The end-result as this trend continues is that customers will find more personalized, customized and optimized solutions to meet their needs.

Overview of selected financial service sector sites

Offering	Description
401kExchange.com	A four-year-old Web-based e-market B2B exchange resource for employer pension plans linking companies finance departments with pension plan service providers.
Commercial Finance Online (www.cfol.com)	Provides automated methods for securing business capital.
Currenex	An independent multi-bank Web-based foreign exchange service that gives CFOs, treasurers and investment fund managers access to the US\$1.5 trillion a day global foreign exchange market.
LendX	An online B2B marketplace for streamlined corporate lending as a one-stop financing solution for the US\$1 trillion corporate lending market providing value – added information analytical tools and services for both lenders and borrowers.
Ultraprise Corporation	Provides B2B solutions for the financial services industry, with its flagship offering being a secure, real time trading exchange for the mortgage secondary market, bringing together banks, investors, mortgage companies...
OneCore.com	Provides financial services, focusing on small businesses and entrepreneurs.
MuniAuction.	Auctions of new bond issues.
Integral Corporation	Provides a B2B e-commerce portal for capital markets providing fund managers to trade, process transactions, obtain independent valuations and for the financial institutions to into increase their reach to a selected audience.
Loanfirst.com	Connects auto dealers and lending institutions to enable faster loan decisions. The company is able to deliver 30 second loan approvals from lenders to dealers and provides lenders direct and cost-effective access to the lucrative and fragmented automotive dealer market.
Financial Settlement Matrix.com (FSMx)	Citibank, i2 Technologies and Wells Fargo & Co, provides eMarketplaces' buyers and sellers access to a complete range of online financial services including payment services, credit and risk management services.
eXXactly.com	Provides a B2B financial portal servicing offshore IFA organizations.
The Exchange	Enables independent financial advisors to obtain quotations and transact with product providers.
Click2Financial	Offers a full array of financial services including equipment leasing programs, on-line loan services, debt consolidation...

Sell-side Portals Push Customer Centricity

SELL-SIDE PORTALS are created by suppliers wanting to influence the buying of their products (and services) more directly. They aim to reach forward in the activity chain and exert influence over sales processes and customer relationships previously inaccessible to them. In doing so they seek to create competitive advantage for their owners, the producers. Given this aim they are increasingly private markets. A focus on “helping my customer to sell to his customer” is complimented by providing resources to help businesses run more effectively. Innovation in this area is moving towards a new type of digital franchising.

NAVIGATOR THROUGH CHAPTER 6

Sell-side portals extend a seller’s influence along the value chain

Sell-side portals take their example from industries in which producers have succeeded in extending their influence all the way along the value chain to deal direct with end users (e.g. **Dell** in computers). Frustrated by a “buy-side bias” some producers are establishing their own sales oriented portals. They do not necessarily seek to open a channel direct to the end consumer, but instead provide benefits to their customers that cement the supplier/buyer relationship.

Private marketplace models are on the rise

To some incumbent players there is little incentive to increase price and service transparency for the customer by working with their competitors. They are pursuing private marketplace models to emphasize their own sales, marketing and

customer support (e.g. **Cisco**). Others, particularly new entrants, see a need to provide whole solutions that use more open participation models.

Innovation around customer needs creates “digital franchises”

Ultimately suppliers are most interested in providing direct help in enabling their business customers to sell their products. Innovative B2B2C sales solutions are emerging that are becoming a new type of “digital franchising” (e.g. **AMS** and **e-News**).

SELL-SIDE PORTALS EXTEND A SELLER’S INFLUENCE ALONG THE VALUE CHAIN

Sell-side portals develop for two distinct, but interlinked reasons. Both relate to a desire, and need, to break through the complexity that characterizes business relationships as we discussed in Chapter 2. For many producers the of assets and competencies that they have combine with the economic structure of their business to restrict the number of steps further along the activity chain that they should become involved in. Some sell-side portals have radically challenged this perspective by exploiting the Internet to reduce massively their costs of interaction with customers further along activity chain. In doing so they have reconfigured the activity chain to their own advantage. They take as their example “value chain visionaries” such as Dell, in the computer industry. It is among the clearest examples of a sell-side portal that has grown from this set of motivations and is our first searchlight.

Another set of motives for creating sell-side portals comes from the perceived failings of e-procurement platforms and intermediary markets. There is increasing concern among suppliers that they are under-represented in terms of the full range of products and services that they can offer for sale. In some cases this is caused by simple capacity limits of the relevant platforms, in others by the inability of already highly sophisticated, but transaction focused software to handle the next level of complexity that a supplier may desire. Some products cannot be adequately described across all their potential pur-

chase parameters within the confines of standardized architecture. This applies both to complex industrial products (e.g. precision engineered components) and to basic products with complex ingredients (e.g. food ingredients, where precise chemical compositions may distinguish sellers products). Interestingly, the desire by suppliers not to be constrained in what they can offer on standard marketplace platforms has spawned a new set of software companies, such as Trigo and Comergent, that aim to link sell-side portals more effectively to procurement platforms and e-markets. We discuss an important potential effect of this trend, the creation of trading partner networks, in Chapter 7.

→ **Searchlight 18:** Dell – business process innovation (p. 204)

As our searchlight shows, Dell has created a competitively differentiated business model as a computer supplier by spotting an opportunity to alter the “traditional” value chain to its own benefit. Its advantage is driven from the end-to-end nature of its communication and influence along the chain. This end-to-end model does not necessarily suit all suppliers, particularly those in industries where resellers still have a valuable role to play. The computer industry itself, perhaps more in Europe than the US, exemplifies this.

Where a producer still sees value in having agents, distributors or resellers it can sensibly and valuably seek to facilitate their activities without trying to reach all the way to the end user. As we discussed in Part I, disintermediation is not the only game in town. Re-intermediation, or in this instance “revitalization”, of middle men in the value chain, can be appropriate and create value for end users in some instances. In Germany, major PC producer MaxData has been driven by this vision. It offers a “store in store” to 2500 resellers across Europe, allowing them to take orders electronically from their customers without bearing the cost of fully Web-enabling their own operations. To make the portal attractive to resellers, MaxData makes the products and services of several PC and peripherals manufacturers available to its users. This open approach contrasts strongly with a push towards more private marketplaces that is emerging in the US. An illustration of what a sell-side portal for PC distributors and resellers might offer is given in Fig. 6.1.

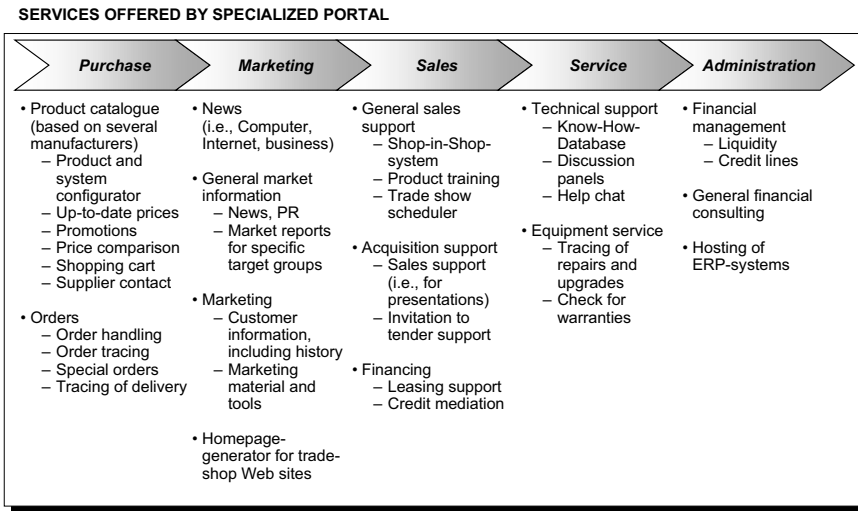


Fig. 6.1 A sell-side portal supports PC resellers' full business needs.

PRIVATE MARKETPLACE MODELS ARE ON THE RISE

As we have said, the motivation behind sell-side portals is essentially to create advantage and new value for the seller, or producer in a world in which e-markets currently favour buyers at the expense of sellers. For many players, the idea of co-operating with their competitors to provide greater transparency over levels of quality and service, potentially to their own disadvantage, makes no sense. Instead, they often focus on sales, marketing and customer support to their direct customers. “Helping my customer sell to and satisfy his customer” is the order of the day. A successful set of customers creates a successful supplier. Cisco is an excellent example of this.

→ **Searchlight 19:** Cisco – a customer service benchmark (p. 207)

Cisco’s approach is logical for established businesses. For newer businesses, particularly those conceived as start-ups, the approach has been to go beyond simply helping to drive the revenue line and help serve end customers needs. They extend into increasing the efficiency of general business processes of the intermediate customer. This “whole customer solution” approach is illustrated in the office products area. While making a strong product-oriented offer from their online stores, Staples aims to cover a broad set of needs that

may arise in businesses and offers its customers furniture, technology and even business services.

Sell-side portals offering a whole customer solution work well in highly supply-fragmented industries and the **catering** industry is a good example. It is structurally susceptible to the creation of sell-side portals, being extremely fragmented in both the US and Europe. Hundreds of thousands of small enterprises are involved in the sector, cumulatively creating a multi-billion dollar industry. The sector includes an amazing range of businesses: Hotels, restaurants, company canteens and caterers. Business numbers are dominated by small and medium-sized companies, many of which are owner operated “6×16’ers”, (i.e. they work sixteen hours a day, six days a week). From menu planning and purchasing through to supervision of cooking, “marketing” and administration – they do most of it themselves.

In these businesses, purchasing can be particularly time consuming. Most businesses maintain a large number of supplier relations: For example wholesalers in specific categories (drinks, deli, dairy, fruit and vegetables); furnishings suppliers; suppliers of consumables; butcher’s shops; equipment suppliers; bakeries and so on. Some of these supplier relationships can be bundled via major wholesalers, but for each supplier relationship, enquiries have to be made, sales visits arranged, orders placed, follow-ups carried out and invoices processed and paid. Just to add complexity, each supplier may work to a different set of standard business practices in terms of business order management and payment settlement. This is fertile ground for sell-side portals offering a whole customer solution. See Fig. 6.2 for potential elements of such an offer. In the UK, catering services giant Compass is developing a sell-side portal called caterexchange.com that aims to go live in late 2001.

Similar portals are being established in a number of other sectors, for example serving travel agents, electrical goods retailers, funeral directors, estate agents, insurance brokers and farmers. Many of these employ private marketplace models and have evolved from specific company initiatives aimed at purchase process facilitation. An interesting example here is the evolution of the activities of Fasson Roll, a producer of self-adhesive labels that sells its products to packaging companies and specialist label printers. Initially conceived as a way of helping Fasson Roll’s immediate customers purchase from

Type of Business	Purchasing	Production	Marketing/Sales	Administration
Restaurant	<ul style="list-style-type: none"> • Recipes • Suppliers • Special offers • New products 	<ul style="list-style-type: none"> • Stocking advice • Training „How to handle the kitchen“ 	<ul style="list-style-type: none"> • Product ideas • Trade show calendar • Menu recommendations • Nutrition facts 	<ul style="list-style-type: none"> • Links to Associations • Legal support
Up-scale Restaurant	<ul style="list-style-type: none"> • Customized shopping list • Recipes including evaluation of costs 	<ul style="list-style-type: none"> • Innovative ideas for preparation • Convenience products • Stocking advice 	<ul style="list-style-type: none"> • Menu design • Catering advice • Event marketing • Product ideas 	<ul style="list-style-type: none"> • Cost controlling • ERP software • Staff scheduling
Hotels	<ul style="list-style-type: none"> • Customized shopping-list 	<ul style="list-style-type: none"> • Kitchen requirements • Preparation planning • Control of quality 	<ul style="list-style-type: none"> • Convenience offers • Catering advice • Product ideas 	<ul style="list-style-type: none"> • Calculation • ERP software • Staff scheduling
Bakeries	<ul style="list-style-type: none"> • Customized shopping list 	<ul style="list-style-type: none"> • New technology applications advice • Planning tools 	<ul style="list-style-type: none"> • Convenience offers • Support for special promotions • Product ideas 	<ul style="list-style-type: none"> • Cost controlling • Product calculation
Office Canteens	<ul style="list-style-type: none"> • Special offers 		<ul style="list-style-type: none"> • Convenience offers 	<ul style="list-style-type: none"> • Calculation • Cost control

Fig. 6.2 Support for the food services sector through specialized information.

them more effectively, the company established a Web EDI product that automated much of the previously manual purchases. From these beginnings it has moved on to provide those using its FassonAdvantage service with near real time pricing and tracking information and customer-specific market, application and product information. It believes that these services significantly increase the loyalty of its own customers, as it helps them to do business more effectively with their customers.

A concrete working example of an open sell-side portal offering an extended “whole customer solution” in this space is Printnation, which has developed a leading sell-side portal for the graphics industry in the US. It demonstrates, however, the difficulties of being a neutral initiator of specialist portals. After initial success it was forced to reduce staff by 50% in early 2001 and has now been acquired by an “old world” player, Pitman.

INNOVATION AROUND CUSTOMER NEEDS CREATES “DIGITAL FRANCHISES”

One of the basic concepts underpinning sell-side portals – the provision of

centrally conceived tools and approaches to help with critical business processes, (particularly customer facing ones), for local implementation – is not a new one. Franchise operators in many retail service sectors have been following these principles for years. What is different now is the degree of central control inherent in the service offering, since a service platform has to be centrally created and delivered. Along with this central control comes an ability for a portal to assemble product/service bundles that address the needs of groups of end users more effectively than before. In previous models a supplier was by nature product focused, as they had to rely on a wholesaler and/or retailer to push their product through to end users and their focus was on getting product to the intermediary. Sell-side portals will enable (and require) suppliers to become more customer focussed as they enable offers to be made that address aggregated customer needs in a coherent way (see Fig. 6.3).

Also interestingly different from early franchise models is the potential effect on local competition and business. Large franchisers have traditionally driven locally owner-operated businesses to the wall by applying highly evolved and efficient business practices, particularly around effective customer acquisition and low operating costs. Sell-side portals executing “digital franchise” models potentially put power back into the hands of smaller busi-

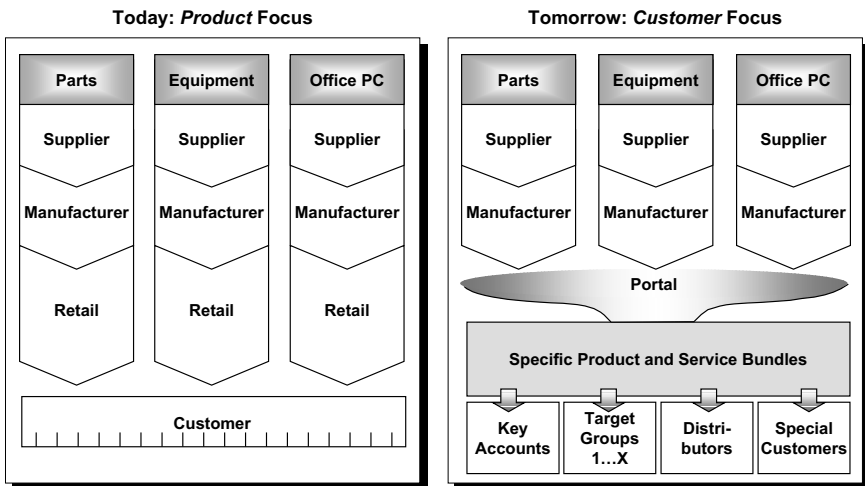


Fig. 6.3 Sell-side portals offer product and service bundles that meet their target groups’ specific requirements.

nesses by offering support tools that would normally only be available to much larger businesses. An interesting application of this theme is demonstrated by online magazine subscriptions portal e-news. Originally conceived as an independent start up, e-news is now owned by book retailer Barnes and Noble. It built a consumer-facing brand on the Web in order to sell subscriptions for a very wide range of competing publishers, executing a “B2B2C” business model. In doing so it is helping smaller publishers find virtual shelf space for titles that cannot provide adequate returns for retailers in physical stores and kiosks. It provides a service to smaller publishers, by helping them serve their customers.

→ **Searchlight 20:** eNews – serving your customer’s customer (p. 212)

A more extensive example in this space, that in fact serves both large and small customers, is European entertainment products wholesaler AMS. In working closely with its retailer customers in both the online and offline spaces it is putting into effect a series of digital franchise models.

→ **Searchlight 21:** AMS – ... to create “digital franchising” (p. 215)

As we have said, an area of critical emphasis for sell-side portals is in efficiency and effectiveness of marketing and new business development for their users. Their optimal focus is often in highly fragmented and localized markets sectors. We see some of them being at the forefront of a form of digital franchising: adopting and making more efficient the franchise concepts of the “analogue economy” (see Fig. 6.4). As with their precursors, they connect the advantages of systematic marketing approaches with the benefits of local presence and knowledge in execution, but move beyond them. They provide more flexibility to their users, at the extreme allowing every user to put together his own individual marketing program. In addition, unlike traditional franchisers, they may include competitors’ offers in the proposition that they make to their users.

Sell-side portals are still at an early stage of evolution and continue to face significant technical challenges as well as widely varying degrees of user adoption across different sectors. A need to exert some supply side influence over events that are unfolding in the e-market space is a powerful driver of behavior. We believe that to be successful in the long run, sell-side portals’ proposition must be to help create additional value for their users – by reach-

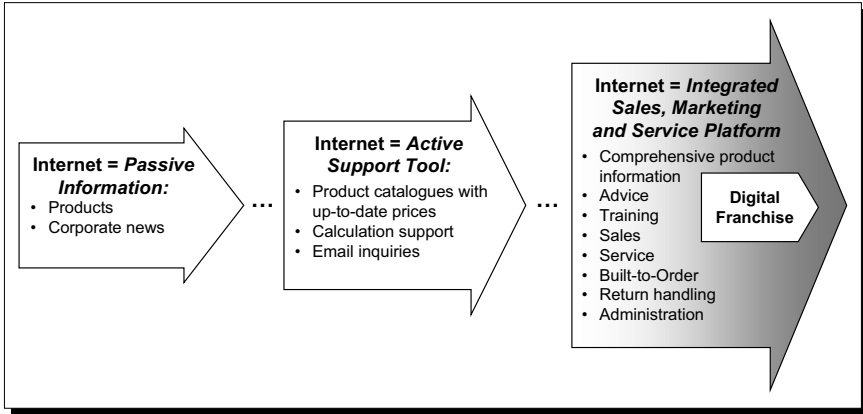


Fig. 6.4 Sell-side portals evolve towards a form of active digital franchising.

ing new customers, marketing products more effectively and building enduring customer relationships. This is a powerful reason for interested customers to use them: Mutual success is a good foundation for a business relationship. We expect to see existing players make concerted moves in this direction in a number of sectors. Many established businesses have forgotten that being truly customer focused is often what was at the core of their success. The winds of the digital storm are intensifying the need to rediscover this.

SEARCHLIGHT 18: DELL – BUSINESS PROCESS INNOVATION

Dell's direct selling and built-to-order production is one of the most successful examples of a sell-side portal. The company has succeeded in increasing customer value while at the same time reducing operational costs. Dell's Internet strategy has allowed it to win significant marketshare from competitors.

Dell is synonymous with a unique business model based on **direct sales** and **built-to-order production**. The company is using the systematic development of an integrated marketing, sales and service platform on the Internet in an attempt to satisfy as many of its customers' needs as possible. Dell's online success has been widely discussed in recent years, so we restrict the discussion here to the aspects that are important to us.

Founded in 1984, The Dell Computer Corporation is one of the world's largest, fastest growing, and most profitable computer manufacturers. Operating from a global footprint of production sites in the USA, Europe and Asia, Dell passes real-time production requirements to its suppliers. As a result of this real-time information exchange throughout the supply chain, Dell achieves an annual stock turn of 52 times and negative working capital. This level of performance gives Dell a considerably lower cost position than Compaq, its core competitor.

Target customers extend from consumers to large enterprises

Initially, Dell exclusively targeted the consumer PC market. This was soon extended to cover small businesses. In 1990, it invested in its own sales team and began to seek large enterprise customers. The Website reflects a clear segmentation and channeling of its business customer base by size of enterprise.

A wide range of customer needs are addressed

Satisfying customer needs at every stage of the transaction is a focal point. Customers need a broad range of **contextual information** about products, prices and possible configurations. Dell offers its customer groups, such as small offices, large companies and administrative bodies, specific storefronts that are tailored to their

likely needs. Point and click functions help users configure the product specifications they need. Online assistants can work from user's requirements statements to automatically select relevant components. Purchase price is transparent to the user at every stage, including any pre-negotiated discounts. A customized shop for large corporate customers enables IT departments to select and configure specific products that are compatible with their existing systems environment. Dell even offers an intranet-based store for specific large accounts. It has a proprietary XML-based solution that can link seamlessly to customers' ERP systems.

For **order processing** Dell offers comprehensive tracking and tracing functions enabling customers to call up current information about the status of an order at any time.

Electronic **customer service** is well developed and the basic principle is to "facilitate self-help". As an example, customers have access to the same database used Dell's technical service teams, with over 10 million pages available, as well as access to numerous downloadable self help and diagnostic utilities. These are backed up with various assistants for on-line problem diagnosis ("Dell Troubleshooter", "Self Diagnostic Tool") and discussion forums moderated engineers. Dell systematically makes information available to all its users through a broad range of channels. Surveys demonstrate that Dell's Web-based customer service wins high levels of acceptance among its customers.

Satisfaction creates customer loyalty

Dell's online presence has produced demonstrable results. Dell does more than US\$50 million of business online every day. The company estimates that Web-based service has reduced its customer service costs by about fifty percent. Seventy percent of enquiries about the order status are handled on-line and, in the case of the technical customer service, the figure is 40% of enquiries, compared with a 27% average for the sector. Dell's file server providing self help files and drivers records 230,000 downloads every week.

The success of these initiatives is reflected in Dell's continuing growth. Sales have grown from US\$8 billion in 1997 to US\$32 billion in 2001 (fiscal years to February), while operating profits have risen from US\$0.7 billion to US\$2.7 billion.

Store-in-store solutions systems and automated transaction processing are developing both customer lock-in and **high customer loyalty**. Dell now has over 30,000 premium customers who handle their purchases via individual shops. It has created a unique position among its customers from an in-depth understanding of customer needs.

Product and service offer extended to meet customer needs

In looking to further serve customer needs, Dell identified a number of additional products and services outside its core product range that it could supply using the Web as a service and delivery channel. It currently offers financial services and Web hosting (DellHost) and may extend its range of services to include telecommunications and office services.

Dell has drawn a careful line between opening its own channels to competitors products and serving customers directly. In 1999, it created **Gigabuys.com** – an Internet service on which customers can find a wide variety of products ranging from computers to peripheral devices from many different manufacturers.

Cautious experimentation also led to a less successful procurement related venture: **Dellmarketplace.com**. Launched in October 2000, aimed at Dell's two million small business customers, and powered by Ariba, the site aimed to provide hosted e-procurement services.

Dell later chose to fold Gigabuys' capabilities and offerings into their core site, and closed Dellmarketplace after only four months of operations, citing lack of sufficient interest to build critical mass. Instead, the company has chosen to focus on supplying infrastructure to would-be marketplace operators and participants.

Despite these setbacks, the Dell example shows just how far a sell-side portal can extend and the strengths that are developed from a deep understanding of customer requirements, served via the Web. It also hints at how a company with strong understanding of its customers' requirements and significant Web expertise can begin to deliver services on the Web. We discuss these evolutionary aspects in more detail in later chapters.

SEARCHLIGHT 19: CISCO – A CUSTOMER SERVICE BENCHMARK

*Cisco Systems is the undisputed leader in providing networking infrastructure hardware and solutions. The company dominates the global market for products that power the Internet, among them **routers** and switches. But more than product leadership, it is an unparalleled **customer intimacy** that makes Cisco unique. This intimacy has been achieved by creating a private sell-side marketplace for their customers, suppliers, and partners, which leverages the Internet's huge potential for sales, marketing and customer service.*

A Silicon Valley history: from routers to network infrastructure solutions

Cisco's history is similar to that of many Silicon Valley start-ups. The company was founded by engineers from Stanford University who developed a hardware solution to maintain a connection between computer systems on two separate areas on campus. This was the genesis of **routers**, today still the core enabling technology of the Internet.

From IP routers, Cisco has expanded its portfolio to include such diverse products as switches, firewalls, optical platforms, and DSL, cable, VoIP and wireless access devices. It did so through “*innovation by acquisition*.” From 1993 to 2000 Cisco has acquired a total of over 70 companies, often with only a technology and no products. Most of Cisco's new product lines can be traced back to such acquisitions, ranging from early acquisitions of Crescendo and Kalpana in LAN switching – an area Cisco had overlooked while focusing on ATM – to the much-publicized US\$6.9 billion acquisition in 1999 of optical networking start-up Cerent, a company that had historical sales of US\$10 million at the time. Cisco's true claim to fame in this area, however, is not the identification and acquisition of the technologies, but the subsequent successful integration of almost all of the acquired companies.

Cisco primarily targets large enterprises and service providers but is also moving into small business and consumer markets as the Internet becomes increasingly pervasive.

Cisco's rise has been meteoric. Since becoming a public company in 1990, annual revenues increased from US\$70 million to US\$19 billion in fiscal 2000. With a router market share close to 70%, Cisco's leadership is akin to that of Microsoft for PC operating systems and Intel for microprocessors. The company holds the No. 1 or No. 2 market share in virtually every market segment in which it participates. In the beginning of 2001, however, Cisco had to face its first serious setback, partially caused by market developments. It will be interesting to see what changes this situation might trigger.

Making success happen: Cisco connection on-line

To attribute Cisco's success through the 1990s merely to the overall explosive growth of the Internet and its acquisition skills would be short of the mark. The most interesting key to success is the pioneering role that Cisco has taken to fully leverage the Internet to support and transform business processes, both internally and externally. Cisco's online platform, "**Cisco Connection Online**", is one of the most instructive examples of a private, sell-side marketplace.

The screenshot displays the Cisco Connection Online website. At the top left is the Cisco Systems logo with the tagline "EMPOWERING THE INTERNET GENERATION". The main header reads "Cisco Connection Online" and "The Worldwide Leader in Networking for the Internet". Below the header is a navigation bar with links: "How to Buy", "Login", "Register", "Map/Help", and "Countries/Languages". A search bar is located on the left, showing "10 results". The main content area is divided into several sections: "Solutions for Your Network" with a dropdown menu, "Products & Technologies" with a dropdown, and "Site Map & Help" with a search bar and a "Talk To Us Now" button. A "Cisco Live!" logo is visible at the bottom left of the main content area. The right side of the page features a "Top News" section with a headline about Cisco and CMG teaming up for a unified messaging solution.

Fig. 6.5 CiscoConnection Online.

The seeds to develop an electronic business platform were sown as early as 1993 in an attempt to increase support efficiency. The initial idea was to relieve “live” service engineers of routine tasks by attempting to structure inquiries via the Internet and possibly to provide customers with immediate pre-configured answers online. It didn’t take long until Cisco recognized the true potential of the new medium not just for customer service, but also for sales support, supply-chain integration and other internal processes.

Customer service. Cisco supports its customers with state-of-the-art online customer service. Inquiries usually receive an immediate reply from a continually growing and effectively maintained service knowledge database. A discussion forum including other customers and Cisco’s engineers can also be used, leveraging a huge amount of both internal and external know-how. In 1999, 83% of all customer inquiries were resolved online, resulting in cost saving of about US\$75 million. Cisco claims another US\$200 million annual service cost savings through using other features such as software downloads and online document dispatch.

Sales. Customers may configure and order required products online – with more than 100 million product variants available – and then track and trace them to delivery. The online configuration tool has reduced wrong orders to a minimum. Order processing has been speeded up considerably. Today, almost 90% of ordering is done on the Web.

Supply Chain Management. The company’s 100 most important suppliers and outsourcing partners are integrated in the “Cisco Supplier Connection.” Online customer orders are passed directly to the relevant manufacturing company and in most cases finished products are sent directly to customers. About half of the products shipped are never actually touched by Cisco employees. Through-put times for orders has been reduced from around seven weeks to two.

Internal processes. Cisco was one of the first companies that used the Internet as an efficient tool to support recruiting and other internal HR related processes. Eighty-five percent of job applications come in online. Employee appraisals, expense accounting and training are all done online.

To further develop its e-business platform, Cisco has installed an “Electronic Commerce Advisory Board”, in which about 60 customers together with Cisco to define future requirements and make recommendations.

The claimed payoff: business visibility and customer intimacy

Financial accounting and control has improved due to the almost complete Internet-enablement of business processes – quarterly reports can be compiled within 24 hours of a period end and sales figures are available in almost real-time. This gives Cisco a strong visibility into the current performance of its business. It has supported the company’s relentless sales focus and ability to satisfy customer needs to enable Cisco to meet or exceed analyst estimates for 40+ consecutive quarters.

However, nothing lasts forever. As of late December 2000 Cisco has been forced to swallow its optimistic sales forecasts. The company not only missed its earnings estimates for the first time, but also saw its carrier sales retrench. In Q1 2001 Cisco took an unprecedented **US\$2.4 billion charge on inventory write-offs**. The full story of the background to these events has not yet been told. But it certainly reinforced the point that knowing your sales to the minute does not necessarily make you much smarter in predicting them.

Leveraging the Internet to directly conduct business has, however, resulted in a unique intimacy for Cisco with all of the participants in its value chain: Customers, partners, and suppliers. Despite Cisco’s strong reliance on indirect and value channels, it tends to own the customer relationship because of the amount of direct interaction it has with companies over the Web.

Cisco claims very strong **economic benefits** for Connection Online. The company annually is investing about US\$50 million in its expansion and operations, and says financial benefits have amounted to more than US\$1 billion a year as a result. One piece of evidence for the believing this is that although sales have grown rapidly for years, the number of customer service employees has grown much more moderately.

Further lessons learnt: visionary thinking, pragmatic action

Even though Cisco offers leading edge technology and services, the company has been thought to have successfully avoided overextending itself. Its approach to deploying Connection Online offered a good example. Instead of developing a comprehensive and far-reaching solution on the drawing board, Cisco implemented the platform step-by-step, tactically, quickly and as needed. Experience grew with each component successfully implemented along with a readiness to transfer a growing number of functions and processes onto the electronic platform. This may be the most valuable lesson to be learned from Cisco's online success.

SEARCHLIGHT 20: ENEWS – SERVING YOUR CUSTOMER’S CUSTOMER ...

eNews is a leading Web-based magazine subscription provider and is a variant of the sell-side portal concept. Although it does not push its own products, it is focused on helping its customers (publishers) reach their customers (readers). To this end it developed a consumer brand of its own and acts as an e-commerce portal for hundreds of participating publishers as well as in its own right

Helping publishers reach their audience

Washington based enews.com is the Web’s leading magazine subscription provider, now offering subscriptions to over 1000 magazines and 100,000 newsletters and newspapers from more than 400 publishers.

Born in 1993 as a spin-off from *New Republic* magazine’s Electronic Newsstand it originally offered sample articles and subscription opportunities for eight magazines.

Early venture capital investment was added to by heavyweights like Barnesandnoble.com, Time Inc. and European publishing giant Hachette Filipacchi. It became a significant consumer destination site in its own right, regularly ranked by MediaMetrix as one of the Top 50 shopping sites on the Web during 2000. Publications range from mainstream titles such as *Time* and *Fortune* to niche publications such as *Egypt Today*. It is said to generate around 400,000 subscriptions annually.

Simplifying the subscription and buying process for readers and publishers

eNews provides a better way of doing business for all those concerned with magazine subscriptions. The process of subscribing to magazines is one that, from the point of view of both consumers and publishers, needed fixing. Gone for would-be subscribers is the lengthy process of committing a paper copy request for a subscription to the mail and then waiting for a first issue to arrive. Gone for the publisher are multiple and often duplicative processes associated with handling paper-based subscription applications and check payments.

eNews offers its consumer customers editorial commentary combined with fast and effective navigation to enable shopping and gifting. Its focus is on end customer utility. As its Website explains:

“...We offer Web shoppers more than 100,000 magazine, newsletter, and newspaper subscriptions in 25 categories and over 100 special interest areas. Excellent customer care, savvy editorial commentary, and fast and friendly navigation make enews.com a superior shopping experience. Magazine lovers can search for magazines by title or topic, discover the week’s must-see magazine articles, or send personal cards to friends and family with gift subscriptions”...

Perhaps more important than these is the breadth of offer within an area of interest that the site is able to offer. No single publisher has the range of titles within an area to create such an authoritative offer.

It potentially offers publishers a wealth of information about the end customer that a publisher would have previously been unable to gather or would have incurred very high costs to do so. This customer data comes from sign-up derived information, responses to online surveys and observation of users online browsing habits.

Extending publishers’ business opportunities

Publishers are also offered an opportunity to reach potential new subscribers that they might not have reached themselves. Several leading publishers have already decided to outsource their Web-based subscription activities to eNews, linking to it directly from their own magazine Websites. For many smaller publishers, winning space on newsstands or in retail stores is hard. Slower moving titles have to compete with high volume titles, or other categories of goods that yield higher cash margins in the space. For these publishers the opportunity to reach readers that would otherwise not find their titles is significant.

Within the site e-news offers publishers a range of opportunities to effectively market their titles to potential readers – through context sensitive banner

ads and interstitials, buttons, keyword-related promotions, and email offerings that are highly tailored to user interests and thus likely to generate subscription sales.

As the site makes clear, providing additional services to publishers is a critical part of its business and it offers an number: Subscription promotions (online promotions featuring exclusive subscription offers); a continuous subscription service (the simplified renewal process for both the subscriber and the publisher); gift subscription promotions (a one-stop online order processing and shipping service for gift subscriptions); cross-selling promotions (a service for publishers with multiple titles or other products to sell) and finally customized subscription Web pages (subscription administration pages built for a publisher's own Website).

A challenging outlook – sustaining the B2B2B model

eNews' critical challenge is to continue to grow its subscriber numbers, while ensuring that this growth is achieved within a sustainable business model. Maintaining a Web-based consumer brand in order to serve its own business customers is at the heart of the model, but the economics are difficult. After making half its staff redundant the company recently announced that Barnes and Noble has increased its investment to become a majority shareholder. Barnes and Noble will now provide bricks and mortar based opportunities for eNews to promote its service to consumers, which will in turn improve its economics and likely speed its growth.

SEARCHLIGHT 21: AMS – ... TO CREATE “DIGITAL FRANCHISES”

As a wholesaler for CDs, videos and games AMS is a proponent of “B2B2C” e-commerce. The Internet poses a real threat to its traditional core business in the long term, as digitization and electronic distribution of its products becomes a reality. In the face of this the company is showing how to weather the digital storm using a sell-side portal concept.

An early technology adopter

AMS, headquartered in Hilden near Düsseldorf, Germany, is one of the country’s leading wholesalers for pre-recorded CDs, Mini Disks, Videos, DVDs and CD-ROMs games and game cartridges. It supplies department stores, supermarkets and specialist retail outlets, managing the whole music and entertainment category in-store for many of its customers.

The company was early to embrace technology, providing its customers with electronic stock management and ordering tools and retailing pricing guides at a branch level since the mid-1980s. As a consequence replenishment of in-store stock is highly efficient with re-supply on a 24-hour cycle.

Online retailing of CD’s, videos and CD-ROM games has grown quickly. Internet stores have become an important part of the channel mix that wholesalers need to address, and AMS has extended its range of services for e-tailers. The company provides a multimedia product database that acts as a master product file for any e-tailer. As of April 2001 it contains 30-second sound samples for over 2.1 million tracks, 130,000 album cover illustrations and a huge range of additional contextual information (lyrics, artist credits etc). It is used by the three leading German retailers as the basis for their Internet service. The significant investment by AMS in this database (developed since 1996) has enabled its retail customers rapidly to develop an online presence.

An extended level of support to business customers

To further support e-tailers, AMS has extended its logistics capabilities to cover **direct to consumer supply** (“pick, pack and dispatch”) alongside its retail

trade supply operations. It has also expanded its range of e-commerce services in three areas:

- 1 **Online shops.** AMS offers brick and mortar retailers and e-tailers turnkey Internet stores for entertainment products. The stores are branded by the retailer but wholly managed by AMS. Target customers are those who understand entertainment as a category but do not have the resources to develop their own online offer, or those who have online e-tailing skills but not in the entertainment category.
- 2 **Kiosk systems.** AMS kiosk systems deliver to physical retailers a huge depth of inventory electronically that could not be carried economically in physical form. Consumers can interrogate the multimedia product database via an in-store kiosk as on the Web. In the future, products can be ordered directly to the home, with a credit to the retailer or direct to store for later pick up. To AMS's 16 retail customers these kiosks represent an incremental sales opportunity.
- 3 **Personalized CDs.** Finally, AMS is testing "record-to-order" CDs for online stores and kiosk systems. These are CDs that consumers compile from a catalogue of individual tracks. Cover graphics and titles, as well as inside sleeve details, can be individually selected. This service also covers record-to-order CDs that are no longer held in stock.

AMS' services are not all "portal delivered," but its positioning – to help brick and mortar retailers and e-tailers exploit digital tools and channels to sell more product, and thus benefit AMS' business – is that of a sell-side portal. Valley Media in the US and Entertainment UK in Great Britain have developed similar business models.

PART III

Long-Range Forecast for the Digital Storm

Having explained the current status of the electronic marketplace as it has developed over the last years, we now turn to the future. We discuss what companies have to focus on in order to build distinctive and profitable businesses. Furthermore, we analyze what the overall structure of the market landscape will look like.

In **Chapter 7** we explore the future development of the electronic marketplace. We expose the weaknesses in the assumptions underlying many past and present approaches: The megalomaniac concepts based on a misinterpretation of “network and scale effects;” and the “e-topia” of the attractiveness of industry-wide efficiency gains and perfect markets. We show how innovative differentiation and company-specific Dynamic Trading Networks will form the basis for profitable business models. We also describe the future industry landscape, an equilibrium between segment consolidation and the continuous emergence of innovators. Finally, we include a discussion of the challenges in the evolution of current marketplaces.

In **Chapter 8** we zoom in on the interplay between future infrastructure and service provision. We discuss how software determines what can be realized in the electronic marketplace. The complexity and inflexibility of current software, combined with the burden of the legacy systems and the shortfalls of new products, have created a situation where many innovative business concepts cannot be realized. The most promising effort to resolve this impasse makes software look much more like a service, and vice versa, many traditional services will be delivered increasingly over the Web. The ensuing paradigm is called Web services.

Profits in Futurescape

“**S**TART-UPS DON’T DIE FROM STARVATION, they die from indigestion.” The worst mistake a young company can commit is to become fascinated by the huge potential of its technology and try to be too many things to too many people. We discuss in this chapter how similar pitfalls destroy the profitability of e-markets.

In addition, we describe how the electronic marketplace will continuously conquer the space of Holmes’ Law and evolve into a web of dynamic trading networks. The resulting landscape will be in constant flux: Natural consolidation will be balanced by continuously emerging innovators.

NAVIGATOR THROUGH CHAPTER 7

From megalomania to focus

The notion of network effects misled B2B markets into megalomania. E-markets tried to instantly “own” whole industries and be too many things to too many people. The result was high complexity, slow adoption, low customer satisfaction and ultimately low profitability, as illustrated by **WebMD**. High-tech startups have repeatedly shown how focus, rather than inflationary functionality, leads to scale and profitability.

An efficient “E-topia” only reserves the right to play

Many companies and markets focus on short-term transparency and efficiency gains in transactions and purchasing. They are intrigued by an “E-topia” of attractive cost positions neglecting commoditization and price effects. Closer scrutiny reveals that the Internet triggers transparency faster than process

changes. To escape the resulting profitability squeeze in a buyer's market, companies have to learn to differentiate.

End-customer focused trading networks emerge

To achieve differentiation, companies will increasingly develop trading partner networks. These networks are enabled by e-markets. They are no longer fully public, but neither do they have static participants and processes. Instead they are in constant evolution and center around the end customer. The current structure of the industry value chain has to be mentally challenged, before shaping the trading partner network.

A dynamic futurescape

We will continue to see an abundance of mergers, spin-offs and outright failures as well as emerging innovators in the e-market landscape. While individual segments have the tendency to consolidate, new market concepts will emerge. The network of these e-markets will deliver on the promise of the electronic marketplace.

Profitability of e-markets

While often discussed, pricing schemes have little to do with true profitability drivers. Instead, choosing the right software platform, playing the financial markets well, differentiating from a global competition and finally focusing on a quickly scalable value proposition are the key determinants.

FROM MEGALOMANIA TO FOCUS

Megalomania

It all seemed conceptually simple. E-markets link buyers and sellers. Through the well-known network effects the largest marketplace has the largest attraction for both. In order to win in this game of positive reinforcement, you had to grow fast.

As the winner takes all, in every industry only one dominant marketplace would emerge. Thus you had to cover the complete interaction needs of the industry participants and fiercely fight or swallow any competitor in sight. Customers had to be added at any cost.

Business-to-Consumer (B2C) players showed the way. eBay was quickly building its dominance in the US. Yahoo was getting stronger with every user and conquering international markets. AOL, after having managed an initial distancing from its competitors, seemed to gain dominance effortlessly.

In B2B e-markets, prime species of this “**megalomaniac period**” were **Healtheon** and **WebMD**. Both companies started out to win the biggest price of all: Dominance of the 1.3 trillion dollar US health care industry. The companies correctly identified the huge inefficiencies in all parts of the system and the enormous potential of the Internet in the service sector. The regulatory environment was recognized as a significant hurdle, but there was confidence, that this obstacle would eventually be overcome. The companies devised the structure of a complete solution to the whole industry. In order not to waste energy fighting over this cake, they surprisingly decided to merge – uniting venture capitalist Kleiner Perkins Caufield and Byers and founder Jim Clarke with long-time rival Bill Gates. Leveraging its inflated stock price, the merged company subsequently went on an US\$ 8 billion buying binge, swallowing any competitor or complement in sight. WebMD soon “ruled over” the online health industry.

→ **Searchlight 22:** WebMD – can you recover from megalomania? (p. 234)

And suddenly the dream collapsed. WebMD had set the wrong priorities. The company hit several walls at once:

- 1 **Complexity.** Providing an overarching solution to the whole health care industry is a Herculean task, even if not complicated by multiple acquisitions.
- 2 **Low volumes.** Signing up many users is not equivalent to achieving strong usage.
- 3 **Resistance to change by the users.** Doctors, patients, hospitals, patients all proved resistant to instant change.

- 4 **Slipping profitability targets.** With the change in market conditions, investors put up pressure to “stop the bleeding.”

As discussed in the case study, WebMD consequently has been struggling to focus on small and potentially profitable pieces. It might have to exit several segments and possibly disintegrate into a network of focused players. If it masters this part, it may later stage a strong come-back.

While cash-flow pressure may force the independents to change first, the **industry consortia** will follow soon. In spite of their market clout, e-markets like Covisint cannot force instant change upon the processes of a whole industry. Not surprisingly, the venture has moved slowly. Covisint has already shifted its priorities to C-parts rather than core processes and it will be interesting to see how it develops further.

Gigantic e-visions had another unpleasant side effect. Scenarios of complete industry dominance not only scared off potential participants, but actually incited them to instead launch their own e-market initiatives. While some never got off the ground or were not all that successful, it cost the original markets crucial liquidity and valuation.

Today, these concepts are increasingly recognized as megalomania – strongly encouraged by ballooning financial markets. Even complete market dominance, as in the case of Web MD, failed to provide the predicted virtuous circle of profit-generating network effects. So, what had gone wrong?

Scale through focus

The fundamental error was to confuse size with scale. Scale is indeed very important. To understand the difference, let us return to the fastest scaling exchange in the history of the Internet.

As mentioned before, **Napster** grew within a year to reach 20 million users in June 2000. Although it became clear at that point that Napster would hardly avoid a court shutdown, it added more than 30 million additional users until February 2001, when it was forced to scale back its service.

What had been Napster’s secret? It was by far the most easy-to-use service to support one specific activity: exchange of mp3 music files. Napster was

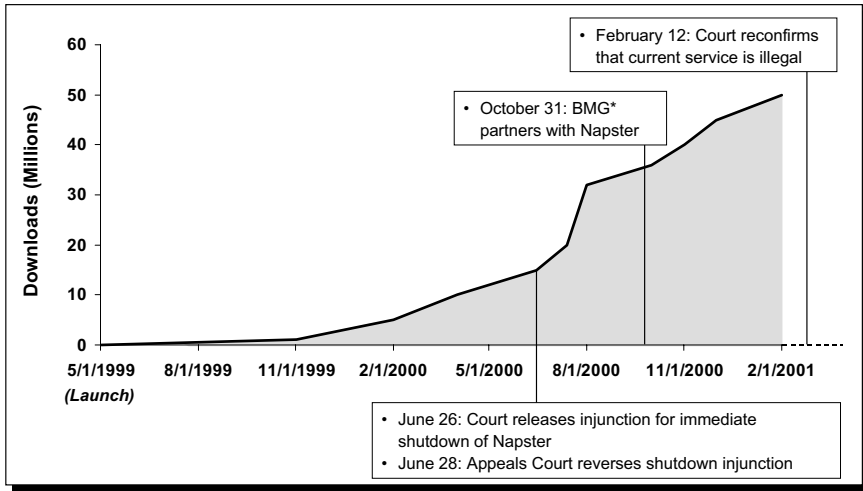
not the most complete consumer portal and never dreamt of providing such “essential” commodities as weather services and stock quotes. It was not the technically most sophisticated platform and did not allow for the exchange of many other file formats (such as documents, photos, films etc). Instead, Napster was simple, but provided one single service so well even amateurs could start using it in a few minutes. The entry barriers were very low and Napster provided immediate value: Although regular users would want a fast Internet connection, you could experience Napster with a simple modem. Mp3 players were attractive play-back devices, but you could buy them later and first listen on your computer. Napster achieved **true scale**: A simple service replicated millions of times. And it achieved **true network effects**: Every new user contributed (as a potential source) to this targeted service.

Napster can hardly serve as an exemplary marketplace: It is illegal and has no business model. With respect to scaling, however, its achievements remain unmatched.

When analyzed in more detail, the previously mentioned successful B2C examples show similar patterns. eBay started out as focused as can be. AOL achieved dominance by ease-of-use and grew as the “simplest” Internet Access Provider. Similarly, Yahoo! was always the most customer-centric search-engine. Even when it expanded into a complete portal it kept complexity down. Nothing would prevent Yahoo! from acquiring a small bank tomorrow and becoming a formidable challenger to established financial institutions – it already has a staggering number of portfolio users. Nothing, that is, but complexity. And Yahoo! has consistently avoided complex processes.

Achieving scale in consumer markets is comparatively simple. Business environments, as we have amply discussed, are much more challenging in that respect. Companies like Enron, however, have shown that it is well achievable. Let us analyze the issue beyond individual players and discuss a whole industry, which has reached maturity and is governed by the very same patterns: **Software**.

The law of increasing returns and network effects was originally derived in the software industry. Software has very high scale effects (it is a digital product with negligible variable costs) and network effects (interoperability issues, user training). The story of how Microsoft Office leveraged these to



* Bertelsmann Music Group

Fig. 7.1 Napster growth curve.

eliminate both Lotus123 and WordPerfect has often been told. Oracle in databases and SAP in enterprise resource planning are similar success stories. So what do young software companies do? Do they try to completely restructure IT landscapes? Do they add as much functionality as possible? Do they strive to dominate whole sectors at once? Quite on the contrary, the key to success in software is **focus, focus and focus**.

The reasons are the following:

- 1 **Communicate a clear customer value.** You should be able to give the classical elevator pitch of why customers should buy your product/service.
- 2 **Minimize the change effort at the customer.** So-called “*forklift migrations*” that require a complete change in the environment on the side of the customer are doomed. Instead, ease of use and a “complete solution” (i.e. complementary services that the customer needs) within the current landscape have to be provided.
- 3 **Keeping the promise.** Delivering on promises by managing complexity and reaching all the proclaimed goals is a significant challenge.
- 4 **Profitability.** Last not least, simplicity keeps costs down and allows to scale quickly.

For a while, e-markets seemed exempt from this: E-value was “self-evident” and confirmed by the press and valuations; slow-moving customers were derided as “e-laggards” – implying it was their problem, rather than that of the e-market; “Internet time scales” were quoted to excuse malfunctioning of services; and profitability was to be a free gift to the dominant player in a “winner takes all” model. In the meantime the stock market was willing to finance it all.

The sudden perception of the “emperors new clothes” by the financial markets canceled the exemption from profit creation – and with it the strategies collapsed. Suddenly e-markets were discovering the start-up values one by one. In Chapter 10 we show how successful focused strategies, for marketplaces as well as market participants, can be built.

AN EFFICIENT “E-TOPIA” ONLY RESERVES THE RIGHT TO PLAY

If e-markets become customer-centric and focused, what should they actually focus on? In order to address this question, let us see, what an ideal situation would be for their customers.

INSERT 7.1: E-TOPIA

I have a dream, that buyers will have more choice, faster processes and lower transaction costs.

I have a dream, that sellers will likewise have lower transaction costs and instant access to global markets.

I have a dream, that inventories will belong to the past, distributors will be true logistics partners and banks trustworthy transaction partners.

I have a dream, that markets will be liquid and exchanges efficient. That software implementations will be effortless and changes simple. And that financial markets will be rational.

A perfect world?

E-topia might at first glance indeed seem perfect to you. In the real world – as you might have guessed – there is a catch.

It all comes down to the self interest of the end-customer. The first advantage the Internet delivers is transparency. All things being equal, it transforms the world into a **buyer's market**.

As a consequence, **prices** have a tendency to **drop faster** than process changes can get implemented. And very soon you recognize the catch: **There is no differentiation**.

Transparency combined with lack of differentiation squeezes margins. E-topia assumes tomorrow's efficiency. It would be very attractive at today's prices. **In reality there is no profitability**.

No profitability is not what you were promised from the electronic marketplace. As important as all the industry-wide process improvements might be, however, by themselves they will benefit the end-customer, rather than making your business more profitable. All the painful transformations will merely **reserve you the right to play**.

END-CUSTOMER FOCUSED TRADING NETWORKS EMERGE

In order to achieve the all-important **differentiation**, companies have to do things better than the rest of the industry. They have to think about how to use the electronic marketplace in a novel way to deliver unique and superior value.

This is where most of the **consortia e-market initiatives** face challenges:

- 1 If they are built by **competitors** they will struggle to differentiate. Either the companies' core processes are not included, or they face commoditization
- 2 If they are built by **complementors** around current processes they face different strains. Typically, dynamic processes and structures require an evolving set of complementors.

The most important aspect of the Internet that can be leveraged for innovative

differentiation is the “**back-channel**,” starting with the **end-customer**. For instance, B2C e-commerce should rather be called C2B e-commerce, as the new element is the end customer (consumer or professional) communicating with the business. The more networked the industry gets, the more this end customer interacts with multiple elements of the value network (no longer a value chain) at once. For instance, if you want a car built to order in a few days – not in months, as now – then the order has to be split on the spot and be transmitted to the various elements of the value network. This network, whether distributed over several companies or over parts of a single enterprise, will increasingly organize around the end-customer.

The B2B2C cases of sell-side portals in chapter 6 are first examples of such an approach. As discussed, sell-side portals always strive for differentiation from competitors and do not lend themselves to industry-wide collaborative efforts. The discussed examples create customer value through innovative approaches.

When differentiation is the goal, as it should be for all core processes, then fully public markets are no longer appropriate. Instead, companies have to establish their own **trading partner network**. Thus future e-markets will differ in many ways from today’s landscape, as summarized in Fig. 7.2.

E-markets will have to evolve significantly to support these networks.

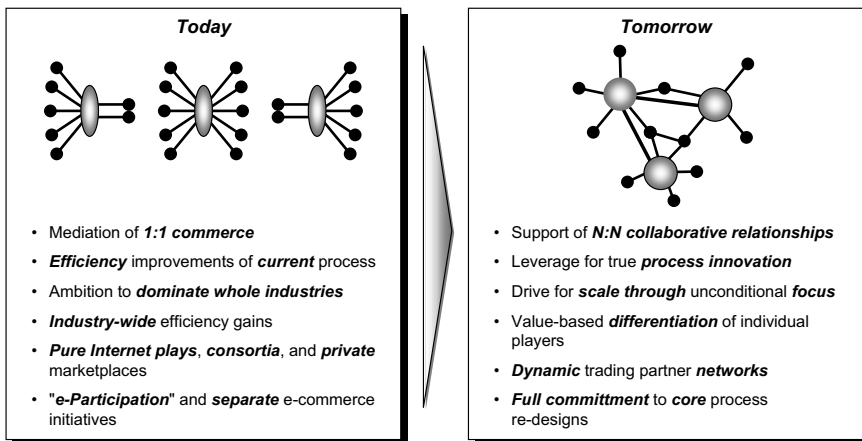


Fig. 7.2 The evolution of e-markets.

- They have to be either private or credibly neutral.
- They need to provide for an easy customization of processes.
- They have to allow for dynamical changes in the constituents of the network.

In many ways these **e-markets will combine elements of service providers and of platform providers**. As we will discuss in the next chapter, concepts of software, services and certain aspects of e-markets increasingly overlap. There are gradual, rather than qualitative, differences and we expect to see a continuum of business models.

In a certain sense, the **clear distinction between market participants and markets is also blurring**. For instance, companies will have their private markets. As they may get the software for these dynamic processes increasingly delivered as services, it is somewhat a question of definition whether these companies rent the software to run their own network or use the services of a marketplace that supports a network.

Not every marketplace will quickly develop like this. For a long time there will be exchanges and public markets, in particular for “commodities,” i.e. non-differentiating parts of the value delivery. We expect, however, that even these commodity markets will increasingly introduce “mass customization” and support personalized partner services and networks.

In Chapter 9 we will study how to deconstruct today’s value chain and reconstruct future scenarios and attractive roles. In Chapter 10 we will then address how *you* can create a differentiated, value-creating business: As a market operator, as a participant or as an infrastructure and service provider to the electronic marketplace.

A DYNAMIC FUTUREScape

When discussing the evolution of the e-market landscape, common answers range from predicting a consolidation into a few dominant marketplaces to the opposing view of a complete disintegration into many niche players. Both are right – and thus both are wrong.

We believe the answer to be similar to the structure of the software industry today. E-markets and software experience the same drivers: Scale, network

effects, increasing service orientation. While any specific segment in such an industry consolidates, new players emerge constantly. The industry as a whole is thus highly dynamic. For instance, in spite of giants such as Microsoft, the software industry today is continuing to fragment.

Companies will use the support of multiple e-markets to enable their trading networks. They will, however, refrain from a “portfolio approach” to markets. Instead they will avoid overlap, but use complementary e-markets. These markets, like other companies, have to differentiate.

For individual companies this means:

- 1 **Successful players will strive to consolidate the segment.** The basic principle that every single e-market service is a natural monopoly continues to be true. Thus players first start to dominate their target service segment and then strive to leverage this into neighboring segments, be it organically or via acquisition. Otherwise they could become just a functionality of other markets.
- 2 **Markets become networked.** All markets have to interact and be at least partially open. As no single market can provide every service, the users will demand interoperability.
- 3 **Every company will have a private marketplace.** Private marketplaces are the basis for the relationship of companies with their value network. As previously described, new technologies render the latter increasingly flexible. The private marketplaces will tie into the web of e-markets. For large players, the private marketplace can be very significant.
- 4 **E-markets will increasingly focus on services.** Some of today’s value propositions of pure “matching” will frankly become technically trivial. Instead, provisioning of services will increasingly gain in importance. Web services, as describe in Chapter 8, will deliver the technology that markets can use to provide customized services. Next-generation service providers will increasingly form a core part of e-markets.
- 5 **Dynamic trading partner networks evolve.** Companies will maintain deeper electronic relationships with partners. However, the formation and separation of these links will become simpler, making the

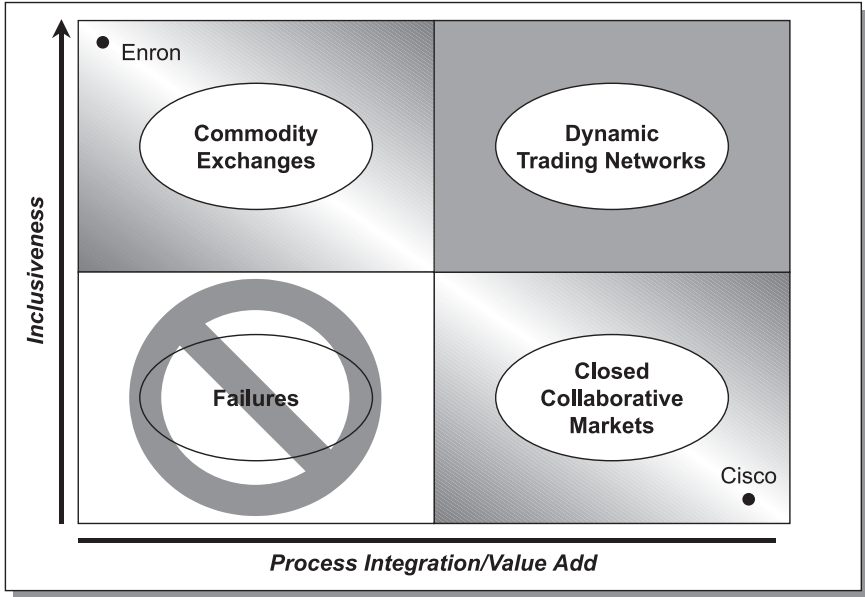


Fig. 7.3 Future e-market categories.

networks of relationships dynamic. Process- and service-intensive marketplaces can grow to ever larger scales.

In Fig. 7.3 we give an illustration of this vision.

Currently the two axes, inclusiveness of participants and process integration/value-added services are to a certain extent trade-offs. The most successful players are completely open exchanges or highly process/service oriented private exchanges. In a future scenario of dynamic trading networks, these elements could be combined. In the next chapter we explore what infrastructure could support such a vision.

The segmentation in Fig. 7.3 is also useful in understanding the liquidity of e-markets. We discuss this in Insert 7.2.

Collaborative many-to-many interactions – between markets, between participating companies and between individuals in those companies – will little by little become a reality of the electronic marketplace. “Holmes’ Law” has shown the incredible potential rewards of such a network. It will not be as fast nor as easy as many imagined, but no less inevitable.

INSERT 7.2: “LIQUIDITY” OF E-MARKETS

Many things have been written about how e-markets can achieve liquidity fast. Lack of liquidity of an e-market is reminiscent of forlorn and remote farmers’ markets.

The whole concept of **liquidity** comes from **financial markets**. Their very reason of existence is liquidity: the matching of supply and demand for specific financial products. As the revenue of financial market depends on transaction fees, this liquidity is also the core driver of their profitability.

There are two main lessons to be learnt from financial markets.

Simplicity wins

- *Standardize* products and services, *simplify processes* as well as *migration* towards these processes
- Win core industry players first and focus on winning *share of customer*
- Focus on *dominating one segment* rather than a large share of many segments.

The focus of many e-markets has instead been on signing up as many players as possible. This has, however, quickly turned into a complexity trap, as discussed in the text.

Create a secondary financial market

Financial markets are not liquid because so many people want to buy companies, but because shares are a *liquid financial asset* traded between investors who have no interest in ever owning the company. The same is true for commodity markets, such as the Chicago Board of Trade (CBOT). The secondary trading of assets and their derivatives (futures, options) in these markets is always many orders of magnitude bigger than the value of the underlying primary assets and thus generates tremendous liquidity.

There is no reason why one could not build financial products, for instance, around telecoms or electricity – some speculation on the California electricity crises could have been very lucrative. And indeed, players such as

Enron, IntercontinentalExchange or RateXchange have started to offer derivative trading (see Searchlights 8 and 16).

Electronic exchanges are the e-markets that can derive most insights from the financial markets. Other e-markets first have to evaluate to *what extent* liquidity is a critical profitability driver; *what kind* of liquidity they need and then focus on *how* to achieve it. **Process-centric e-markets**, for instance, cannot aim to create secondary financial markets. Simplicity, however, is just as critical for them as for exchanges.

PROFITABILITY OF E-MARKETS

The ultimate purpose of any business is to make profits. For e-markets the attention initially focused on other metrics, such as growth, which was thought of as a guarantor for eventual profitability. However, growth is only a necessary, not a sufficient condition in the electronic marketplace. As the growth logic collapsed, profitability has become the center of attention.

Strangely, many profitability discussions focus on pricing issues, such as: Should I charge for subscription or per transaction? Is a fixed or a variable fee appropriate? Can advertising be a major source of income?

While of significant tactical relevance, we have yet to run across an example where a resolution of these questions truly determines the profitability of an e-market.

Profitability will come from innovative value propositions. These will not only require to leverage the Internet in a unique way for differentiation, but probably also entail the purposeful commoditization of other parts of the business. We have seen examples of this in Cisco and Dell as discussed in Chapter 1. How you can leverage the know how from this book to devise such a strategies for your particular business will be the subject of Part IV.

Beyond that, we feel the best answer has been given by Sherlock Holmes in the prologue:

- 1 **Choose your software platform carefully.** Many markets discovered, that this is either their real asset or their true Achilles heel.
- 2 **Understand your investors.** No matter how irrational financial markets might appear to you, not understanding them well has brought havoc to many entrepreneurs.
- 3 **Differentiate.** When markets focus exclusively on delivering value they sometimes forget that they also need a sustainable competitive advantage themselves.
- 4 **Focus and make life easy for your customers.** Even if you have a strong potential value proposition, keep things simple for you and the customer.

These principles are not magic. And in our experience they are the best guidelines for entrepreneurs.

When combined with the earlier discussion of the electronic marketplace, these four principles allow you to understand the specific challenges existing players are facing. Clearly every company has to be analyzed individually. However, Fig. 7.4 summarizes the common challenges for the major categories of players.

<i>Current Category</i>	<i>Example</i>	<i>Core Challenges</i>	<i>Attractiveness</i>
Aggregators	<ul style="list-style-type: none"> • ICG • VerticalNet • Ventro 	<ul style="list-style-type: none"> • Restructure portfolio • Transform into true service provider for portfolio companies 	
Independent (start-ups)	<ul style="list-style-type: none"> • PaperExchange • RateXchange 	<ul style="list-style-type: none"> • Survive current shakeout/financial squeeze • Develop support for dynamic trading partner networks 	
Consortia	<ul style="list-style-type: none"> • Covisint • WorldWide Retail Exchange 	<ul style="list-style-type: none"> • Support process innovation and competitive differentiation of participants • Assure swift and independent decision taking 	
Platform Vendors	<ul style="list-style-type: none"> • CommerceOne • Ariba • SAP 	<ul style="list-style-type: none"> • Expand collaborative functionality • Develop true process support, while minimizing complexity 	
Independent (industry)	<ul style="list-style-type: none"> • Enron 	<ul style="list-style-type: none"> • Maintain first mover advantage 	
Private Marketplaces	<ul style="list-style-type: none"> • Cisco • Dell 	<ul style="list-style-type: none"> • Move towards leveraging N:N interaction capabilities of the electronic marketplace 	

Low High

Fig. 7.4 Challenges for today's e-market categories.

People might think that business, i.e. achieving profitability, will get harder in the electronic marketplace. After all, competition becomes ever more intense and transparency – and thus price pressure – increases. For instance, the structure of thousands of only geographically separated music stores is not stable in the electronic age and thus a fierce competition for survival could be triggered online. This translates backwards into B2B markets.

This is, however, only part of the picture. Certainly there will be a strong consolidation among similar formats and in particular the transition from today's world to tomorrow's world could be painful. In efficient business markets, however, this expansion of the best specialists only reinforces trends already initiated with open markets and globalization. Once scale and network effects are truly achieved, businesses can yield outstanding profits. There are many opportunities to innovate and create new ventures.

What truly increases, however, is the **risk** of doing business. Copying a successful on-line format is almost by definition unattractive, so you have to innovate. It is, however, always hard to assess novel business models. And until you dominate an (ever so tiny) segment you will fight fiercely with your competitors – with the likely scenario being a few winners and many more losers, rather than coexistence. No wonder financial markets are at a loss when trying to assess businesses in the electronic marketplace.

This brings us to a general phenomenon of our information society: The scarce factor is no longer capital, but know how and creativity. Smart money ultimately invests in the ability of knowledge workers to successfully meet unpredictable challenges. And this investment is risky, as “human capital rides the elevator up and down every day.” Ultimately the Internet only reinforces the general principles of profitability in an information society.

SEARCHLIGHT 22: WEBMD – CAN YOU RECOVER FROM MEGALOMANIA?

When Healtheon was founded in 1996, the company's goal was a comprehensive reform of the US healthcare system. It is one of the most ambitious existing Internet initiatives: The creation and operation of an "e-hub" for all the relevant players within a whole industry sector. But after a US\$9.8 billion merger with WebMD, another industry leader, the combined company has struggled to deliver on its ambitious goals and has retrenched and refocused its efforts on enabling the potentially most profitable industry interactions and transactions.

Healtheon/WebMD launch a concerted attack on the US\$1.3 trillion health care market

Healtheon arose from an initiative by Jim Clark, one of Silicon Valley's most well-known entrepreneurs. Clark, who had played a formative role in two of the Valley's most well-known companies, Silicon Graphics and Netscape, was guided by a belief that in the long-term, dominant e-hubs for the various sectors would be a source of massive value creation. A hub for the US\$1.3 trillion US healthcare sector, being one of the largest and most complex systems, clearly held an enormous potential. Despite the absence of a firm business-plan or management team, several top VCs, including John Doerr from heavyweight Kleiner Perkins Caufield and Byers, supported his idea. Backed by such top-tier venture funding, Healtheon's team of technology experts made it their goal to restructure the whole US healthcare system – right after Hillary Clinton resigned from her four year effort to do so. Formally founded at the end of 1996, Healtheon's initial focus was on providing back-office transaction-oriented services such as purchasing supplies and linking doctors to clinical labs. Healtheon's perceived first mover advantage and attractive value proposition resulted in a very successful IPO in 1999.

Not surprisingly, Healtheon was not the only player who saw the enormous potential in Internet-enabling the healthcare industry. WebMD, a competitor, was approaching the problem from a front-office perspective, linking doctors and patients, and providing online health content to consumers. Despite

the fact that the company had negligible revenue, it was preparing for its own IPO in mid-1999, the early days of the B2B frenzy.

Perceiving a complementary fit, the two companies announced their intention to merge in May of 1999. At the time of the deal's announcement, the combined company had a market capitalization of US\$9.84 billion. Clark and Doerr became board members, and Jeff Arnold, the CEO of WebMD, became CEO of the new venture.

At the time of the merger, other major industry players saw the potential of the conglomerate and threw their support behind it. Most notable was Microsoft, which invested US\$250 million. Microsoft's support was remarkable given that it had just emerged from an industry-defining battle with sworn enemy Netscape, Clark's former company; and given that there had been recurring speculations about a rivalry between Bill Gates and John Doerr, who invested in competitors of Microsoft and had been a catalyst of the SUN/AOL/Netscape deal. Also committing investments at the time were major healthcare players McKesson HBOC, Premiere, and Tenet Healthcare along with Intel, Lycos, and Softbank, who contributed a combined US\$110 million.

Healthon/WebMD continued its aggressive expansion strategy in a series of transactions which nearly doubled its size, closing 18 deals over the next 12 months, merging with Medical Manager Corporation and acquiring On-Health Network amongst others. In September 2000, the company officially changed its name from Healthon/WebMD to WebMD Corporation.

Targeting all constituents of the health care network

WebMD offers a full range of customized services for all of the participants in the healthcare value chain – professionals, consumers, and employers.

Services for **registered professionals** – i.e. **physicians** and **hospitals** – include immediate online insurance eligibility verification and referrals, access to lab tests and clinical reports, purchase of medication and supplies, office management support, internet access and customized Websites, a specialized career center and extensive news and research material. Further, they provide specialized communities for **nursing staff** and **health teachers**.

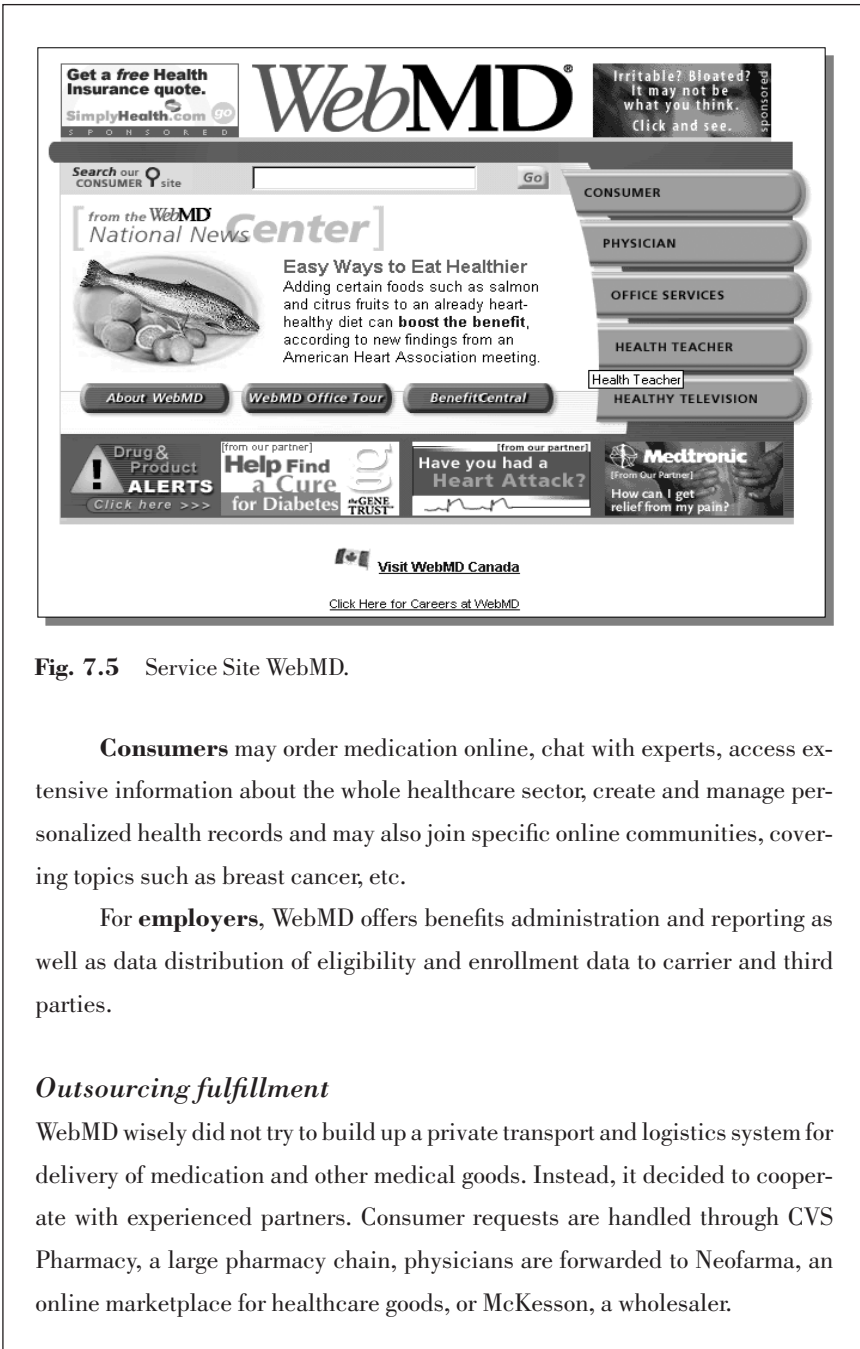


Fig. 7.5 Service Site WebMD.

Consumers may order medication online, chat with experts, access extensive information about the whole healthcare sector, create and manage personalized health records and may also join specific online communities, covering topics such as breast cancer, etc.

For **employers**, WebMD offers benefits administration and reporting as well as data distribution of eligibility and enrollment data to carrier and third parties.

Outsourcing fulfillment

WebMD wisely did not try to build up a private transport and logistics system for delivery of medication and other medical goods. Instead, it decided to cooperate with experienced partners. Consumer requests are handled through CVS Pharmacy, a large pharmacy chain, physicians are forwarded to Neofarma, an online marketplace for healthcare goods, or McKesson, a wholesaler.

Promising interesting benefits

WebMD offers potential advantages for most participants in the marketplace. *Physicians* mainly profit from office management support and extensive information resources, *hospitals* may reduce costs due to electronic procurement, *employers* obtain a simplified and more reliable benefit administration and *consumers* may have access to online information and communities. All can take advantage of easy-to-use online ordering of medication. *Manufacturers* of healthcare goods and supplies may reduce marketing costs significantly because of this new, efficient distribution channel. The same holds true for market research and product testing. Potential losers of the new model obviously are established wholesalers and pharmacies.

And striking wide-reaching partnerships

WebMD cooperates with more than 70 strategic partners, who have contributed more than US\$800 million in strategic investments. Those include healthcare, technology and media companies such as News Corporation (although at a much smaller scale than originally envisioned), Merck Medco, Intel and CNN. The major objective of partnerships is to increase the customer base and achieve critical mass as soon as possible to develop beneficial network effects.

However, financials remain disappointing

WebMD's business model relies on both transactions and advertising, offering extensive high quality content and information to achieve critical mass of users and transaction handling between hospitals, physicians, employers and health insurance companies. The number of registered physicians approximately equaled 185,000 at the end of September 2000.

Total revenue for the year 2000 was around US\$517 million, net loss was above US\$3 billion (largely from non-cash charges) and the net cash used in operating activities was US\$461 million. Revenue for Q1 2001 was US\$185 million, 53% in transaction services, 35% in physician services, 11% in portal services and 1% in other products and services. While the net loss was still

above \$1 billion, when restructuring and non-cash charges were excluded it was reduced to \$33 million.

And critical health plan providers estranged

Traditional players, faced with the new entrant's bold attempt to dominate the industry, started their own Web initiatives. Nine of the largest **manufacturers** of medical supplies and goods founded their own marketplace called "**Global Healthcare Exchange**." At the same time, leading **wholesalers** intended to launch a competing electronic marketplace for medication and supplies. Several large **hospital associations** started their own electronic procurement sites. Arguably the largest challenge seemed to come from **MedUnite**, a coalition of seven leading **health insurers**, including Aetna, CIGNA and WellPoint Health Network. MedUnite was formally launched in November 2000 and took aim at many of the same back-end transactions where Healtheon had originally focused.

So the winner takes all – the losses

In October of 2000, WebMD's stock price had fallen from a high of US\$75 per share to less than US\$10 and investors were pressing for profits. Although still unchallenged in the on-line health care market, the company provided new revenue guidance below expectations and announced a broad restructuring program, including some divestitures to scale back and focus. The two architects of the company's massive consolidation binge seemed to acknowledge that their strategy had failed: Clark resigned from the board, and Arnold stepped down as CEO.

Competitors like MedUnite pulled the brakes. They only initiated a test version with 500 doctors, scaled back their vision and continuously delayed the full launch. Also, some of its founders are pursuing separate Internet strategies.

WebMD had hit several walls at once. Consumers expressed their deep-rooted distrust in commercial healthcare sites. Doctors lived up to their reputation to be "conservative" in IT investments. And insurers and manufacturers

resented the idea of domination and were contemplating their own initiatives. Most importantly, however, the complexity of the overall roll-out slowed down penetration on all fronts.

A monolithic approach to e-nabling such complex an industry as health-care was bound to fail. The highly sophisticated financial backers of WebMD were probably aware of the risk, but in the financial market environment of the hype they had to decide whether they wanted to roll up the market themselves or risk becoming a pawn in somebody else's game. Now, however, we expect them to press WebMD to turn into a network of focused software and service providers to the industry, advancing somewhat slower, but in a more sustainable way. The substantial cash reserves of WebMD provide the critical breathing space for the realignment.

Addendum: Europe not yet fully awake in on-line health

A final remark on the European marketplace: Barriers of entry due to even more sweeping – and entirely incompatible – government regulations in the various countries have prevented initiatives on the scale of WebMD. **Medical supplies and goods** have been the primary target so far. However, the restructuring potential of the Internet is slowly being tested. For instance, in May 2000 an **Internet pharmacy 0800DocMorris.com** launched in the Netherlands, offering medication online, including prescription drugs. According to an EU e-commerce directive, national laws apply, but pharmacies are allowed to deliver across borders – e.g. to Germany, where mail-order of prescription drugs is strictly prohibited. Thus in the short term there might be some legislation arbitrage opportunity, which could initiate more substantial structural changes in the European healthcare industry.

Bridging the “Software Gap”

THE FIRST ROUND OF E-MARKET HYPE has been rather like a gold rush, which involved not only the operators and participants – the gold diggers – but also the infrastructure and service providers – those supplying the gold diggers. It is they who enable e-markets to be built and to operate. Contrary to the shovel producers of gold digging, however, today’s infrastructure providers have to deliver powerful innovations if the electronic marketplace is to live up to its promise. The center of attention is software, as it determines our ability to leverage the Internet. Sadly, software is also the weakest element of the infrastructure. Reinventing software as a service could lead the way out of this “software gap.”

NAVIGATOR THROUGH CHAPTER 8

The “software gap”

Software has rightfully been at the center stage of the development of e-markets. Currently, however, software is a critical bottleneck that prevents companies from fully leveraging the powerful infrastructure of the electronic marketplace. The complexity of software, slow progress in development and compatibility requirements with legacy systems are the main reasons for this software gap.

The duality of software and services

In the connected electronic world, software will increasingly be delivered as a service. This will hide the complexity from the user and allow for pervasive access. Likewise, many traditional service offerings will move to the Web as software. They will fully leverage the ability of the electronic marketplace to be a medium for customized self-services. As a consequence, software and services

in the electronic marketplace are becoming complementary aspects of the same basic essence. In the following we review this development in more detail.

Software solutions for the electronic marketplace

In the beginning, **Ariba** and **Commerce One** have defined the very concept of e-market software. However, critical issues arise in the link to e-business processes of companies *participating* in e-markets. The application layer, with vendors like **SAP**, and the software management layer, led by **Computer Associates**, are facing significant challenges. The most dramatic manifestation of the software gap, however, is found in cross-vendor business process management.

The emergence of service providers

The disparity between the complexity of software and the limited functionality actually used by individuals has long triggered the idea to deliver a more customized version as a service. Several classes of Service Providers (so-called xSPs) have emerged. While some are thriving, many have merely imported the software complexity, and scale effects – on which the business models were based – have remained elusive.

Web services

The most promising approach to the software challenges of the electronic marketplace consists of adopting the services paradigm in a more fundamental way. An architectural solution, **Web services**, has been proposed and is being pursued by many vendors. It consists of self-describing “Lego”-Software, interacting through the Internet cloud. Pioneered by **Hewlett-Packard**, Web services have recently been most prominently adopted by **Microsoft** in its .Net initiative. If successful, they could bridge the software gap and unleash the forces of the electronic marketplace.

Many infrastructure providers are involved at all stages of the development and operation of the electronic marketplace: Hardware vendors, software

vendors, integrators and a wide variety of service providers. The pace of progress, however, is determined by one category only: Software.

Anybody who has ever led an e-business initiative can confirm that it all starts and ends with the software. Software is what makes the Web tick. What you can deliver, how fast you can build it, how well your service performs, how quickly you can evolve – it all boils down to software. For most people involved in an e-business initiative, their very quality of life depends on software.

Today, software has severe shortcomings. We first review the general problem, the “software gap.” We then discuss how in a connected electronic world software and services are increasingly two aspects of the same essence. Finally, we describe in detail the software challenges and the solutions for e-markets and e-businesses, and we show how emerging Web services initiatives promise to address both the software gap and the service requirements of software.

THE “SOFTWARE GAP”

In his keynote speech at Comdex a few years ago, Bill Gates challenged General Motors with the following statement: “If GM had kept up with technology like the computer industry has, we would all be driving twenty-five dollar cars that got 1000 miles per gallon.” A few weeks later, General Motors riposted “Yes, but would you want your car to crash twice a day?

- 1 Every time they repainted the lines on the road you would have to buy a new car.
- 2 Occasionally your car would die on the freeway for no reason, and you would just accept this, restart and drive on.
- 3 Occasionally, executing a maneuver would cause your car to stop and fail and you would have to re-install the engine. For some strange reason, you would accept this too.
- 4 You could only have one person in the car at a time, unless you bought ‘Car95’ or ‘CarNT’. But, then you would have to buy more seats.
- 5 [Apple] Macintosh would make a car that was powered by the sun, was reliable, five times as fast, twice as easy to drive, but would only run on 5% of the roads.

- 6 The Macintosh car owners would get expensive Microsoft upgrades to their cars, which would make their cars run much slower.
- 7 The oil, gas and alternator warning lights would be replaced by a single “general car default” warning light.
- 8 New seats would force everyone to have the same size butt.
- 9 The airbag system would say “are you sure?” before going off.
- 10 If you were involved in a crash, you would have no idea what happened.”

The above exchange has been recounted many times, but few have bothered to emphasize the following.

The *hardware* in the computer industry *has indeed delivered* breathtaking performance increases *without compromises on quality*. Its internal complexity has been hidden, not only from end-users, but also largely from software developers. When the Pentium chip from Intel once had a bug, Apple gleefully ran worldwide competitive ad campaigns – so rare and unacceptable was such an event.

The *software*, however, has not delivered. While it is customary to single out Microsoft in this respect, the company from Redmond actually has a better track record than many others. Through its exemplary support of the software developer community, Microsoft has made substantial contributions to software productivity.

The problem, which we call the “software gap,” surpasses any individual vendor. It is summarized in Fig. 8.1.

Let us perform a quantitative exercise to describe the symptoms of this software gap. As shown in Fig. 8.1, progress in information technology has been supported by very powerful “exponential motors:” Most performance drivers of the infrastructure double at least every 18 months. This means that ***every 15 years we get a factor 1000 in performance “for free”*** (i.e. at the same price). Initially these performance gains only served to make the once prohibitively expensive information technology accessible for commerce. For at least 15 years, however, employees in companies had direct access to IT through affordable terminals and PCs. They could thus have profited from these performance gains to raise productivity on a large scale.

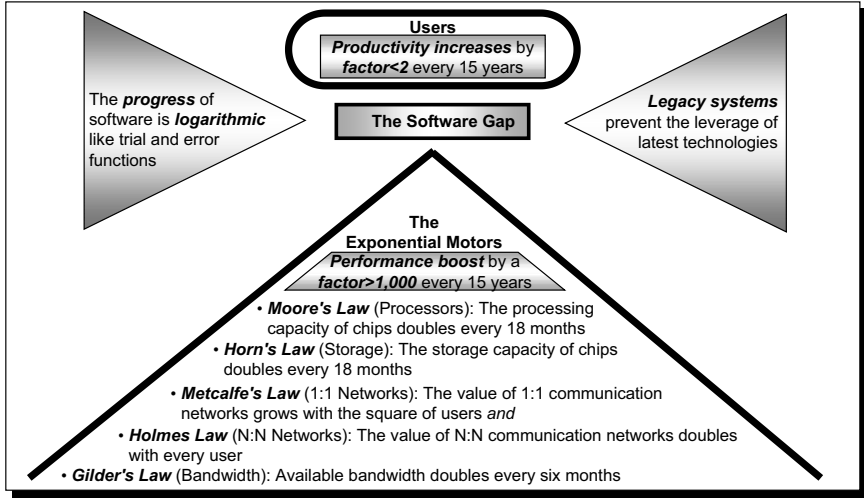


Fig. 8.1 The software gap.

Instead, productivity increases (after inflationary corrections) have hovered around 5% per annum at best, even in IT-centric industries. This yields a factor of two in the same period of fifteen years. While the doubling of productivity might seem a big achievement to some people, we find it disappointing.

The overriding goal of the electronic marketplace is to justify the huge investments by doing better than this in the next fifteen years. Silicon Valley tells us that the exponential motors will deliver another factor of 1000 in infrastructure performance gains at today's prices. How can we make sure this has a stronger effect on productivity?

One might object that software is not the only culprit. People are too lazy to learn new tools and to change their behavior. Although access to IT and the Internet in businesses is widespread, it is not yet fully pervasive. And there are still many "analog" processes, such as meetings, that have not profited from the gains in information technology. While all these objections are valid, we still claim that software is the most important factor. For instance: Ease of use would not be all that hard to achieve. Changes can be made soft. Agents could perform many of the tasks that we still do manually. There are likewise many ways to leverage technology to render the processes of – personal and virtual – meetings effective and in particular to allow immediate and simple processing of the results.

When looking at the roots of this slow advance in software, three points stick out:

- The **progress in software development** is still very slow and the process itself highly “manual.”
- **Users** find software too complex and have difficulties adapting to changes.
- The installed **legacy base** renders the roll-out of even modest progress in software painful. Also, **interoperability** of products from different vendors is an eternal problem.

In order for non-IT people to fully appreciate the interoperability challenge, just imagine what would happen if you had to worry about this in everyday life. Imagine how painful food retailing would become if you had to check whether the pasta you buy (or sell) is compatible with all varieties of cheeses, meats, condiments and beverages out there.

The electronic marketplace is fundamentally affected by this software gap. Before we turn to this, however, we describe an important change in the very nature of software in a connected world. Interestingly, this might eventually point a way out of the software gap.

THE DUALITY OF SOFTWARE AND SERVICES

In the connected world of the electronic marketplace software is no longer a product: It is becoming a service and, vice versa, services are becoming software. Whenever we offer this view we get one of two extremes as a reaction: Blank faces or an “of course.” It is almost easier to engage in a dialogue in the former situation. In the latter we invariably find that people mean such different things when they speak of software as a service, that it renders communication difficult.

Let us address the most common misunderstanding upfront. We are not referring to application service providers or other “xSPs,” such as managed service providers. While xSPs certainly have a role to play – and we comment on it later in this chapter – the “on tap” delivery of current software by itself is not representing the fundamental evolution.

In order to explain what we do mean we might best start with an example.

If today you were to drive to a new place, you could proceed the old-fashioned way and study a map to find the location and the best route to get there. Alternatively you could, for instance, log into Yahoo! Maps. This would find the destination for you, dynamically adjust the scale of the map to your needs and give you detailed driving instructions from wherever you want. Moving up a level in sophistication you might be able to get into your car, type the destination into your navigation system and – through coupling to the global positioning system (GPS) – be guided in real time to your destination. In the near future, your car navigation system will be Internet-enabled, freeing you from a dependence on limited and dated CD-maps and adding the Yahoo! Maps services. It will also allow for a coupling to a traffic control system, so your directions could be dynamically adjusted to road and traffic conditions. Receiving driving directions is actually only a small piece of a much wider range of travel-related services, which could include, for instance, booking planes, hotels and cars. You might perform several of these additional tasks via your cell phone or digital assistant in a manner fully synchronized with your PC.

Whether what you get in the above example is software or a service is largely a question of definition. Certainly the elements are software. However, they are not “products,” but rather elements of a service. This is delivered at one moment in time (and is perishable) and it is highly personalized. It could be priced for usage, or financed via subscription or advertising. Sooner or later any software delivery in the connected electronic marketplace will look like the above service.

The drivers can be extracted from the above example:

- **End-user devices abound** (PC, mobile phone, car navigation system, personal digital assistants).
- **Connectivity becomes ubiquitous** and “**applications**” become **cloud-based**, i.e. they move to the server. Only a browser-type application is needed on the devices themselves.

- **Many different pieces have to dynamically interact** – locating you, delivering the software, accessing the information and service of various travel-related entities.
- **Simplicity for the user** is achieved through a high degree of **customization**, delivering only the relevant information for his **current context**.

While we have used an intuitive consumer example, the same drivers act in the business environment of the electronic marketplace. We can thus summarize:

- **Software becomes a service:** The IT needs of the electronic marketplace are so complex and fast-changing, that the solutions can no longer be delivered as software products, but will increasingly be bought as services.

The reverse is also true:

- **Services become Software:** Many services offerings of companies will increasingly be delivered through the Web. They are thus transformed into Web-based software applications – after all, the Internet is an outstanding self-service medium.

This means that **software**, which was thought of as only a **tool for service provision**, turns out to be the service **essence** on the Web. Already now, it is sometimes hard to tell whether e-markets are software platform providers or service providers. Companies like Commerce One or VerticalNet are both. Often the difference amounts to as little as the pricing strategy. When asked about their core asset, many e-markets point to their software platform. Online financial services, where the “product” is digital, are probably the first to become hermaphrodites between providers of personalized software and services.

The above is what we call the **duality of software and services** (see Fig. 8.2).

We borrow this expression from the famous **duality of light** in physics: Light can be described both as a particle and as a wave. Fundamentally, light

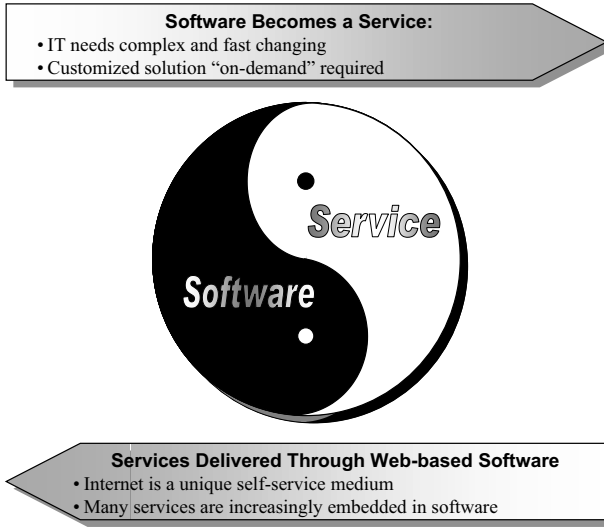


Fig. 8.2 Duality of software and services in a connected world.

has a “dual” nature, i.e. it is both particle *and* wave at the same time. Historically, waves and particles were considered different in nature, but it was eventually realized that they are not. Specific phenomena in optics, however, are sometimes easier to understand in either the wave or the particle “picture.” This has often been compared to Yin and Yang, the complementary ways of experiencing the *one world* in Eastern philosophy.

In the same way we propose to think of software and services as different experiences of the same phenomenon in a connected, electronic world. Again, depending on the context, one or the other description might be more useful – but they are only two sides of the same coin.

The question arises, however, what *architecture* might support this software/service paradigm. The answer is given in the current Web services developments. They can also be powerful in overcoming other aspects of the software gap. We come back to these technical aspects in the last section of this chapter.

SOFTWARE SOLUTIONS FOR THE ELECTRONIC MARKETPLACE

Let us now review the current software solutions for the electronic market-

place: E-market solutions, the application software layer of e-business and the management software layer of e-business. In trying to support business processes across applications from different vendors, finally, the software gap is most prominent.

E-market solutions

The early evolution of e-markets has been tightly associated with two dominant software players: Ariba and Commerce One.

→ **Searchlight 23:** Ariba versus Commerce One – the early e-market builders (p. 261)

Both vendors came from the procurement side of e-commerce, but have evolved to provide more comprehensive “marketplace” software solutions. They are associated with many of the major electronic markets. While Ariba has resolutely remained a solution provider, Commerce One has been more adventurous and has participated in e-market revenues. For a long time the offerings of Ariba and Commerce One used to define the very concept of an e-market.

As important as these solutions may be, the extent to which innovative concepts can be realized and deliver value depends even more on the e-business infrastructure deep in the general enterprise landscape. Not surprisingly, Ariba and Commerce One have had to cede their pivotal position to other enterprise software vendors.

The application layer of e-business

The functioning of B2B e-commerce requires the seamless integration of all the enterprise applications to assure *unbroken processes*. This is a big challenge. It is still not uncommon to see leading edge e-commerce applications ending in a manual/fax-based reprocessing of the information to reach the so-called “legacy systems.”

The most important players providing applications can be segmented into three types:

- *Enterprise Resource Planning (ERP)* vendors, in particular SAP, Oracle, Peoplesoft and J.D. Edwards
- *Supply Chain Management (SCM)* vendors, like i2 and Manugistics.
- *Customer Relationship Management (CRM)* vendors, such as Siebel and E.Piphany

All of these strive to make their software work seamlessly with marketplaces. In part, they enable private or public marketplaces of their own. With the rise of the Internet, the concepts of personal vs. intra-company vs. extra-company workflows had to be fundamentally revisited. As an example of the challenges facing these vendors and the innovativeness developed in addressing them we analyze the player with the most sophisticated pre-Internet solution: SAP.

→ **Searchlight 24:** mySAP – overcoming the “innovator’s dilemma” (p. 266)

The management layer of e-business

Although e-business applications are important, there is a whole critical layer of “management” software underneath them. Parts of this layer were at one point called “middleware;” however, this term suggest a software of lesser importance, connecting systems software to applications. This view is no longer appropriate.

The relevance of the management layer has been well described by Ken Fitzpatrick, head of global marketing at Computer Associates, the leading vendor in this field:

“The Internet and e-commerce hype imploded in the year 2000. Ironically, however, in that very year their importance for enterprise processes made a quantum leap forward. E-business moved center stage: rather than being run as a separate initiative it is now the key determinant of the core processes in a company. ‘Bleeding edge’ e-commerce applications lost their luster as businesses worry about managing their electronic processes within and beyond enterprise boundaries: their (predictable) reliability, accessibility, flexibility,

performance and security. This ‘management layer’ of e-business software is where CA excels.”

→ **Searchlight 25:** Computer Associates – the e-business manager (p. 270)
E-business management software involves three sub-layers:

- *Infrastructure management*, managing the systems, networks, databases, storage and security of the enterprise.
- *Information management*, managing the access to, aggregation and analysis of data generated by the applications.
- *Business process management*, managing business processes across applications and beyond enterprise boundaries.

What were historically small subsegments of infrastructure management, e.g., storage and security software, have developed into hot areas. Already multibillion dollar markets today, driven by e-business they are expected to show continuous growth rates up to 30 percent per annum in the years to come. They contain shooting stars of the last years such as Veritas and EMC in storage and Checkpoint in security. Other areas, such as the management of systems, networks, databases as well as desktop and mobile devices, have also shifted towards the center of attention for e-businesses.

Information management has surpassed the stage of mere data warehousing, trying to ensure the consistency and accessibility of all information. It also left behind the idea of so-called executive information systems (EIS). Instead it focuses on e-business analytics – eventually companies will want to leverage all the data assets they accumulate to improve their business.

It might be worthwhile to emphasize that storage, security and information management will gain even more prominence in a service paradigm of software. When access to critical applications is network or cloud-based, security functions like proper authentication and authorization are all-important. The same is true for storage concepts and information management tools.

The software gap in business process management

Business process management (BPM) is the most complex (and least developed) layer in e-business management software. This is where the software gap opens most widely.

There are two primary process automation challenges:

- No single application vendor addresses all the needs of companies in e-business. When combining various “best-of-breed” solutions companies have to integrate across the applications of different vendors (EAI)
- Collaborative Commerce requires the integration of processes across enterprise boundaries (B2BI).

Today, so-called e-business platforms address these challenges. Current solutions by vendors like IBM, BEA Systems as well as smaller companies like Tibco and WebMethods contain what amounts to a “glue” between different applications. In terms of process management, this is in many ways a step back from what integrated application platforms, such as SAP R/3, had provided. While R/3 had business processes as the defining elements, when gluing together “best-of-breed” applications from different vendors through e-business platforms the process (or workflow) view across the applications is lost. Platform vendors thus strive to top their products with a **business process management** capability. They supply tools to (re)build workflows and customize meta-processes, integrating more modular applications from different vendors and across enterprises. It is hard to see, however, how this will ever cease to be an arduous task, taking a long time, triggering large integration bills and creating tremendous issues for maintenance or further development, e.g. scalability.

Consequently, e-businesses face the following dilemma: Either they limit themselves to software that is available, that can be implemented in a finite time and that works – but severely restricts the things companies can do. Or they pursue their competitive advantage through optimized processes – but face a software implementation and management nightmare. In either case,

their flexibility to change quickly disappears. This is the strongest manifestation of the software gap in e-business.

Fundamental innovations are needed to allow for progress towards the real demands of the electronic marketplace, such as:

- An e-infrastructure that **business people** can quickly assemble and use.
- A maximum amount of **flexibility** to adapt to the fast evolving needs of companies, e-markets and business webs.

Only if this is achieved can businesses strive for truly many-to-many interaction, inside as well as outside their company boundaries. Collaborative Commerce becomes a reality and we start leveraging “Holmes’ Law.”

Before we move to services, let us mention another concept that has been promoted to make collaborative commerce more effective: “**Peer-to-Peer.**” While the term is used in a business and collaborative context, it is most relevant as an architectural concept. We elaborate further on this in Insert 8.1.

INSERT 8.1: PEER-TO-PEER (P2P)

The rise of Napster has spawned an interest in so-called peer-to-peer (P2P) models in the electronic marketplace. Basically, peer-to-peer means that a network of users or devices interacts without central control. It can be used in various contexts.

Peer-to-peer business

eBay is a model for peer-to-peer business. One broad category, namely consumers, acts as buyer and seller of goods. Napster is a similar model, except that so far it only serves to exchange music and no transaction is involved. It could, however, be used to enable commerce between users of such a service, although in practice this would probably lead back to an auction-type model.

A word of caution here: peer-to-peer businesses do not necessarily use peer-to-peer architectures (see below). For instance, neither eBay nor Napster do – that is why you can (threaten to) shut them down. Some Napster-like ser-

vices such as Gnutella or Freenet, however, do use P2P architectures – which makes it almost impossible to shut them down.

Peer-to-peer collaboration

In a B2B environment, P2P is more about collaboration. Imagine a network of professionals, such as consultants, who act in different geographical regions. They could establish a common knowledge management that would not reside in any central place but instead would be distributed over “nodes” of the individual groups with a common directory to describe the assets in each location and provide a unified view. These nodes could be file servers, or in the extreme, individual PCs. Using information on other “nodes” could involve transactions. This knowledge sharing is only pursued by “peer” businesses that do not strive to compete, but instead establish a collaborative relationship.

Such *P2P collaboration is typical for decentralized networks*, whether within a company or crossing company boundaries. In this evolution of collaborative commerce P2P is of significant importance.

Peer-to-peer architectures

“Peer-to-peer” is most significant as an architectural concept in information technology. Here it denotes the direct exchange of services or data between networked computers. Unlike today’s Web environment, with powerful servers and thin clients, in a P2P environment computing devices become peers that contribute all or part of their resources (e.g., storage, processing capacity, etc.) to an overall computing effort. In a P2P architecture, client devices become service providers as well as service consumers.

Peer-to-peer in processing is distinct from traditional parallel processing. In the latter, processors collaborate, but are still under central control.

Peer-to-peer architecture is a very intriguing technical concept for a networked world without central organization. Thus the issue is hot in many technology companies. Intel is one of the most prominent companies investing a significant amount of resources driving P2P forward.

We expect to see a rich display of innovative applications and collaborative models when the prevailing business mindset evolves from fighting P2P technologies to leveraging them for collaborative networks. If this occurs, “Peer-to-peer computing could be as important to the Internet’s future as the Web Browser was to its past,” as Pat Gelsinger, CTO of Intel’s Technology Architecture Group has claimed.

THE EMERGENCE OF SERVICE PROVIDERS

To some extent service providers have tried to address the software gap. The most important categories targeting the IT infrastructure are commonly denoted as **xSPs**. They include:

- **ISPs.** Internet/Telecom Service Providers, such as AOL (for consumers) and the large local exchange carriers.
- **HSPs.** Hosting Service Providers, such as Exodus/Globalcenter.
- **ASPs.** Application Service Providers, such as USInternetworking and Corio/NTT.
- **MSPs.** Managed Service Providers, e.g. for security (MyCIO, OneSecure) or storage (Storage Networks, Sanrise).

Companies that have started out in the infrastructure-centric layers (ISPs and HSPs) move up the value chain. We restrict our discussion to the software-related areas, application services and managed services.

Application service providers

ASPs started out as a category a few years ago, building on the old notion by Sun Microsystems that “the network is the computer,” a precursor of the service paradigm of software:

Software applications are becoming too complex for many companies to implement, manage and use. At the same time, broadband Internet access is

becoming as ubiquitous as electric power supply or water – actually more so, as low-energy data signals can be transmitted wirelessly. It thus should be attractive for enterprises to access applications “on-demand” as a usage-based service, rather than buying software licenses. This software-on-tap model came to be known as application service provision. The individual users were supposed to love it, as the truly desired functionalities would be extracted and delivered in a customized way. A browser would be all a user needed to handle.

The logic grabbed the attention of young entrepreneurs and investors, but by and large has not lived up to expectations. Most of the actual business models of ASPs were based on delivering popular applications on tap and making money through the **scale effect** of serving many customers. While ASPs partially solved the software problems of companies, they **imported the challenges of the software gap**, which now affected their own processes. For the model to work, all the hidden costs of software complexity would have to be charged for explicitly. In the end, what customers were willing to pay did not make up for the large management and customization expenses of ASPs, and the scale effects remained elusive.

Managed service provider

Managed service providers have developed a more sophisticated concept. They no longer confine themselves to deliver an “application on tap” but actually manage a specific, if largely software-based, business service to the customer. In their specific context they are developing into catalysts for the service paradigm of software.

Let us take the example of **security service provision**. As security guru Bruce Schneier explores in his book *Secrets and Lies*,¹ the idea that Internet security for enterprises could be provided as **packaged software** is not sustainable. Already for simple building security in the physical world, few enterprises would trust door locks and instead hire guards. The Internet is a **complex system** with interacting subsystems. Such systems are well known to develop unexpected (and almost unpredictable) emergent properties and they inevitably have bugs. Add to this the cyber-properties of attack at a distance, automation of attacks and instant propagation (i.e. sharing) of attack-

ing techniques and you get a flavor of the challenges to Internet security. No product can address these challenges. Only *expert services* can both assure proper processes and dynamically optimize products. Managed service providers also leverage the fact that Internet security experts are scarce (and expensive), but “scalable” when used properly.

As MSPs are a young category we cannot yet assess their general success in the marketplace. Certainly some of them, like Storage Networks, are growing very fast and approaching profitability. By and large they have a better value proposition than ASPs.

All xSPs have been hard hit by the demise of their initial core customers, the dot.coms. Their business might, however, contain a more fundamental flaw: while targeting the needs of their customers, xSP platforms are built on current software (packaged or developed in-house) – thus running into all the problems we discussed. Only when the underlying software becomes more service-friendly will life get easier for xSPs.

Web services

The true solution to the challenges of the electronic marketplace is neither an ever more sophisticated e-business platform nor a simple application on tap. Instead, it requires a change in software paradigm.

The first need is to reduce complexity. Whoever has studied complexity knows that modularization is a critical element in this endeavor. Essentially you need “Lego-software,” i.e. simple blocks with full compatibility. The second need is to introduce a service-like flexibility, as discussed at the beginning of this chapter. It hides complexity from the user. The third need is to make it accessible from all the emerging end-user devices.

An architecture for such a solution is indeed emerging. The process of developing software is changing towards modular and self-describing components. The end goal is to develop “**self-descriptive Lego-software**,” i.e. modular, Internet-based applications called “**Web services**” (or as HP calls them: “**E-Services**”). **Hewlett Packard** was a pioneer in developing the e-services paradigm. Many important vendors, from IBM to Oracle and Sun, as well as some specialists like Bowstreet, are aggressively pursuing Web ser-

vices initiatives. The largest scale effort, however, has certainly initiated by **Microsoft** with its strategic .NET initiative. The Web services paradigm and these initiatives are discussed in more detail in the next case study.

→ **Searchlight 26:** Web services players – the Redmond empire strikes back (p. 276)

The status of these developments is – to be very polite – in its early infancy. For instance, significant progress has to be made in defining common standards, as discussed in Insert 8.2. The idea of Web services, however, is promising. The service concept for software should ultimately allow to build customized applications “on the fly” across enterprise boundaries and with the complexity hidden from the user. Business people could design and activate them.

INSERT 8.2: XML II – TOWARDS WEB SERVICES

In Insert 4.2 we described how the **extensible markup language (XML)** originally focused on providing a more universal, Web-based version of electronic data interchange. As the Web, or “cloud,” itself is about to become the platform for delivering “Web services” it needs an architectural basis for assuring the proper management of these services. In a certain sense the “cloud” is being upgraded to assume middleware functions. These are becoming the core topics for those trying to create XML standards, such as the W3C XML working groups, the United Nations and OASIS sponsored **ebXML** initiative and many less structured initiatives by different groups of e-business players.

The critical point for the future is this: When exchanging data over the Web it turns out that it is not enough to know what the data represent. A supplier, for instance, has to get a confirmation that his price change was received and whether his customer would like to place an order. A uniform way is needed to wrap XML-encoded data and even evoke remote procedures. The leading emerging standard for this is called **SOAP (Simple Object Access Protocol)**, introduced by Microsoft, IBM and others.

Microsoft and IBM (and Ariba) have also joined forces in addressing another issue: How to dynamically find web services in the cloud? In the off-line world we call these directories “Yellow Pages.” **UDDI (Universal Descrip-**

tion Discovery and Integration) provides just that and more: it delivers White pages (contact information), Yellow pages (categorization) and Green pages (technical information how to connect and use a service) in one. Companies like Hewlett-Packard, Intel and Oracle, but also Ford and Boeing, have joined the initiative and the registration service went live with some 260 early members in spring 2001. UDDI goes hand in hand with the **Web Service Description Language (WSDL)**, which is needed to describe the function of a web service and its provider.

It should not come as a surprise that HTTP + HTML + XML + SOAP + UDDI + WSDL is not the end of the alphabet soup enabling web services. People also ponder about when and how to reject a complex transaction. **XAML (Transaction Authority Markup Language)**, for instance, will be able to undo a transaction involving multiple web services if one of them fails. And about many more things ...

The substantial progress in these areas over the last year is a clear signal that web services are gaining shape. And XML is the critical enabler for their development.

Even modest improvements toward this Promised Land would allow xSPs to deliver Web-based services much more effectively. The most important catalysts of these Web services, however, could ultimately be the electronic marketplaces. We have already seen that their development has led them away from mere vendor-matching and transaction platforms towards enablers of process integration and differentiating service provision. In their evolution towards supporting dynamic trading partner networks **e-markets will become hubs for the provision of B2B Web services**. They can fill the role to customize many Webservices and to make them functional in the specific environment of a trading partner network.

While these developments will take time to become a reality, critical software platform decisions today have to be taken with a full understanding of the things to come. Eventually the collaborative power of the Internet might truly be leveraged.

NOTE

- 1 Bruce Schneier, *Secrets and Lies*, Wiley, 2000.

SEARCHLIGHT 23: ARIBA VERSUS COMMERCE ONE – THE EARLY E-MARKET BUILDERS

Many software companies entered the arena of providing solutions for e-markets, but two have distanced themselves early on from the pack and wielded an unusual influence in defining e-markets: Ariba and Commerce One.

We give an overview of their achievements, comment on the differences between the two players and discuss their current challenges.

From buy-side solutions to e-market leaders

Ariba and Commerce One were both founded in the mid-nineties in Silicon Valley and originally focused on providing buy-side solutions for electronic commerce. By helping customers reduce procurement costs, Ariba and Commerce One successfully led the adoption of e-procurement by large corporations. Leveraging these successes, the two vendors took the next step and provided solutions for **Web-based e-markets**. Both staged highly successful IPOs in mid 1999 and have been major drivers of B2B e-markets ever since.

By year end 2000, Ariba and Commerce One had achieved undisputed leadership positions in e-market infrastructure:



Fig. 8.3 Ariba vs. Commerce One.

- Ariba had more than 200 customers. The most often quoted is **Cisco**, but FedEx, Dell, HP have also developed a high profile. Some of the exchanges that are powered by Ariba are FoodMarketExchange, ClickPaper.com, Neoforma, e²open, ConstructionZone, and RubberNetwork.com. The company grew revenues more than fivefold to US\$170.2 million in Q4 2000 and at the time was the first B2B pure play to claim pro forma profitability.
- Commerce One counted over 500 customers and a Global Trading Web of e-marketplaces, claiming close to 150 participating marketplaces, more than half of which were operational. Commerce One is perhaps best known for powering **Covisint**, the automotive exchange. GM and Ford are shareholders.

However, as we discuss below, in early 2001 both companies were hit hard by the difficulties of B2B e-markets and the shift of attention towards the integration with internal processes of enterprises.

Similar product offerings, but different business philosophy

Ariba and Commerce One both offer buy-side, sell-side, and e-marketplace solutions (see overview in the table below).

The two core differences are in their business models and partner strategy.

Ariba provides solutions and services for customers to run e-markets, but does not get involved in the management of these marketplaces. A core pillar of its strategy had been the alliance with **IBM** and **i2**, which has, however, been seriously strained ever since Ariba tried to acquire Agile in early 2001. Ariba's strategy has been to extend its offering to become a complete procurement and supply chain management solution provider.

Commerce One, by contrast, has become actively involved in managing marketplaces. For instance, it holds a 2% equity stake in Covisint and receives a share of revenues over a ten year period. Ford and GM, founding members of Covisint, in return jointly own 14% of Commerce One. With the emerging concerns over the (transaction) revenues of some early exchanges, this hybrid

model has become controversial. It limits the ability of Commerce One to build competing marketplaces. On the other hand, it enables the company to run the **Global Trading Web**. A core business partner (and investor) of Commerce One is **SAP**. Commerce One and SAPMarkets offer joint buy-side and marketplace solutions. The agreement gives Commerce One access to SAP’s worldwide enterprise customer base. Commerce One also acquired AppNet, an e-business integrator, in September 2000, more than doubling its headcount and boosting its integration capabilities.

Uncertain future

While the difficulties of early e-market strategies had been apparent for some time, it only hit the business of these two early e-market builders in the first quarter of 2001. Ariba saw its revenue cut in half from Q4 2000, dismissed 30% of its workforce, announced a US\$ 1.8 billion net loss and was forced to abort its acquisition of Agile. Commerce One has fared significantly better, as sales have declined only moderately and the 5% workforce reduction could be partially attributed to redundancies from the AppNet acquisition. The most significant cause for their differences in fortune lay in the state of the partnering strategies of the two companies. While Commerce One was generating significant revenue from its strategic partnership with SAP, Ariba had estranged its partners IBM and i2 at the very moment it needed them most.

For now, both companies have lost their ability to define the development of the electronic marketplace. They might even become attractive acquisition targets for the larger enterprise infrastructure providers searching for opportunities in a down market.

Summary of Ariba and Commerce One

	Ariba	Commerce One
Synopsis	<ul style="list-style-type: none"> ■ Founded in 1996 ■ Headquarters in Mountain View, California ■ IPO in June 23, 1999 at US\$23 per share, raising US\$115 million 	<ul style="list-style-type: none"> ■ Founded in 1994 ■ Headquarters in Pleasanton, California ■ IPO in July 1, 1999 at US\$21 per share, raising US\$69 million
Management	<ul style="list-style-type: none"> ■ Larry Mueller, President and CEO ■ Former President and CEO of Imaware ■ Keith J. Krach, Chairman and founder ■ Former COO of Rasna Corp 	<ul style="list-style-type: none"> ■ Mark B. Hoffman, CEO ■ Co-founder and former CEO of Sybase ■ Robert M. Kimmitt, President and Chairman ■ Former US ambassador to Germany
Financials (Q4 2000)	<ul style="list-style-type: none"> ■ Revenue: US\$91 million (-47% from Q4 2000) ■ Operating income: -60 million ■ Net income: -1835 million 	<ul style="list-style-type: none"> ■ Revenue: US\$170 million (-11% from Q4 2000) ■ Operating income: -26 million ■ Net income: -229 million
Business models (Q4 2000)	<ul style="list-style-type: none"> ■ Software/service provision ■ Revenue structure: 24% from licenses; 76% from services 	<ul style="list-style-type: none"> ■ Software/service provision and revenue sharing ■ Revenue structure: 47% from licenses; 53% from services

Products	<p>Market makers:</p> <ul style="list-style-type: none"> ■ Ariba Marketplace: e-market platform software ■ Ariba Dynamic Trade: auction and exchange application <p>Buyers:</p> <ul style="list-style-type: none"> ■ Ariba Buyer: e-procurement solution <p>Business services:</p> <ul style="list-style-type: none"> ■ Ariba Commerce Services Network: network infrastructure that connects companies to interact with trading partners ■ Global Services: Consulting services for planning and implementation 	<p>E-marketplace solutions:</p> <ul style="list-style-type: none"> ■ MarketSet: for supply chain and manufacturing industries ■ MarketSite: for regional and horizontal focused e-markets ■ Net Market Maker Solution: to build e-markets for small to mid enterprises <p>Enterprise solutions:</p> <ul style="list-style-type: none"> ■ Enterprise Buyer: e-procurement solution. ■ Complementary Products: add-on products for Enterprise Buyer
Customers	<ul style="list-style-type: none"> ■ Over 200 customers, e.g. Cisco, Dell, FedEx, HP 	<p>Business services:</p> <ul style="list-style-type: none"> ■ Commerce One.net: access to Global Trading Web (online trading community) in addition to network of business services for buyers and sellers
Key Partners	<ul style="list-style-type: none"> ■ IBM/i2 (highly endangered) 	<ul style="list-style-type: none"> ■ Services, including auction and content services ■ Over 500 customers, e.g. Covisint ■ Commerce One Global Trading Network <p>SAP</p>

SEARCHLIGHT 24: MYSAP – OVERCOMING THE “INNOVATOR’S DILEMMA”

SAP’s position as the world market leader for operational software has been fundamentally threatened in the late 1990s. A closer study of the events reveals that SAP was not – as often described – a technology laggard missing the Internet, but instead was facing what is known as “The Innovator’s Dilemma:” SAP was too focused on serving its current customers well.

SAP’s case is thus a typical example for the challenges of many excellent software vendors – and actually for many companies at large – who built their strengths in the pre-Internet era. mySAP.com is an ingenious strategy to escape from the dilemma. If SAP succeeds, it will become an exemplary model for corporations mastering the challenges of the Digital Storm.

Background

SAP is one of the world’s largest software vendors. By year end 2000 it had more than 13,500 customers and 10 million licensed users of its software worldwide. SAP software was available in 46 country-specific versions covering 28 languages. In spite of these strengths it was about to acquire the reputation of a legacy technology until the recent launch of its new platform mySAP.

SAP was founded in 1972 in Walldorf, Germany, by five former IBM systems engineers. Their aim was to develop an integrated package of standard application software to automate the complete set of a company’s business processes. This was thought to be an impossible task. Business processes were commonly considered as a complex problem *not amenable to a packaged software* solution and instead requiring *customized software development (i.e. projects)*. SAP’s claim to fame is that it proved that an integrated and *parameterised product* could be built. The breakthrough came with **R/2**, a product which ran on mainframes.

With the rise of distributed platforms, SAP introduced its flagship platform **SAP R/3**, based on English, rather than German, code. In a close partnership with Hewlett Packard, SAP R/3 was enormously successful worldwide, and defined the category of Enterprise Resource Planning (**ERP**). It encapsulated

all of a company’s internal processes such as finance, accounting, production planning and materials management, human resource management, as well as distribution and sales. While Europe had been captured through an integrated general ledger and finance package, the US was conquered based on the uniquely efficient handling of order to payment cycles. SAP thrived in the early nineties with their focus on cost reductions and process efficiency.

The challenge

While SAP was winning the battle against its direct ERP competitors, such as Oracle, Baan, Peoplesoft and J.D. Edwards, in the mid nineties the war was moving to another front:

- 1 Companies were shifting towards external processes, in particular supply chain management (SCM), customer relationship management (CRM) and later Internet storefronts and marketplaces.
- 2 The Internet was creating new, Web-based architectures and more flexible user interfaces.

SAP was slow to respond to these challenges. Competitors, such as i2 and Manugistics in SCM, Siebel and E.Piphany in CRM, Ariba and Commerce One in marketplaces had time to establish themselves. It was a classical example of the phenomenon described by Clayton M. Christensen in *The Innovator’s Dilemma* (Harvard Business School Press, 1997): Like any excellent company, SAP was outstanding at adopting new technologies and functionalities that responded to the demands of its customers. However, its customers, the CIOs of large companies, were demanding integrated, reliable and stable solutions which none of the isolated Web-based applications could deliver. Nevertheless, small Internet players as well as the *departmental* (not the central) levels of larger companies were adopting such new software – and eventually the new players threatened the core business of the incumbent SAP.

Much has been made of the technology challenge to SAP by these companies. However, such discussions miss the point. Based on its enviable customer

base and strong engineering talent, SAP could easily have closed the technology gap. Its difficulties were altogether different:

- 1 While developing new products based on Web technologies, it still had to respond to the demands of its current user base – and for many of those the technologies were not ready.
- 2 It had to learn to sell to different people in the organization.
- 3 It had to find a new pricing scheme. Competitors charged premium prices for functionalities that were only marginally larger than R/3 modules. But upgrades of R/3 modules were a free part of the maintenance contract.

Essentially R/3 was too cheap for what it delivered and progress in individual areas had to be faster than an integrated R/3 release cycle would have allowed.

The answer: mySAP.com

The final answer by SAP was **mySAP.com**. It introduced a well-designed, Web-based **Enterprise Information Portal** (“mysap workplace”). With it, SAP could launch the individual packages, which currently are: SCM, CRM, E-Procurement, Product Lifecycle Management, Business Intelligence, Financials, Human Resources, Marketplace and many Industry-Specific Solutions. Whenever the back-end integration of this functionality was not perfect (it was always perfect in R/3 releases), the **integration could be made “good enough” for the customer** through the portal user interface: providing a common view and some intuitive drag&drop as well as publish&subscribe functionalities.

Several other changes were introduced: Release cycles were abandoned to allow for a rapid development of individual modules. Pricing was changed to abandon the free upgrades. And a “soft migration” from R/3 was introduced, to avoid the “forklift migration” effect of the change from R/2 to R/3.

In the e-market arena, SAP founded **SAPMarkets**. By upgrading the original financial investment in Commerce One to a strategic partnership, SAP quickly produced an e-marketplace. Together with its own e-procurement and

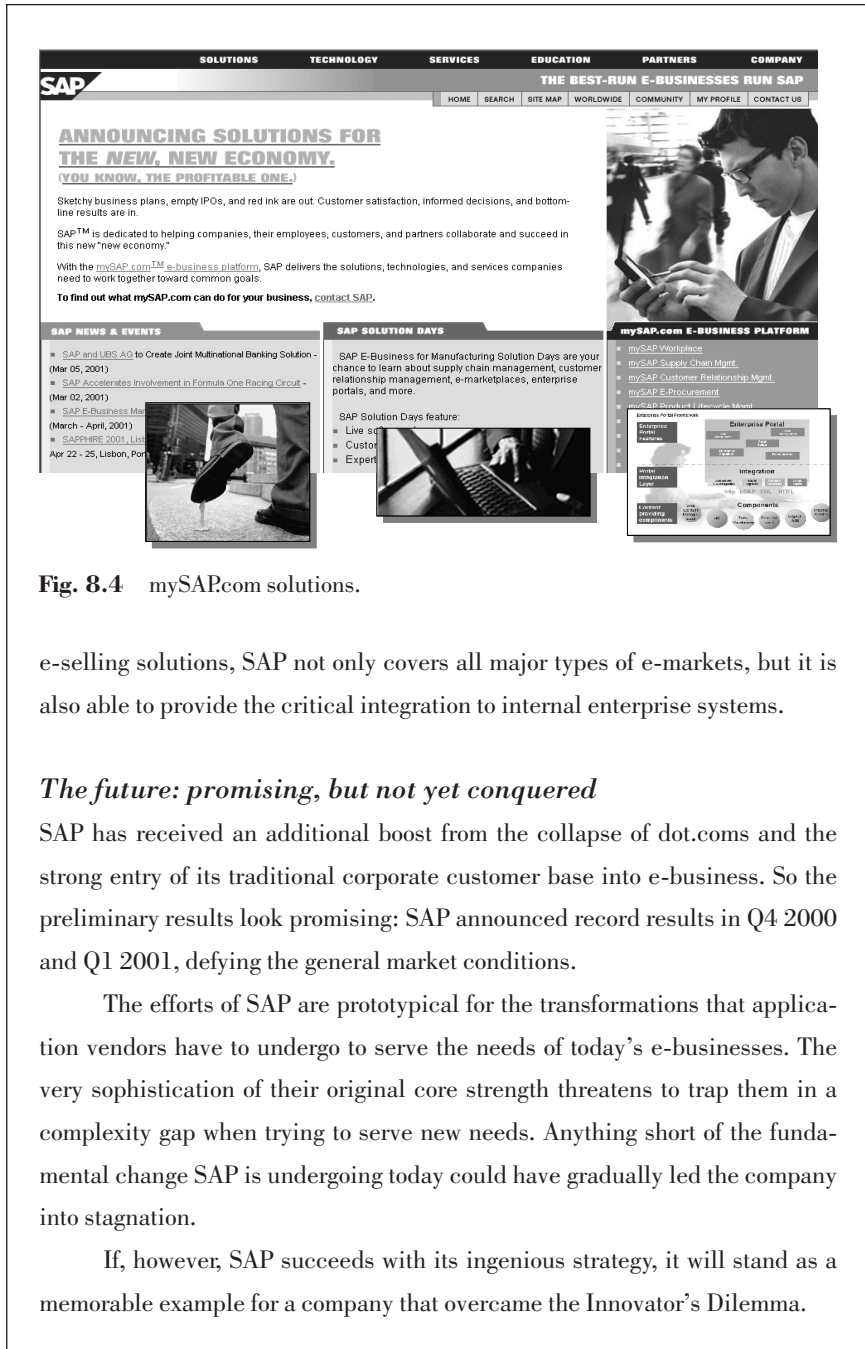


Fig. 8.4 mySAP.com solutions.

e-selling solutions, SAP not only covers all major types of e-markets, but it is also able to provide the critical integration to internal enterprise systems.

The future: promising, but not yet conquered

SAP has received an additional boost from the collapse of dot.coms and the strong entry of its traditional corporate customer base into e-business. So the preliminary results look promising: SAP announced record results in Q4 2000 and Q1 2001, defying the general market conditions.

The efforts of SAP are prototypical for the transformations that application vendors have to undergo to serve the needs of today's e-businesses. The very sophistication of their original core strength threatens to trap them in a complexity gap when trying to serve new needs. Anything short of the fundamental change SAP is undergoing today could have gradually led the company into stagnation.

If, however, SAP succeeds with its ingenious strategy, it will stand as a memorable example for a company that overcame the Innovator's Dilemma.

SEARCHLIGHT 25: COMPUTER ASSOCIATES – THE E-BUSINESS MANAGER

CA (Computer Associates) has long been regarded the “plumber” of enterprise software – essential, but uninspiring. With the introduction of its flagship product, Unicenter, CA had created the category of what is now viewed as a core piece of enterprise IT infrastructure: A unified systems management framework. For a long time, however, CA had failed to capture a significant mindshare in the industry.

This is changing with the realization that “management software” – monitoring, controlling and managing e-business information technology – is arguably the most critical element determining a company’s performance in the electronic marketplace. It includes essentials such as storage and security management, but stretches as far as emerging business process management. The cutting edge technologies, underlying CA’s management solutions, emphasize the new dynamics of this software giant.

Historic perspective: from mainframe software to Unicenter

Computer Associates was founded in 1976 by Charles Wang, Judy Cedeno and Russ Artzt. Its early claim to fame was breaking into IBM’s mainframe customer base to deliver performance-enhancement software to MVS customers. This was unheard of for a start-up: While Microsoft flourished because PC’s had been at the periphery of IBM’s strategy, CA attacked the world’s largest IT player in its core market and managed to establish itself as a complementary software provider. Although CA has grown from a company with under US\$1 million in revenues in 1976 to the world’s third largest independent software vendor with around US\$7 billion in revenues in 2000, its image has for the longest time been closely associated with this success in mainframe software.

The foundation of CA’s business today, however, was laid when it developed its flagship “Unicenter” product. Unicenter started out as the first comprehensive management software for distributed Unix computing and was launched in 1993 in close collaboration with Hewlett-Packard. Alliances shifted as Unicenter became a catalyst for Microsoft’s push into the corporate mar-

ket, and Windows NT has ever since been a core element of CA’s platform strategy.

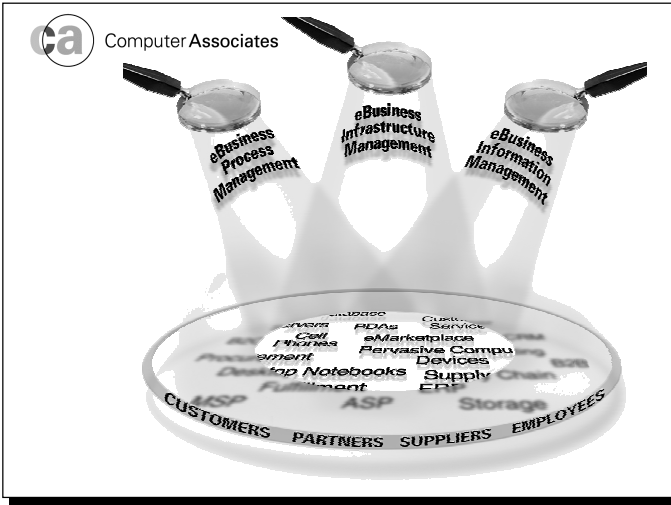
Let us illustrate CA’s corporate history by using an analogy with Volkswagen: If mainframe software was the “Beetle,” i.e., the early success and claim to fame, then Unicenter is the “Golf.” The Golf has been Volkswagen’s flagship and cash cow, ever since its market introduction in 1974. It has been reinvented time after time, always setting new standards of efficiency, reliability and price/performance. With a record setting 20 million cars sold it has firmly captured middle-class Europe. However, the Golf never captured the mindshare of a high-end BMW, Mercedes or Porsche. Likewise, CA software is the indispensable motor of U.S. (and world) businesses and government agencies, assuring the smooth functioning of Wall Street as well as the performance of NASA. But its unique technology never quite captured people’s minds.

The aggressive acquirer

One characteristic that made CA highly unusual in the software industry is its acquisitive nature. As early as 1987 CA doubled in size when it acquired UCCEL (and with it Sanjay Kumar, who in 2000 became CEO of CA). ADR, ASK Group/Ingres, Legent, Cheyenne, Platinum and Sterling Software are most prominent among the many companies CA has acquired over the last years. The effect has been mixed: While the combination of acquisitions and strong internal development has made CA the proud owner of arguably the largest portfolio of innovative software technologies on the globe, somewhere in the course of these acquisitions CA lost its focus. By mid-2000, even CA’s own employees were hard pressed to state what the company stood for.

The new CA: “the software that manages e-business”

As e-business matures, however, CA’s core competencies hold a tremendous value. Under the leadership of a new CEO, Sanjay Kumar, the company is responding with a targeted strategy, establishing itself as the leader in “e-Business Management Software.” David Hochhauser, head of CA’s strategic marketing, introduced the framework illustrated in Fig. 8.5.



Source: Computer Associates

Fig. 8.5 The software that manages e-business.

CA's message is simple. Today's extended enterprises have to manage their e-business across company boundaries to include customers, partners and suppliers and (often remote or mobile) employees. They have to assure that everything, from the core infrastructure hardware and software to the outermost application functions smoothly and seamlessly all the time. This "management" of e-business involves three software layers:

1 Infrastructure management layer

This is the very foundation of any e-business. When companies pause to rethink their e-business software and make sure they can support their core processes and full business volume, this is the layer they have to focus on first. Some principal areas are:

- *Systems and network management.* The monitoring, control and active management of all IT resources. It involves desktops and servers, databases, networks (including service levels) and applications. Infrastructure management has to encompass the most heterogeneous environments as well as processes beyond the enterprise boundaries.

- *Storage management.* Originally part of Systems and Networks, Storage has become a field in and of itself. This is due to the fact that the doubling of storage requirements in enterprises every few months and the subsequent explosion of complexity and costs has made effective storage management a top business priority. Major efforts in storage management, including architectural changes, are unavoidable if this explosion is to be mastered.
- *Security management.* All company data are accessible on the network, all processes run on the network and many outside users (remote or mobile employees, customers and partners/suppliers) need access to the network. Thus efficient and effective security management becomes a primary business need. Content inspection, virus scans and intrusion detection continue to be important elements, but the central issue has moved to the overall management of security. Authorization, authentication and administration (the AAA of security) are at the core of this security management. It also involves access management and will increasingly require comprehensive management consoles that allow centralized management of all aspects of security from one control center.

2 *Information management*

When the infrastructure management of their e-business is solid, companies should review their information management. As digital data pile up, covering everything from internal business information to outside events and customer interactions, extracting relevant information and triggering timely action becomes ever more challenging. Traditional knowledge management software focuses on analyzing and presenting data efficiently. It might also trigger some recommendation, based on previously defined rigid rules. While such traditional knowledge management is already a formidable task, more can and should be expected from an intelligent information management system. Innovative agent-based software is able to learn, interpret trends and perform predictive analysis. Applications of such an intelligent information management system range from infrastructure-centric tasks, such as predicting network load bottlenecks, to customer-centric activities, such as tailoring service offerings to predicted buying patterns.

Effective information management also needs to assure a user-friendly interface to all relevant data sources for company employees. Such an interface has to be customized to specific user roles and integrate internal as well as external sources. Enterprise portals have become the state-of-the-art solution to this business need.

Often, however, the most valuable know how of companies is not contained in traditional information sources but instead in their proprietary business processes. Typically such an e-business has to develop part of the software applications in-house to support these proprietary processes. Companies thus require powerful application development tools. Arguably even more important, however, is a modern application life-cycle management. Without it, e-businesses will face the legacy nightmares of the early in-house software programs that proved incapable of quickly adapting to ever-changing business needs.

3 Business process management

Finally companies need to revisit their e-business process management. Until recently enterprises focused their attention on making best-of-breed e-business applications “compatible.” So-called Enterprise Application Integration offerings started to abound, promising to “glue” the software from different vendors together. Packaged with application servers and minimal workflow tools these products positioned themselves as “e-Business Platforms.” CA’s view is that this level of integration, while technically challenging, will not deliver true value to e-businesses. The goal cannot be to “glue” applications together, but instead to empower companies to optimize **business processes**. An e-business architect needs powerful and flexible machines for the engineers and workers to build exactly what he wants. Yes, he will also need industrial strength glue to link different elements, but this should not be his primary concern. Process modeling and design, an engine for execution, tools for real-time monitoring and subsequent process analysis are crucial elements. Processes have to be customized, flexible and scalable, but also manageable, within and beyond enterprise boundaries. This is what CA is determined to deliver.

It would surpass the scope of this summary to list the comprehensive product architecture that CA has assembled behind this vision. We feel, however, that CA is focusing in on the arguably strongest pain points of today’s e-businesses, namely managing it all and making it all work. The strong technology base of this software giant should enable it to leave a major mark in the electronic marketplace.

SEARCHLIGHT 26: WEB SERVICES PLAYERS – THE REDMOND EMPIRE STRIKES BACK

In 1999 Hewlett Packard started to market a new concept in software: E-services. These were modular, self-descriptive software applications that could interact with one another. HP intended to launch a new era, where software would be customized and delivered as a service. It was ideally suited for the next era of the Internet itself.

The idea to transform software into a service was adopted by the software community at large. In spite of its early vision, however, Hewlett Packard did not succeed in becoming the leader of the movement. Most major software vendors have adopted their own version of the Web services paradigm. Many relevant standards are emerging. Most importantly, Microsoft has thrown its full thrust behind the concept and in its .NET initiative is undertaking the most sweeping reinvention of both itself and of software at large.

In 1999 Hewlett Packard ran a US\$100 million advertising campaign on “e-services” (renamed “Web services” by the industry at large). Behind its attention-grabbing spots lay the simple, but powerful, idea to change the very structure of software so as to enable the modular construction and delivery of Web-based services.

HP has put out the following view of **Chapter Two of the Internet:**

Chapter One		Chapter Two
Monolithic	→	Pluggable
Custom	→	Turnkey
Web Storefronts	→	Modular e-service
Destinations	→	On-the-fly transactions
Do-it-yourself	→	Do-it-for-me
PC only	→	PCs + devices + things

This shows important ingredients of Web services. Hewlett Packard was the first major vendor to popularize the concept.

The new **Web services paradigm** has by now been embraced by many as the way to go. It involves:

- **Modular, Internet-based** applications
- That are **self-descriptive and able to communicate** with one another
- And **fulfill tasks** either themselves and/or **trigger other web services**
- To **carry out** their part of complex **workflows or transactions**.

HP itself had contributed tools for software developers wanting to create web services. The most relevant one was **e-speak**. The e-speak specifications consisted of a blueprint to create web services, with an information model and a consistent set of APIs. In addition, HP had provided an **e-speak engine**, which mediated interactions and aggregated services, allowing these to work even through firewalls.

While Hewlett Packard was a pioneer, it has never managed to lead the Web services movement the way **Sun** has been leading **Java**. Internally, HP

Company	Web Service Initiative
HP	e-Services
Microsoft	.NET
Oracle	.NOW
IBM	Web Services
SAP	in mySAP.com
SUN	SUN One
Bowstreet	Business Web Factory

Fig. 8.6 Web services initiatives.

never committed a software engineering force in the same way that Sun had done. And externally, the threat of Microsoft dominating the industry by using its operating system leverage at first seemed less prominent due to the company's legal troubles and perceived lack of clout in the Internet sphere. Instead, most major vendors have started their own initiatives.

When analyzed more closely, every vendor is defining the term a bit differently.

Most include a rather basic "software-on-tap" service of their current products. IBM and Oracle leverage their e-business platform capabilities. Bowstreet, founded by former IBM employees, is the most significant pure play in this space. SAP is including web service elements in its portal offering mysap.com. SUN has come late to the table, but is highly significant due to its control of Java, Java Beans and Jini – arguably the most relevant precursors of web services modules. The SUN ONE program has finally started to define the direction for the company and – most significantly – has explicitly embraced the all-important XML standard as its basis. All of these initiatives are at an early stage and too vague to allow for a detailed discussion.

The sheer size of **Microsoft** combined with the gigantic thrust it has put behind the **.NET initiative** makes it the currently most important player. Since early 2000 its chairman Bill Gates has been devoting most of his time to developing the new paradigm. The CEO, Steve Ballmer, has captured a core aspect of the new paradigm in the following way: **It is both a user experience and a set of developer experiences.**

The software giant from Redmond has not only put forward a more consistent and complete architectural vision than others. It has also followed up with a suite of products and a timeline of releases for the next two years. And finally Microsoft has already delivered early versions of critical software development environments, striving to take one of its core assets, the world's largest developer community, "by storm."

Microsoft's motivation is not so much to improve software and service delivery in general, but to assure its continuous dominance beyond the era of the Windows-dominated PC. As Microsoft cannot hope to directly control all the

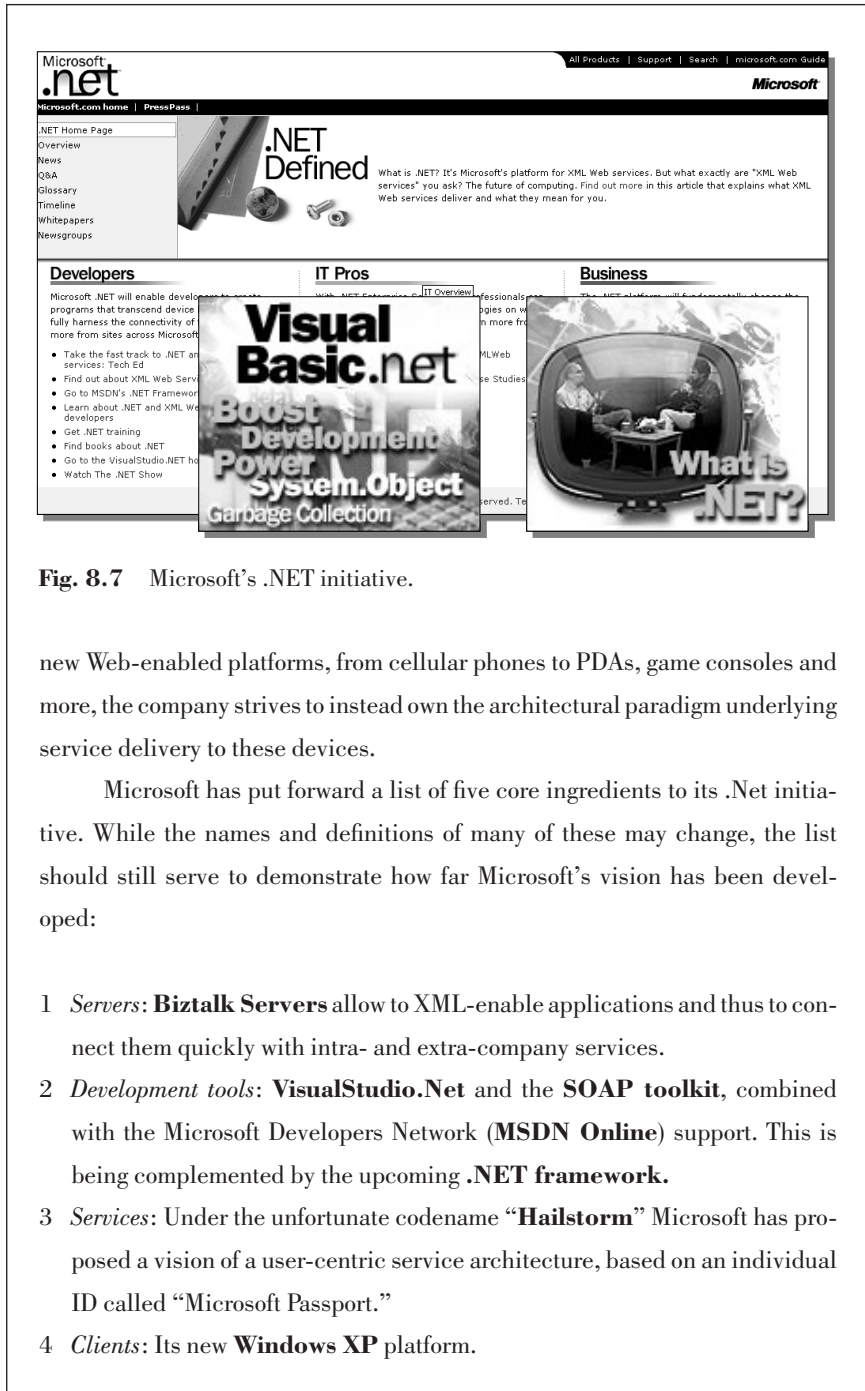


Fig. 8.7 Microsoft's .NET initiative.

new Web-enabled platforms, from cellular phones to PDAs, game consoles and more, the company strives to instead own the architectural paradigm underlying service delivery to these devices.

Microsoft has put forward a list of five core ingredients to its .Net initiative. While the names and definitions of many of these may change, the list should still serve to demonstrate how far Microsoft's vision has been developed:

- 1 *Servers*: **Biztalk Servers** allow to XML-enable applications and thus to connect them quickly with intra- and extra-company services.
- 2 *Development tools*: **VisualStudio.Net** and the **SOAP toolkit**, combined with the Microsoft Developers Network (**MSDN Online**) support. This is being complemented by the upcoming **.NET framework**.
- 3 *Services*: Under the unfortunate codename "**Hailstorm**" Microsoft has proposed a vision of a user-centric service architecture, based on an individual ID called "Microsoft Passport."
- 4 *Clients*: Its new **Windows XP** platform.

- 5 *Experiences*: Essentially Microsoft's content services, such as **MSN** for consumers or **bCentral** for small businesses.

Microsoft is leaving no doubt that the days when all of its products could be shipped in little boxes are gone. And recurring services revenues – an aspect of “Hailstorm” that has not failed to raise concerns – would certainly be a much more attractive business model. If Microsoft manages the transformation, it will arguably be one of the more significant reinventions of a company in US corporate history.

Many hurdles remain

Due to the proliferation of initiatives, standard setting has gained great importance. We describe the efforts in Insert 8.2 “XML II – towards Web services.” The progress in this area during the last year is an encouraging sign that the industry is serious about advancing the Web services paradigm.

All of this activity, however, does not guarantee that Web services will ever (not to speak of “soon”) become a reality. A few years ago a related notion in hardware, the “network computer,” i.e. a low-cost, low maintenance device for network-based applications, seemed a smart idea to many people. It never took off. Times, however, are different. The bandwidth is there, the new devices are there and the complexity problem is hurting market participants on all fronts. The fact that Microsoft is fighting to lead the battle, rather than opposing it, is both a sign for the strong logic and a powerful catalyst in itself. Many standards battles are to come. Many more fundamental issues, for instance around security and quality of service, have to be resolved. And the change will take years. In the meantime, however, service providers in and around e-markets will use even moderate advances to deliver initial value. If the modular Web services paradigm were to eventually succeed, it could well bridge the software gap: when small modules can universally interact we may finally unleash the exponential growth pattern that software has never known.

PART IV

Your Pilot Through the Digital Storm

In Parts I and II, we discussed the birth of e-markets and the nature of the various models which emerged. In Part III, we looked forward to the developments in technology and in e-market structure, which will shape the medium term future of the B2B electronic marketplace. In Part IV, we assist you in devising a successful strategy for the electronic marketplace.

You can have many motivations: You may already be a marketplace owner, searching for ways to reinvent your business to achieve profitability. You may be a supplier, feeling threatened by purchasing platforms and searching for winning strategies in the new environment. You may be a B2B publisher, moving on-line and seeing a large opportunity to develop an electronic market for your audience. You may be contemplating how to best improve your purchasing or selling, via an e-business strategy in the current environment. Or you may be an infrastructure or service provider seeking to support the electronic marketplace.

While in a traditional market view only three basic roles exist – participant, market maker and infrastructure/service provider – this view is too simplistic. The sharp lines both between individual markets and specific roles no longer exist. In a world of dynamic trading networks, an almost infinite amount of possibilities exist, all customized to specific value propositions and business models.

Addressing the piloting needs of all these potential roles poses obvious challenges. We feel, however, that two aspects are common across all situations.

In **Chapter 9** we show that in order to truly leverage the electronic marketplace for your business strategy you will have to rethink your industry from scratch. Why? Because many markets will be fundamentally altered and un-

derstanding how will enable you to shape an attractive role for yourself. In an initial stage this involves analyzing industry environments and trends, identifying core processes and pain points and mapping current e-market strategies. The *ultimate goal* in the electronic marketplace, however, is not the automation of current processes but rather the *creation of new value propositions*. Thus, we show you how to challenge your thinking by building end-game scenarios, how to devise innovative value propositions starting with the *end customer* and how to analyze their consequences for the whole demand network.

In **Chapter 10**, we discuss how, at the level of your individual business, you can launch an e-business or a truly value-creating e-market play. Opportunities abound, both in the up and in the down cycles of the economy. While business is easier in the former, long-term competitive advantage is often built in the latter. We discuss strategy development and rapid prototyping – the two are intimately related in the electronic marketplace. We guide you through an overall process, but then focus in on what we feel are the critical issues: Defining your role, driving for scale and profitability, structuring partnerships and building the prototype.

There is no failsafe set of ready recipes. Our intent over the next two chapters is to stimulate your thinking and to provide guidance, so as to avoid common pitfalls and achieve success in the electronic marketplace.

Plotting Your Course Through the Digital Storm

PERSPECTIVE IS CRITICAL. The most common starting point for businesses in developing their e-plays is their existing position. However, this tends to produce incremental improvements to existing business models and processes. It is particularly inappropriate in the electronic marketplace at this point in time. Too many things are in flux. As we have seen, ambitious initiatives are under way, claiming – rightly or wrongly – to restructure whole industries. It is thus essential to step back and reconsider your industry from the bottom up. You might call it a “mental green field approach.” When you have understood the potential for truly innovative value creation, you will be able to judge the current initiatives in the electronic marketplace and devise your own e-business strategy.

NAVIGATOR THROUGH CHAPTER 9

Understand today's value delivery network and trends

An environmental map of the flow of goods and services in the industry is a mandatory first step. A quantitative understanding, supplemented by qualitative trends, gives you a good basis for where the industry would move without major disruptions.

Identify core processes and pain points

The next step is to distil the most relevant core processes in the value delivery and identify the major pain points in these processes today. Analyze these pain points based on your know how of what an electronic marketplace can achieve. You can thus grasp the efficiency potential and restructuring opportunities of

today's value delivery, including basic dis- and re-intermediation opportunities.

Map out current e-market initiatives

Most industries have seen the development of a diverse set of e-market initiatives. Classify them, map them and analyze them. While many may fail – sometimes in a predictable way – the few remaining could have a deep impact on your sector. Compare with other industries to check your evaluation.

Devise (extreme) end game scenarios and triggers

In order to challenge your current thinking you should devise end game scenarios. These should cover general industry trends as well as specific electronic market landscapes. Make them purposefully extreme, so that their implications, in particular the attractive and unattractive roles, become very clear. For each scenario the major set of triggers should be made explicit.

Design end-customer driven value innovations

The critical creative step consists of rethinking how the electronic marketplace can be leveraged for novel value propositions. Such an analysis always starts with the end-customer and works backwards through the demand network.

Figure 9.1 illustrates the process followed in this section.

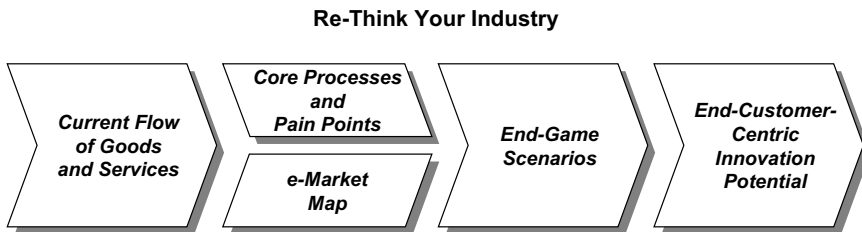


Fig. 9.1 Structure for a mental green field approach to your industry.

UNDERSTAND TODAY’S VALUE DELIVERY NETWORK AND TRENDS

The inevitable starting point is an environmental overview of your industry today. This should involve a solid understanding of the needs of the end customers, a description of the categories of industry participants, a quantitative understanding of market segments, the major flows of goods and services and the most important trends (Fig. 9.2).

In our experience the most useful place to begin is to draw out a series of maps of the value chain of your industry (as many sectors are still organized linearly today). These should describe:

- Major participant groups and dependencies
- Flows of goods and services
- Information flows and transaction points.

As discussed in preceding chapters, the information flow increasingly decouples from the flow of goods and services in the electronic marketplace.

Figure 9.3 shows a simplified example for the second map – flows of goods and services – in the construction industry.

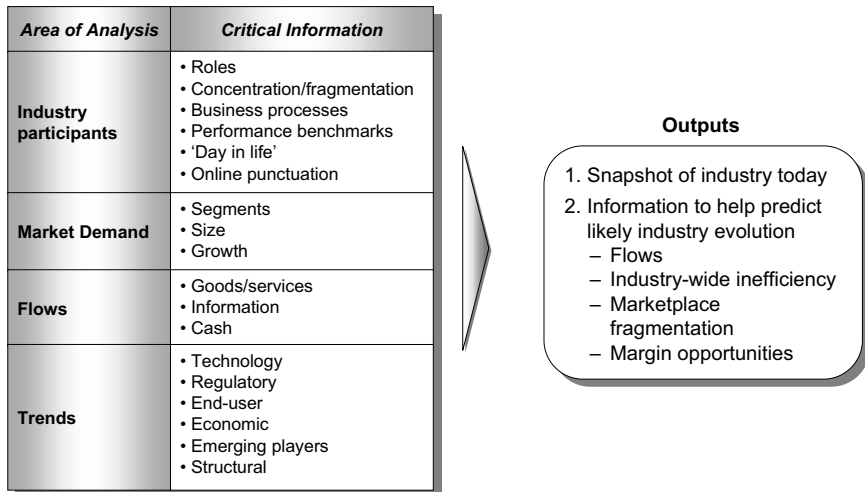


Fig. 9.2 The environmental overview.

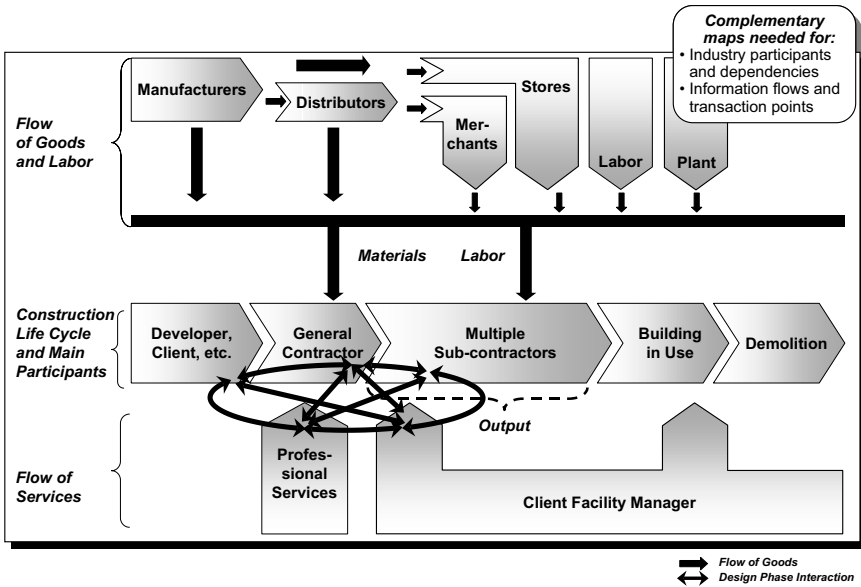


Fig. 9.3 Construction industry: flow of goods and services.

At the center we depict the core construction flow. The many steps required for the supply of goods are at the top. The complementary provisioning of services to the core delivery process is at the bottom.

This illustration shows the complexity of the input flows in construction projects, as well as the large number of participant groups involved in the design phase of a project – already suggesting potential for dis-/re-intermediation and the value of collaborative tools. Two complementary maps could also illustrate critical information about the high level of fragmentation in the participant groups and the complexity of the bidding and tendering processes – aspects we previously discussed in Chapter 2.

One of the most relevant trends in the construction industry is the increasing complexity in the design process, driven by the need for earlier input from multiple participant groups – architects, facilities managers, engineers, contractors, fire and safety officers and more. In many countries, the widespread inefficiency (or in some cases even corruption) in tenders and/or the severe financial distress of some participants in the value chain are also noteworthy factors to pick up on in the environmental overview. These have a strong

impact on the eagerness of these players, or lack thereof, to adopt new processes.

This first step should give you an idea of where the industry would develop without major disruptions or innovations.

IDENTIFY CORE PROCESSES AND PAIN POINTS

Next, one should take a step back from the organization of the industry participants today and identify the underlying **core processes**. The goal is to understand in a more fundamental way what real value the industry delivers and how it is created today.

Then, one should identify the principal **pain points** in the core processes. It is critical to do this analysis on the processes, and not on the industry value chain we discussed before. The electronic marketplace improves processes – a potential restructuring of the value chain is a result.

Figure 9.4 identifies the three core processes for the construction industry: Project tendering and bidding, project collaboration and management as well as specification and procurement of products and services. The figure also lists a sample of pain points in that industry.

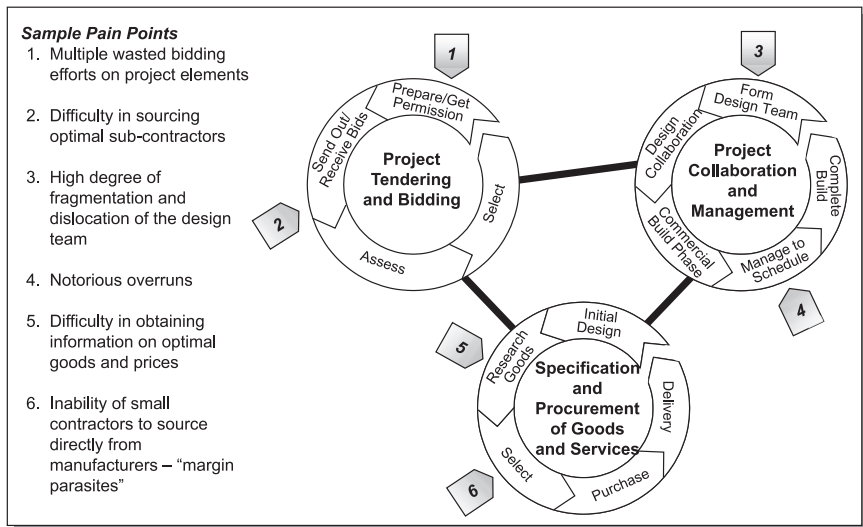


Fig. 9.4 Core processes and sample pain points in the construction industry.

Again, the information flows should be mapped separately. A word of caution here: Do not spend too much time trying to understand all the details of these core processes. The **only goal** of this exercise is to understand the participants and the pain points.

The above analysis should give you an indication as to where processes could be beneficially deconstructed and reconstructed. In a certain sense you are doing **at an industry level**, what **reengineering** in the early nineties set out to do at a company level. Reengineering, of course, became a victim of its own appeal and the term was widely misused as a euphemism for rigid corporate cost cutting. But this does not invalidate the ideas. It is characteristic of the electronic marketplace that it introduces efficiency gains in the **external** relationships of companies, rather than the internal processes that were the earlier focus. An immediate consequence is, that – contrary to intra-company reengineering – the leaders in the electronic marketplace typically **grow very fast**. The cost pressure at the industry level affects the laggards, who get the worst of both worlds.

Some simple questions about control and current profits can lead to valuable insights in this analysis of pain points in the core processes. For the above-mentioned core process of “Specification and Procurement” in the construction industry examples are:

- **Question:** Who controls the specification of products?
- **Answer:** No single participant group, but rather a combination of architects, engineers, general contractors, sub-contractors, facilities managers ... and often many others.
- **Implication:** A successful value proposition to address the specification and procurement of supplies will need to include **all** these participant groups, and will require a high level of collaborative functionality.
- **Question:** Are existing distributors making excessive margins?
- **Answer:** In general they are adding significant value (consolidating highly fragmented, geographically disparate suppliers; breaking bulk; providing delivery of goods which are difficult to handle) for relatively low returns.

- **Implication:** Immediate widespread disintermediation of wholesalers is unlikely. Any long-term winning e-play will need to incorporate these high value offline activities.

This analysis of current processes and their pain points should give you a basic understanding of how to streamline the current processes of your industry in the electronic marketplace. This is, however, only an intermediary step.

MAP OUT CURRENT E-MARKET INITIATIVES

As we have extensively discussed throughout Part II of this book, most industries have seen the development of a diverse set of e-market initiatives. In many respects these offer valuable insights into what might and might not work in addressing inefficiencies and creating new value. The successful ones will also become part of the general industry landscape and have to be incorporated

<i>Information</i>	<i>Example: Citadon</i>
Category	• Neutral e-market
Value Proposition	• Efficiency gains and value creation for all participants in the Construction industry
Business Model	• Mixed – main source of revenue Corporate subscriptions
Ownership	• ICG, GE Corporation, Hines, Warburg Pincus, Partech International, Goldman Sachs, Oracle Venture Fund
Technology Platform	• Accuweather, Akamai, AvantGo, Cimmetry, Exodus, iNet, Infosys, Oce, Oracle, Storage Networks, Uniscape
Alliances/Partnerships	• BSW, Charrette, enConstruccion, Everdream, Grupo Picking Pack, Purchase Pro, Ridgeway
Participants (to date)	• 36 participants (e.g. 3Com, American Airlines, etc.)
Success (to date)	• 30,000 active subscribers, over 1200 projects online with construction value over \$110bn, over 30 countries
Core Strength	• Strong business process and project management software • Strong management team
Core Weakness	• Proposition insufficiently differentiated vs. competition • Difficulty of adoption by users

Fig. 9.5 Key e-market data – example: Citadon.

into the environmental analysis. It is useful to **map** these initiatives and to **juxtapose** them with the pain points in the core processes.

Figure 9.5 lists the top level information to be gathered.

Based on this information a map can be drawn that relates the e-market initiatives to both the industry participants and the core processes. Figure 9.6 shows a strongly simplified version of what this would have looked like for the construction industry in the summer of 2000.

Many things can be learnt from this analysis. As seen in Fig. 9.6, in the construction e-market space by mid 2000 many e-markets had emerged: Buzzsaw, BidCom, BuildPoint, Cephren, Red Ladder (and more). All of them were very broad plays, offering functionalities in collaboration, project management and tendering. To a potential participant they all looked very similar. Further examination would reveal that each was slightly ahead on one particular aspect of the proposition – but none of them could offer a solution that was truly excellent in even a single area. Potential customers were left confused and overall volumes were disappointing. Those customers that were converted complained about the complexity of the process and the excessive training required. The status was clearly untenable.

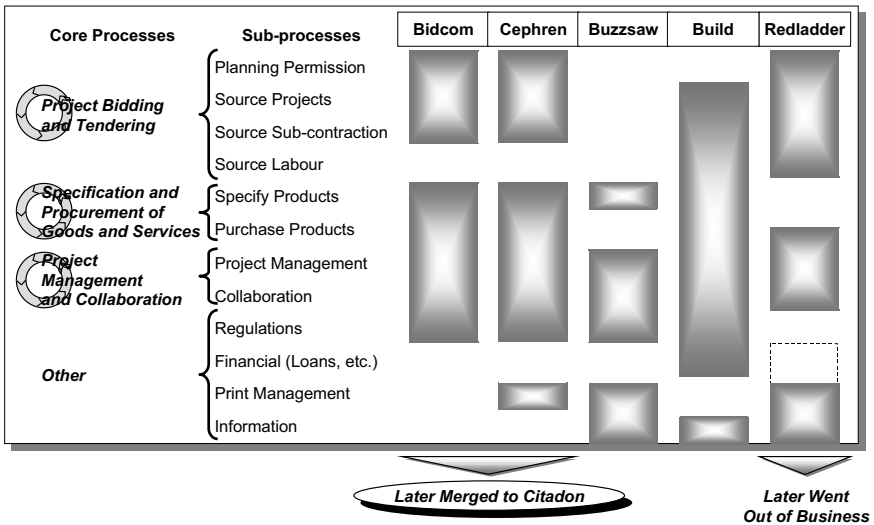


Fig. 9.6 E-market map for the construction industry – status summer 2000.

As expected, the e-market landscape quickly changed. A few months later, Red Ladder had gone out of business and Bidcom and Cephren joined forces to form Citadon. But even the remaining markets will have to refocus their activities.

At this point you might be tempted to start moving on to develop your own strategy. In many ways, e-business and e-market initiatives, in particular when launched by today's industry participants, have suffered from thinking too much along these lines of current processes. As a consequence, many strategies have run into difficulties. The most common are:

- 1 Becoming locked into a platform that rigidly automates sub-optimal processes
- 2 Sharing equity and control with "partners," who oppose or slow down the evolution towards tomorrow's environment
- 3 Lacking a forward-thinking, value-creating differentiation.

In order to avoid these traps you should force yourself to think further ahead as described in the next two sections.

DEVISE (EXTREME) END GAME SCENARIOS AND TRIGGERS

We suggest you liberate yourself from today's environment and think about potential future industry scenarios. These can be purposefully extreme. They should involve both the prevalence of different value propositions and the dominance and evolution of the main players. Finally, the core triggers towards these scenarios should to be identified.

We use the terms "end game" or "future industry" scenarios to refer to a configuration of the industry (competitors, customers, products and services and basis for competition) that is possible and logical in the future, beyond five years. "Triggers" are events that take one closer to the game, such as technological breakthroughs, a shift in customer preferences, major new entrants and mergers and acquisitions just to name a few.

In some fast-moving industries such scenarios are more challenging than in others. They can differ significantly in terms of technologies, end-user pref-

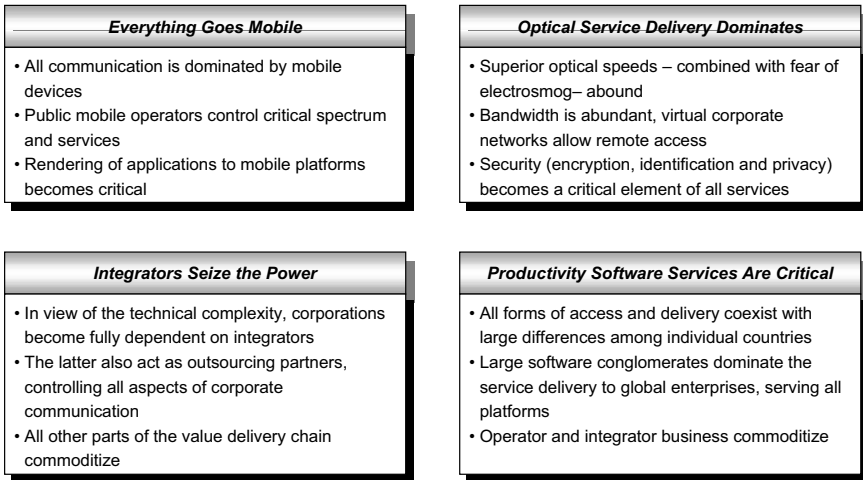


Fig. 9.7 Example end game scenarios in communication services.

erences and industry structures. Examples include all industries dealing with digital products and services. Someone wanting to organize an e-play to deliver communication services to enterprises might be faced with the extreme scenarios shown in Fig. 9.7.

All these scenarios have dramatic implications on power versus dependency, value versus commoditization, as well as industry structures at large. To a certain extent these scenarios could co-exist. It is not hard to point out what triggers would be early indicators for a shift to one predominant scenario.

In many industries the differences between scenarios are less extreme.

The emergence of e-markets suggests at least another generic set of scenarios. What if some of the markets were – possibly in a modified form – truly successful? Many companies still struggle with how to react to the formation of an e-market in their industry. At first everybody rushed to have an equity stake in one of the players, as it was supposed to be a financially attractive as well as very powerful position. But some – most notably suppliers – were not invited and continue to feel threatened,¹ while others paused to think deeper. Thus, scenarios in any industry could evolve around the fate of dominant markets.

For instance, many people converge on the built-to-order car as the core goal of the **automobile industry** and might thus build scenarios around the different ways of achieving this. At a sub-level these scenarios would involve

the fate of predominant consortia efforts, such as Covisint: They could hold complete power and redefine all core process; they could commoditize, as everybody starts using their basic services, but is not deriving any differentiated value; or they could break apart as a result of profitability and governance challenges. For smaller players in the automobile value network, these scenarios might be a core focus and they might want to think through them to a greater level of detail.

The importance of end-game scenarios is that they give you a wider perspective. They should push you to take the initiative and drive towards what you consider the most favorable scenario in a consistent way. For the less ambitious, these scenarios can serve as a check on their strategies, to see what end game they would favor, what triggers they should watch that drive towards it and how to best hedge against the less favorable roles in other outcomes.

DESIGN END-CUSTOMER DRIVEN VALUE INNOVATIONS

Equipped with an understanding of pain points in current core processes and having sharpened your strategic thinking through extreme end game scenarios, you are now ready to analyze the more immediate innovation potential in your industry.

It is always easier said than done to “think out of the box.” The challenge is not to trigger *wild* ideas; the difficulty lies in generating *useful, unusual* ideas. How can one guide innovative thinking beyond mere brainstorming? If one has to free oneself from today’s process, what is the best starting point?

In our experience the answer is always the same. It is the customer. However, typically it is not your immediate customer. Rather, think about your customer’s customer, or more precisely the end customer of the industry. Many true B2B innovations have developed from that starting point. Take for example the miles program of airlines. This was initially a B2B service developed for British Airways – the airline later acquired the provider. In an e-market context the B2B2C examples of Chapter 5 serve to illustrate the point.

One of the distinguishing factors of the electronic marketplace is that supply chains become demand networks, increasingly organized around this end customer. Almost all markets today are buyer’s markets and if anything

the electronic marketplace will reinforce that trend even more. You should thus work backwards from the desired experiences and possible innovations to serve the end customer. This will eventually give you the best understanding of what changes could happen in your more immediate environment.

Let us illustrate this again with a very simple example from the Construction industry. Consider the end customer segment of Fortune 500 conglomerates. This business will likely have multiple facilities across the US and indeed around the globe. There will be an ongoing process of sourcing new buildings – either by commissioning construction, or through leasing or other arrangements. One end game scenario could be that facility managers will evolve to completely manage these processes as a service to the corporations. In Fig. 9.8 we illustrate such a scenario

This highly simplified example exposes several typical features:

- A new intermediary (the facility manger) captures the potential to create new value for the customer.
- The complete customer solution crosses traditional “product”-centric industries’ lines.
- The linear B2B chains get broken into their core processes and the intermediary interacts directly with them in a dynamic network.

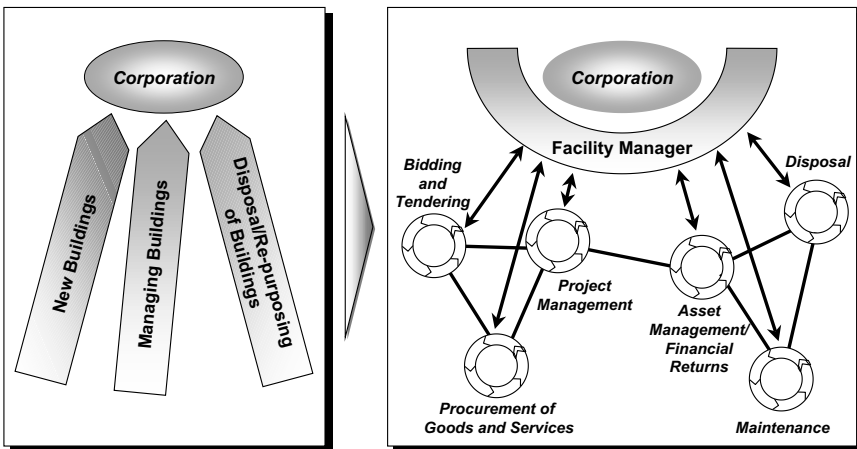


Fig. 9.8 Customer-centric demand network restructuring in the construction industry.

the decoupling of the information flow and disintermediates other traditional industry participants.

Clearly, in such a hypothetical scenario the attractive e-business/e-market roles for the rest of the demand network get redefined. Had a player focused on automating one of the traditional value chains he would now look utterly superfluous.

In order to find the innovative e-plays, you should check all the potential effects of the electronic marketplace introduced in particular in Chapter 2 to redefine relationships:

- Watch out for decoupling of information (and transaction) flows from the flow of physical goods and services.
- Explore the potential effects from lowering the cost-to-switch or the cost-to-serve.
- Analyze whether some parts of the value chain could be disintermediated, or instead, whether infomediaries might satisfy a more complete customer need.
- What structure of collaborative networks could be created?
- What platforms and services could be built on and who would be best suited to deliver it?
- What would be the new options based on increased transparency at various stages of the value network?
- And finally, what is the new value to end customers and whose value add in the industry would suffer?

These questions and examples, as well as the discussions of the electronic marketplace throughout the book, should enable you to derive truly innovative value propositions. It enables you to understand the disruptive power that the electronic marketplace could exercise on your industry.

Before zooming in on how your own company can shape its part in this industry we summarize critical project experiences in Insert 9.1.

INSERT 9.1: CRITICAL PROJECT EXPERIENCES

When rethinking your industry, and when later defining your specific role, you might find the following guidelines useful:

- 1 **Talk to many players in your industry**, in particular **downstream** of your place in the value network. Most companies spend too much time in internal, rather than external, discussions. Talk to end-customers, service providers, companies in other countries and related industries and potentially even to your competitors. Challenge your ideas about trends and e-market developments, processes, pain points, alternatives as well as the primary interest and readiness of major industry categories and players. This is not just an informational tour. Almost all true innovations involve *partners*. You get a first impression of the capabilities and competencies of critical players, and of their inclination to act as potential partners. You thus establish contacts for devising and implementing your own strategy later. This should not be an isolated effort. Ideally you make such talks part of your routine. It should also not be constrained to top management and strategy groups. Highly innovative regions, like Silicon Valley, have thrived on an intense dialogue among players at all levels. Without it, your ideas are bound to be either too conservative or too unrealistic.
- 2 At this early stage you should already start exploring what **software/service solutions** might be available. As mentioned before, these “tools” are intimately related to what services can be realized. You cannot start early enough to understand the state of the art and the efforts and time frames involved. While you can to *talk* to the vendors, only *trust* the users.
- 3 You can often **speed up the process** considerably by using external **consultants**. However, avoid those that are experts at analyzing your internal (and to a lesser degree external) processes and at recommending how to best restructure them; this is *not* the answer. At the other extreme, futurologists and “gurus” are equally of limited help. They might assist you in dreaming up options, but their concrete business effect is negligible. Instead, you need a combination of true industry know how, e-business expertise and a track record of devising value-creating innovative solutions.

NOTE

- 1 We discuss this specific issue in more detail in Insert 10.1, “Are suppliers at the mercy of e-markets?”

The Racing Line – Differentiate and Focus!

IN THE END, what matters is your ability to identify and execute your own winning e-play. Your business may be at stake. Also, the financial commitments for a strong e-business/e-market initiative are substantial. Thus the strategy should be well elaborated. At the same time, project efficiency is critical in the fast moving electronic marketplace. In this chapter we provide you with a tested streamlined process you can follow to build a promising e-business.

The process is actually applicable for launching innovative businesses in general. With minor modifications, it can be used by infrastructure and service providers as well as other new business initiatives. In the examples, however, we focus more narrowly on e-business/e-market players.

Although we focus our discussion on new ventures, restructuring existing e-businesses follows essentially the same logic. If there is one golden rule to ensure the venture's success it is: "differentiate and focus!"

NAVIGATOR THROUGH CHAPTER 10

Designing your ship for the digital storm

A distinguishing aspect of initiatives in the electronic marketplace is that strategy is intimately related to technology and execution. A general strategy process thus includes blueprinting and rapid prototyping. The core steps are: Asset assessment and positioning, opportunity assessment, go-to-market strategy, devising a business plan and finally blueprinting and prototyping. We discuss the most difficult elements of such projects in the following.

*The right role for **your** business ... be different!*

Based on a critical assessment of their true assets, businesses have to choose

their role carefully. In general, the prioritization between multiple seemingly attractive options is the trickiest part. Yet some players, such as suppliers, face the reverse challenge of feeling threatened by the electronic marketplace itself. Ultimately, a promising role exists for everybody and differentiation potential is always the core profitability driver.

Scale through focus

Achieving scale fast continues to be a critical success factor for every new venture. The time for “filling the space” and “owning the market” has passed. The key to achieving scale is to focus on providing a complete solution to the core needs of a tightly defined group of customers. Determine your beachhead route to satisfying this goal and you will be on your way to creating a successful, sustainable and scalable e-business.

The partnership dilemma

Partnerships have been widespread and short-lived in the electronic marketplace. Partners are critical for achieving a complete value proposition. But the uncertainty and dynamics of the environment also require that all parties be able to act swiftly and thus independently. We suggest avoiding joint ventures. Good partnerships are built on complementary value propositions and congruence of interests. They rarely need rigid contracts.

Time to profitability

Achieving profitability fast has rightfully moved center stage in the electronic marketplace. This should be the focus of the business case. On the Internet, some services have been widely adopted by users without ever creating profits for the providers. In an uncertain environment, one year should be the target horizon for profitability of individual services on a cash-flow basis. A venture-type staged funding should be adopted.

Rapid prototyping

Blueprinting and rapid prototyping of marketing, platforms, organization and

partnerships are an integral part of the strategy process. Without this validation phase, critical questions about feasibility, pricing and cost structure cannot be answered. An efficient launch management and performance metrics have to be established.

BUILDING YOUR SHIP FOR THE DIGITAL STORM

A well-structured strategy development process does not guarantee a successful business, but it maximizes the potential for success. We will first introduce the complete process (see Fig. 10.1) and in the following subsections zoom in on the most difficult elements in an e-business/e-market strategy.

In **assets and positioning** the company first critically assesses its core assets. Typically those are less the physical assets, but rather its capabilities and relationships. Based on a competitive positioning one should early on develop a **hypothesis** for the **best role**. The actual choice of roles can be tricky in the electronic marketplace and we discuss this in detail below.

In **opportunity assessment** the core analysis of the future business model and core value proposition are performed. After the alternatives are thoroughly analyzed with respect to their sustainable competitive differentiation this phase typically ends with a prioritization of the strategic alternatives. The specific company **role is precisely defined** and its attractiveness validated.

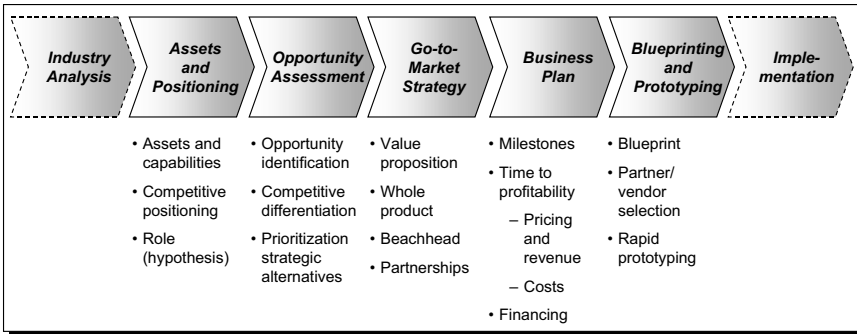


Fig. 10.1 Strategy and rapid prototyping: e-business/e-markets.

Subsequently the **go-to-market strategy** for the most attractive option is developed. We assume the typical case that the most attractive strategy involves taking a *new value proposition* to market. It could involve launching or re-launching a marketplace, private, networked or public. It could also mean repositioning your company in the electronic marketplace with a modified product and service offering, with a new network of partners and potentially different decision takers at the customers. Or it could mean marketing a new infrastructure, product or service offering. The most critical aspect across all these examples is to **drive market adoption and scale fast**. The other one is **partnering strategies**. We again expand on these below.

In the next phase the **business plan** has to be completed. This involves defining the major milestones to be achieved, building pricing and revenue models and finally budgeting the costs. **Time-to-profitability** is the most critical short-term goal, which we discuss in this chapter.

Strategy for e-business/e-markets does not stop here. The intrinsic connection between service offering and platform requires the inclusion of **blue-printing and prototyping**. In particular, teams and organizations have to be created, the marketing has to be detailed, critical platform decisions have to be taken and partnerships actually established. In our experience a coherent **prototyping** is critical for success.

The above approach has been extensively tested in the marketplace. While in specific situations the weight of the individual parts may change, the general process remains valid.

CHOOSE THE RIGHT ROLE FOR YOUR BUSINESS ... AND BE DIFFERENT!

When building a differentiated digital strategy, you need to understand not only the opportunity, but also the assets you bring to the table. These assets are not always entirely evident, in particular when your business model is going to change.

The **B2B publishing** industry provides a good example. Major global players such as Reed Elsevier/Cahners, United Business Media/CMP and Ziff Davis are known today for publishing a large selection of trade magazines and

running a wide variety of trade shows. Examples in the previously discussed construction industry would be magazines such as *Building Design* or *Professional Builder* for architects and general contractors, and trade exhibitions, such as *InterBuild* or the *National Hardware Exhibition* for building products in the UK and US respectively. Simply to replicate these businesses on-line risks adding more costs than revenue.

A core business of these magazines, however, consists of providing advertisers with access to a professional audience. Thus other core assets surface, namely the **trust of the professional community**, buyers of many goods and services, and the **relationship to the sellers** of these very goods and services. On-line, information and transaction is only “a mouse-click apart,” suggesting a potential e-market play. We return to a similar case in Searchlight 27 below.

Figure 10.2 should assist you to determine what your key assets for an e-business/e-market strategy might be.

When an understanding of these assets is combined with the industry analysis performed earlier, options for potential roles arise. These can imply

Assets	Examples
Relationships	<ul style="list-style-type: none"> • With customers and suppliers that can be maintained and built upon for your online activities <ul style="list-style-type: none"> – Access to these groups – Brand and reputation – Neutrality • Position in the broad industry network – legitimacy with trade associations and industry bodies, external commentators, journalists
Knowledge	<ul style="list-style-type: none"> • In-depth understanding of industry business processes and target users' value criteria
Transactions	<ul style="list-style-type: none"> • Existing business that may be migrated online or upsold • Transaction support mechanisms – logistics, internal management systems, marketing knowledge • Scale
Resources	<ul style="list-style-type: none"> • Employees, management, funds

Fig. 10.2 Potential assets for the electronic marketplace.

dramatic changes. As an example we consider the entertainment industry and within that a site serving the professional musicians: MusicPlayer.com

→ **Searchlight 27:** The media and entertainment industries – the audio test (p. 318)

MusicPlayer.com is run by United Business Media, who also owns the highly popular professional magazines *Guitar Player*, *Bass Player* and *EQ* as well as several technical publications for recording equipment. On-line, it decided to combine its assets to serve not only individual professionals but the whole music band. This alone raises difficult issues: What does it imply for the editorial freedom of the individual magazines? And to what extent should the site collaborate with co-opetitors to complete the offering? In addition, all the major on-line competitive sites are run by retailers. These are important partners off-line and there had been no intention to compete with this category.

The further addition of on-line lessons and collaborative music making is only technically challenging. But two other significant issues arise:

- 1 To what extent should the site build on yellow pages, reviews and advertising to launch a full marketplace for professional musical gear and more?
- 2 Can the dramatic developments in music distribution be ignored or should the site, for instance, start connecting its professional community to the agents of the labels?

Needless to say that all these decisions would involve substantial new skills and radical changes in the business model. The venture is challenged on two fronts by the digital storm: in its own (publishing) industry and in the industry it covers (music making). For Paul Gallo, who started the venture, the focus has been clear: “Our core challenge is to maintain the trust of the professional musician community on-line. If we achieve this, all the service options we can offer will fall in place.”

The above example shows that the decision about roles cannot be taken lightly. Hypotheses should be formed early on and the initial focus has to be confirmed (and sharpened) in a professional way, involving extensive valida-

tion through external interviews. Extensions can be envisioned if the first part is successful.

When considering one very specific e-market opportunity, three basic categories of roles exist:

- 1 Market operator/facilitator of dynamic trading networks
- 2 Participant
- 3 Infrastructure or service provider.

Six simple questions might assist you in determining your primary role:

- Which are the likely attractive roles in the end-game scenarios?
- What are my objectives from the venture?
- What is the best fit between my assets (or potential assets) and the attractive roles?
- Who are/will be my competitors?
- Can I achieve a sustainable competitive differentiation in this role?
- Can I attract partners to help provide a full customer solution?

While it is often useful to simplify things in this way, we have already seen in the previous example that roles are rarely clear-cut. In general, your position in the network of the electronic marketplace can no longer be reduced to one role in one specific market, and the line between infrastructure/service providers and electronic marketplaces is sometimes a fine one. This is illustrated by examples of companies switching from one to the other. Also, in private marketplaces (and many consortia-run markets) the operator is simultaneously a core participant. In future trading networks hybrid forms prevail.

It is, however, worth mentioning, that originally it was thought that being the operator (“maker”) of an e-market is always the most attractive role. The collapse of lofty valuations and the challenges faced by the early players has almost turned this general attitude into the opposite, with many asking whether the rewards are worth the risk. Nevertheless, several groups of players wonder what a “mere” participation in an e-market would mean in the long term. In general, suppliers are particularly concerned and we consider their situation in Insert 10.1.

INSERT 10.1: THE SUPPLIER – AT THE MERCY OF E-MARKETS?

One category of players invariably views e-markets as threats, rather than opportunities: The suppliers.

Morgan Stanley Dean Witter in their Internet Report¹ quote a refreshingly blunt supplier as saying:

“Let’s see, you want me to put all my products and prices online so my customers can beat me about the head and shoulders. Then I can commoditize myself even more to take my razor-thin margins down to a microscopic level. Finally, I get to pay transaction fees for this privilege. What am I missing?”

Clearly:

- The increase of transparency and information turns the world even more into a buyer’s market.
- In order to facilitate the choice for the buyers, markets tend to dictate the metrics that they use for comparing products/services of suppliers. The degrees of freedom for competitive differentiation among this group is thus reduced to excelling in predefined metrics, with everything else becoming secondary.

Sometimes suppliers react by creating their own markets – the consumer goods industry (Searchlight 6) is an example. However, if the supplier-driven market is to be competitive, similar issues arise.

The dilemma actually affects every company in the industry value network: The power in the digital world invariably shifts towards the customer.

The threat to the suppliers is real. Particularly affected are those, whose main differentiation has been geographical proximity to their customers and intimate relationships with the purchasing departments. But the strategies addressing these challenges are equally evident.

With increased transparency come two advantages for a supplier:

- He can reach a larger set of customers

- He can specialize in his area of strength, as the customer can source complementary products from other suppliers.

So the *first strategic move* has to be: **Focus on your core strength and try to dominate one segment.**

There is, however, a *second strategic move*: **Build a private marketplace, addressing not only your customer, but your customer's customer.**

Let us come back to the discussion of Cisco in Chapter 6 as an example for the latter. The superior value created by its private marketplace is a core differentiator, hard to match by an open market. While serving Cisco's channel partners (often its immediate customers), the marketplace is primarily targeted to the end customer, i.e. Cisco's customers' customers. Cisco built brand recognition, then a market for re-orders and finally a market for direct orders to these end customers. Not surprisingly, most of the other examples of sell-side markets use a variation of this strategy.

We would like to end this session by repeating a remark made earlier in the book. Whatever role you chose, you have to commit to it and change processes accordingly. Especially for users of markets, a passive/opportunistic "e-participation" will not provide any tangible benefits. Regardless of your primary role, you will probably use multiple, networked markets for different purposes. But you should form a coherent strategy and decide for which specific purpose you use which e-market and then execute on it.

SCALE THROUGH FOCUS

When assessing opportunities and devising the go-to market strategy the most important item is unconditional focus. Whatever your ultimate ambition may be, initially you can introduce innovations only by concentrating both your energy and your communication on one specific value proposition. This focused position is often untenable in the long term – and you need to have a strategy

to eventually build upon it. As soon as you have achieved your initial goals you will have the management bandwidth, the technology and the customer relationship and trust to expand your position.

At the risk of repeating ourselves, your primary value proposition should obviously be **distinctive**. We have discussed this extensively in Chapter 9 and in the previous section.

We would like, however, to explore two items in more detail: How to choose your initial target segment and how to drive adoption in that segment. The goal should be clear: You want to **scale** as fast as possible. In the electronic market place this is almost always a key success factor. But you want to do it in a profitable and a sustainable way. And there is the rub.

As we mentioned in the chapter about “profits in futurescape,” much can be learnt from the high-tech industry. High-tech makes a living from introducing innovation, and has had to deal with networked environments for a long time. Businesses at large can profit from the experiences of this pioneering sector.

In a business-to-business proposition, scale is intrinsically much harder to achieve than in a consumer environment. Corporate needs are more complex and differences between companies have a tendency to require a strong customization effort. A strong focus should help you to keep your initial offering as simple as you possibly can.

Innovations are normally best brought to market by adopting what we call a **beachhead strategy**. The beachhead is the first mass market customer segment you attack. The beachhead does not consist of the early adopters, i.e. the techies or innovation freaks that like to test new “stuff.” These are normally dispersed and do not allow you to achieve a leverageable position.

A true beachhead should satisfy two criteria:

- It should form a well-defined segment, as homogeneous as possible, for which your offering has a unique value.
- It should be connected to the rest of the economy in a way that allows you to leverage dominance in that segment into other segments.

Figure 10.3 illustrates the general idea of the beachhead strategy.

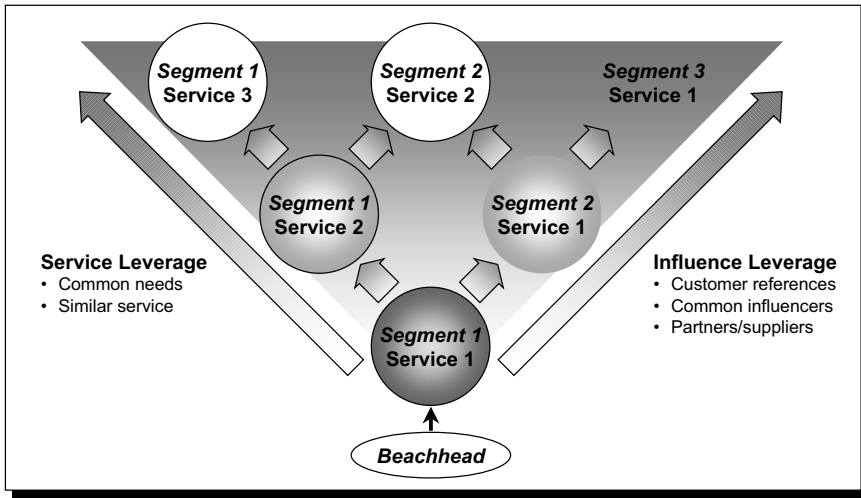


Fig. 10.3 Beachhead points of leverage.

As seen in the figure, from the beachhead you leverage on the one axis the service into other segments. On the other axis you leverage the dominance in the segment to enlarge your service offering therein.

The beachhead strategy has been popularized by The McKenna Group in the high-tech industry, where it has been widely adopted. It has been documented in various books originating at The McKenna Group, such as *Crossing the Chasm* by Geoffrey Moore.² The beachhead strategy, however, is not limited to high-tech, but applies to marketing any kind of innovative product or service.

The other useful concept is what has been termed the “**whole product.**” Again, this is a concept originating at The McKenna Group which has become standard in high-tech. It might more intuitively be called “whole solution” or “total customer experience,” but in order to avoid confusion we adhere to the original terminology.

The term “whole product” denotes the totality of complementary products and services that make your offering useful to the customer. It is illustrated in Fig. 10.4.

Whatever your service or product offering may be, it is almost never useful in and of itself. In order to drive adoption, you have to make sure the

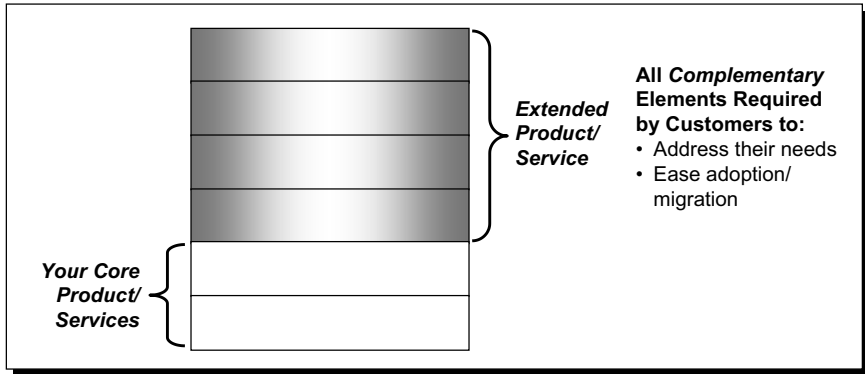


Fig. 10.4 The “whole product.”

customer gets the “whole product” – through you, through your partners or through the industry at large.

In a sense the “whole product” is all about the **migration** from today’s environment into the new world. Let us give a simple example in the e-market context. Many early markets offered an electronic transaction platform without worrying about two things:

- 1 How does the offering fit into the routine of today’s processes in companies?
- 2 How can companies link the systems to the legacy environment they have?

The results were almost predictable. You can sign up as many participants as you want, true adoption is going to be painfully slow. The offering is at best an “interesting experience” for companies to learn about the “new economy,” but not truly useful in their current environment. Small wonder, profitability of the service remained elusive.

A common dilemma is that the core benefits might only come when painful process changes at the customer (alias “participant”) level have occurred. You can deal with this in multiple ways. The best way is to **target an easy win** and sell your offering focusing on this reduced value proposition – even if you could do much more. Auctions were an attempt by e-markets at that, but they were only useful in too limited a context. An alternative is to **team up**

with professional services companies and integrators. They make their money driving process changes and the more change you demand, the better they like you. That is the way SAP managed to roll out its R/3 system around the world – although at the same time it also focused its message (on financials in Europe and on the order-to-payment-cycle in the US). While such a strategy can ultimately be very successful, it is hardly a fast way to achieve scale.

Let us conclude this section with a checklist that you might find useful if your specific challenge is to launch an e-market.

Checklist for value proposition and focus:

- 1 **Is the proposition clear?** Can you summarize it in one sentence? For example – “this service facilitates General Contractors in conducting the tendering process, by enabling single entry of package requirements and real-time progress monitoring of all supplier bids.”
- 2 Can you fully **describe the daily activities** of the target customer group, and how they currently carry out their core function?
- 3 Does the proposition bring **benefits to all the participants** (e.g. buyers and sellers) or will any of the critical groups be negatively impacted?
- 4 If you were a target customer of this proposition, **would you adopt it?** Does it seek to bring about change in a way that is pragmatic and will appeal to users?
- 5 How **defensible** is the proposition? If you were a competitor, how would you argue against it?

THE PARTNERSHIP DILEMMA

One of the challenges of the electronic marketplace is that you almost always have to partner. Simply put, you cannot deliver the whole product alone, and even if you could, you need support from the rest of the industry to drive the *adoption* of your concepts.

While unavoidable, partnering is not any easier in the electronic marketplace than it has been in the off-line world. Let us be more precise: The Internet has made the collaboration and coordination with partners much easier – the networked environment and real-time technologies have had a strong

impact. Unfortunately, this is offset by the prevailing uncertainty of business models and the rapid pace of change: In the environment, in your company, in your partner's company. What seemed a useful collaboration yesterday creates no value today, and might turn out to be competitive tomorrow.

The consequence is that partnerships are as ubiquitous as they are short-lived in the electronic marketplace.

Almost bound to fail are most **joint ventures**. It is well known that even successful joint ventures typically last 5–7 years at best. The most common exit is that one partner buys the other out. A key success factor is to formulate exit conditions clearly and explicitly upfront. The general rush towards joint ventures in the electronic marketplace is in our view reminiscent of a similar industry behavior during the last decade in telecommunications: As it was hard and expensive to enter new markets, large telecom operators dismissed all experience and set up myriads of joint ventures that were born to die. To list them all would be embarrassing. GlobalOne, AT&T World Partners and many European ventures may serve as examples. The early claim to fame (and growth) of Worldcom, and later Vodafone, was to abandon the prevailing “joint venture ideology” and to go for outright acquisition instead.

Experience shows that in joint ventures the surest road to failure is:

- The ultimate business of the venture cannot be clearly defined due to a large uncertainty – decision making grinds to a halt.
- All partners regard the venture as “strategic” – no exit open.

Unfortunately, this also happens to be the most common situation for joint ventures in the electronic marketplace. As long as everybody involved was ready to accept a loss of control for initial speed and the marvelous returns provided by the stock market things went well. As financial markets turned, the underlying tensions have emerged and things have been turning sour.

Thus avoid joint ventures, even if they may promise an initial gain of speed, unless a clear leadership and explicit exit options are defined. This applies to ventures with competitors as well as to those with today's (but not necessarily tomorrow's) “complementors.”

On the other hand, outstanding partnerships have developed from attractive complementary value propositions and a resulting preferential treatment, often **without** a contractual basis, except for some general terms of collaboration. A transaction provider teaming up with context providers and logistics partners are an example. Preferential conditions, joint marketing, mutual training (for complex offerings) are all good and necessary. But individual parties should retain their ability to act swiftly – otherwise they are bound to lose in our fast-changing world.

TIME TO PROFITABILITY

When getting to the financial basis of your venture, time to profitability is critical in the fast moving electronic marketplace.

This is by no means automatic. In the early Internet hype many players assumed that achieving wide-spread adoption would in and of itself guarantee profits. However, scale is only a *necessary*, but not a *sufficient* condition for profitability.

The first important lesson is:

Never give anything away for free that you want to charge for later.

It almost never works. The electronic marketplace abounds with examples of companies trying to charge for things they gave away first. This inevitably causes a collapse of their user/customer base.

Let us be precise: There is nothing wrong with charging very little initially. The sensitive issue is less how much you charge, but whether you charge at all. It is also acceptable to give large discounts or to provide services for free during an introductory phase, as long as it is clear that at a predetermined point, some previously specified charges will apply.

It is very important to choose the business model in a way that it will yield profitability in a reasonable time frame for any individual service. Further investments might be needed, but they should then *expand* the offering. A business service that requires a huge critical mass to be profitable is always ill-conceived. **Profitability horizons (on a cash-flow basis) of individual services in the beachhead segment should not be longer than one year.**

Also, strive to budget the cost side correctly, in particular the expenses for the platform. Almost all ventures in the electronic marketplace we know have tended to underestimate these expenses. The customization effort is likewise always underestimated. We have already discussed in the chapter on the “software gap” that there is an underlying basic difficulty with today’s software offering. This is one reason, why prototyping is such an essential element of strategy development.

When considering the *financing* of a novel e-business initiative, the basic venture capital approach should be taken. Funds should be committed in stages and additional funding tied to reaching specific milestones. These milestones have to be clearly defined upfront. When large corporations launch new businesses, the most difficult aspect is always *killing misguided initiatives*. Although the venture capital community might have been discredited for succumbing to the general Internet hype, it has still been superior to corporations in “pulling the plug” on ventures not deserving to be funded any further. This is particularly hard if the underlying model or technology seems intriguing and “*only*” the market fails to adopt it fast enough.

Let us finally comment on the time frames you should focus on. Again, we suggest you adopt an approach similar to the venture capitalist:

The best planning in the world cannot avoid surprises. Uncertainty is prevalent in the electronic marketplace. It cannot be removed. Rather, it should be recognized and addressed explicitly.

Typically, you should thus focus your planning effort in two periods (see Fig. 10.5): A 5–10 year horizon, in order to check whether your core strategy is compatible with the end game scenarios. And the very short term, i.e. the first year, for penetrating the market, reaching your first significant milestone and rendering your first service profitable in the beachhead segments on a cash flow basis.

RAPID PROTOTYPING

As we have said before, e-business/e-market strategies are only complete after

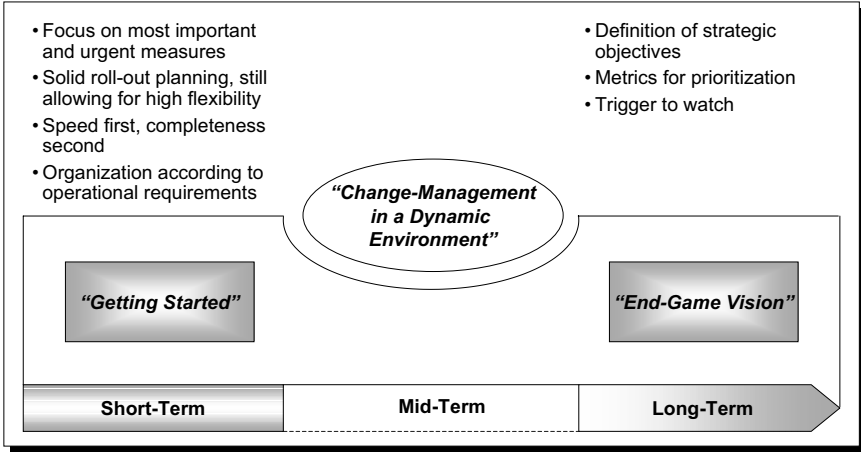


Fig. 10.5 Timeline focus in uncertain environments.

blueprinting and rapid prototyping. In general this phase addresses the core implementation issue depicted in Fig. 10.6.

Let us comment on the individual elements.

Platform

Your ability to deliver any service in the electronic marketplace depends on

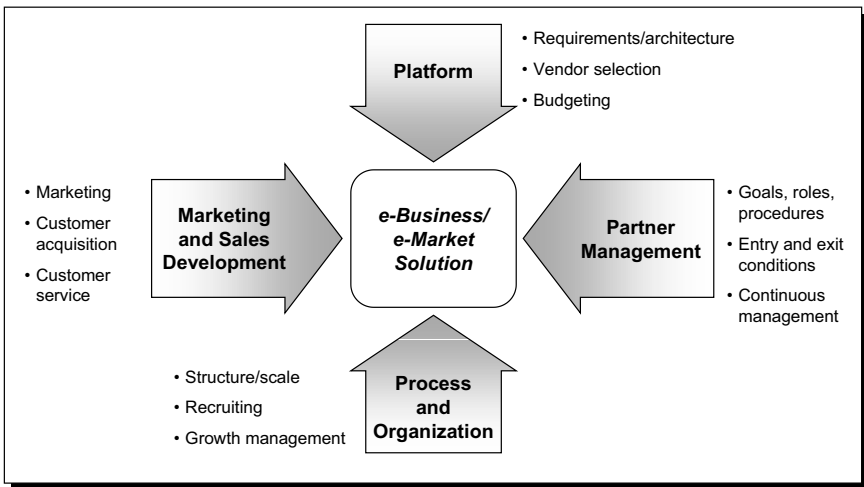


Fig. 10.6 Core implementation challenges.

your software platform. Due to the interdependency of your service offering and the software platform the strategy is not complete until validated by the ability of software to deliver it. This is often not easy to establish. Striving for a rapid prototyping of the platform is an essential part of your strategy development. It is also the only way to get a grasp on your future cost basis. The most critical aspect for the basic platform is *well-functioning* (sadly not obvious), *scalability* and *flexibility* to adapt to further developments.

Marketing and sales development

The basic value proposition and “whole product” should already have been tested with the beachhead customer group during the strategy development phase. During the prototyping phase you should confirm more detailed assumptions about *pricing*.

If we focus for a moment on the specific case that you might want to launch an e-market offering, Fig. 10.7 summarizes in a conceptual way the specific revenue options.

Whatever your specific assumptions may have been, try to validate them with early prospects now.

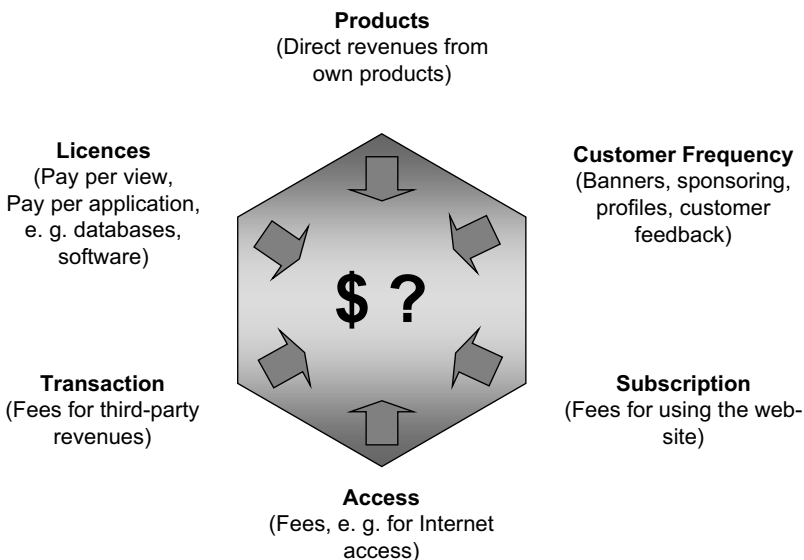


Fig. 10.7 Revenue options for e-markets.

Process and organization

Needless to say that you have to have the “entrepreneur” and the core management team in place. Start-ups always focus on this very early on. Large corporations launching new businesses have a tendency to think that they can just find someone suitable at the appropriate point in time. This is a mistake. The entrepreneur has to be phased in during the strategy development and has to lead the prototyping phase.

In the prototyping phase itself, the scaling of the organization has to be conceived in detail and tested in the recruiting market. Do not assume that you will find individuals with the required skills. While some core skills may no longer be as rare as they were at the start of electronic businesses, ventures focused on providing security services to companies and markets, for instance, have continued to face a severe shortage of talent.

Partner management

During the prototyping phase you have to enter the negotiation stage with key partners. This is bound to produce surprises. As mentioned before, partnerships are both critical and tricky. Without them, you will probably not succeed.

Many more things could be said regarding these core elements of an implementation. Our brief description should make it clear that unless you can validate your initial assumptions regarding these elements during the prototyping phase, your strategy cannot be considered complete. We have yet to experience a project in the electronic marketplace, for which the prototyping phase did not trigger substantial modifications of the original strategy. It is thus essential that all the strategic talent remain involved to devise creative solutions to all the unexpected challenges that will surface.

The prototyping phase should end with laying down an explicit performance tracking for the new venture. This should subsequently be very closely monitored. Typical performance metrics are summarized in Fig. 10.8.

Key Performance Areas	Useful Measures
Usage	<ul style="list-style-type: none"> • Number of paying participants • Penetration of participants (i.e., percentage of their total business)
Proposition Development	<ul style="list-style-type: none"> • Completed elements from strategic roadmap
Partner Development	<ul style="list-style-type: none"> • Partnership discussions resolved (secured or rejected)
Competitive Developments	<ul style="list-style-type: none"> • Known participant base • Known participant traffic • Level of proposition development
Organizational Developments	<ul style="list-style-type: none"> • Key roles filled • Headcount (by role) • Staff turnover (by role)
Financial Performance	<ul style="list-style-type: none"> • Cumulative spend (by function) • Cumulative revenue (by stream) • Realized price points (by sale type) • Cashflow • Forecast (cashflow) breakeven date

Fig. 10.8 Performance tracking.

Let us conclude by stating that even the best process cannot preempt all the surprises the real business will reveal. Whatever else you do, try to prepare yourself by assuring the following two things:

- scalability of the business, the organization and the platform;
- flexibility of the business, the organization and the platform.

With this final piece of advice we end our chapter on strategy development.

NOTES

- 1 Morgan Stanley Dean Witter, *The B2B Internet Report: Collaborative Commerce*, by Charles Philips and Mary Meeker, March 2000 (www.msdlw.com/techresearch)
- 2 Geoffrey Moore, *Crossing the Chasm*, Capstone, Oxford, 1999.

SEARCHLIGHT 27: THE MEDIA AND ENTERTAINMENT INDUSTRIES – THE AUDIO TEST

The media and entertainment industries have already been fundamentally changed by the Internet. Traditional media products (e.g. music, books, movies) can be digitized and distributed digitally. These industries also share characteristics that make them amenable to e-markets – a large volume of information-based products, a distribution chain that is filled with intermediaries, and an extensive set of pain points for value chain participants. Music is the first media industry to face these issues on a large scale; others will wrestle with them in the future. Thus, the early lessons learned will be instructive for future industry development.

From “traditional” to digital goods

The products of the media and entertainment industries are becoming increasingly digital. Magazines and newspapers today are published simultaneously online and in paper. Music is converted into MP3 and other digital formats. Photography is turning digital as we write. And as bandwidth increases and compression technology improves, even movies can be digitized and feasibly distributed over the Internet.

Consumer benefits and applications of these technologies are often touted, but there is a large professional component that is not often considered. The transition to digital products has the potential to reconfigure existing industry power structures and relationships.

The music industry as prototype

The music industry illustrates how fundamental these changes can be. In the “traditional” way of doing things, a label advances musicians money to create an album. The product is recorded, mixed, produced, and mastered for duplication on compact disc. CDs are created, and distributed to retail outlets through multiple tiers of distribution. Consumers may then get access to and buy the packaged product at a retail outlet. By the time it reaches the consumer, the end product is marked-up in price multiple times to compensate for the cost

of recording, producing, distributing, and promoting it. The musician's share of a retail sale is typically 8–10% of the final selling price, and they receive proceeds only after the label's interest in creation and promotion is recouped. In such a scenario, only "hit" CDs, which sell significant volumes, make money for the labels, yet even these "hits" may still lose money for the musicians involved.

Contrast this complexity with digital distribution. Music can be digitized and made available directly to consumers. By excluding multiple intermediaries from distribution, the label or artist is in the position to provide virtually free promotional content, to lower the price of the product, or to hold the price constant and increase his own margin. Is it any wonder that a myriad of Internet-based business models have arisen around options created by this new digital value proposition?

In practice, however, the result is a cacophony of offerings with consumers being confused. Already in the "old economy" many people would have bought more music if they had only known what to buy. By selecting artists to produce products, and bringing these products to market through largely captive distribution, labels essentially filtered and placed a stamp of quality on the products they brought to market. The vast majority of today's digital music sites offer no such guidance. Thus there is the need for new (or old) "**infomediaries**" in the digital world.

As a result there are a number of roles entrants can play in the new music industry value chain. The remainder of this searchlight looks at the choices faced by a player with strong leverage with some key value chain participants as they try to decide where they would like to play.

MusicPlayer.com looks to leverage access to content creators

United Business Media is the leading special-interest publisher to the (semi-) professional musician market. The company, which publishes *Guitar Player*, *Bass Player*, *EQ*, and other popular "trade" magazines, originally had plans to create a "super-site," MusicPlayer.com, that would aggregate all of its magazine content and hopefully become a leading web destination for their readers.

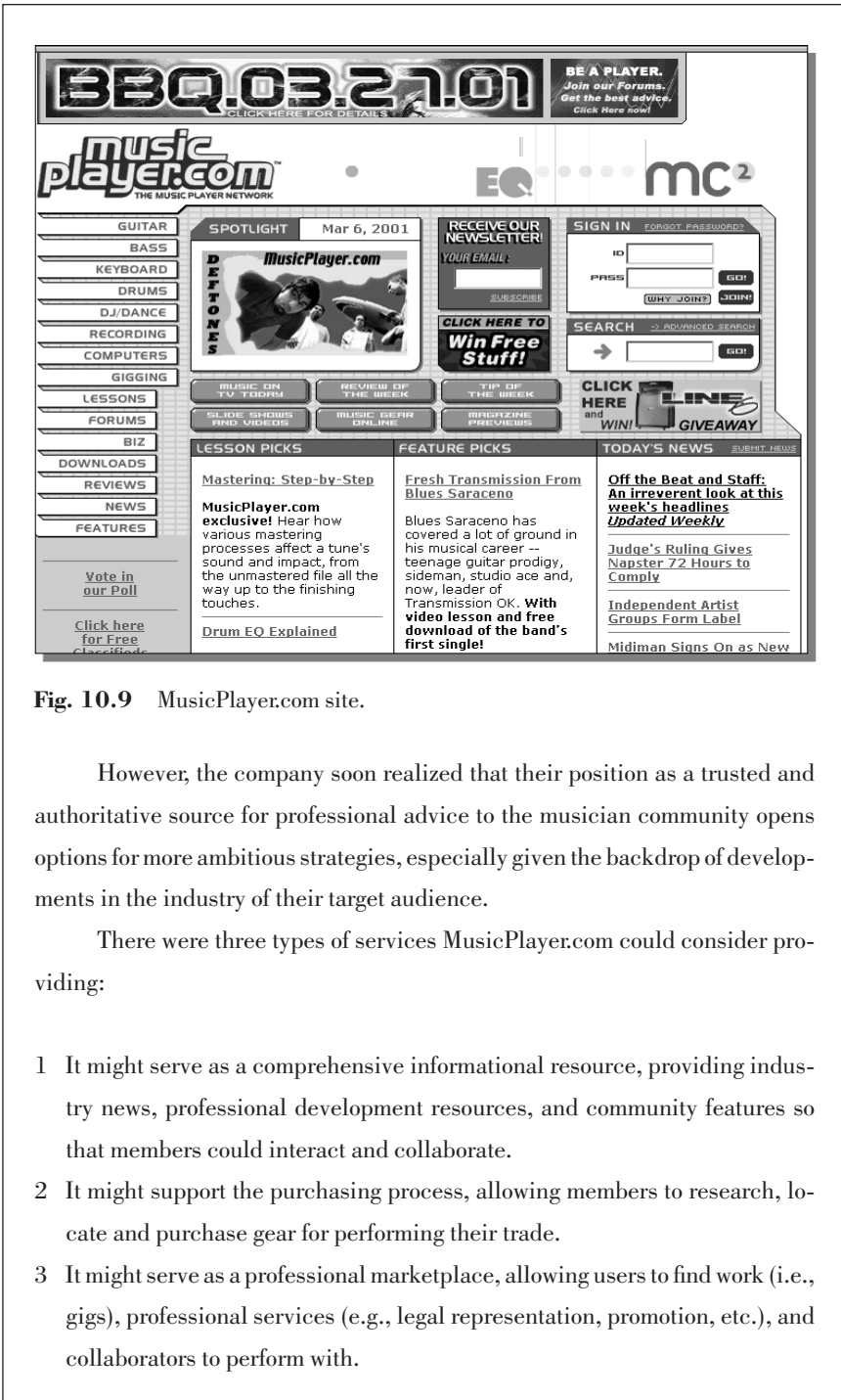


Fig. 10.9 MusicPlayer.com site.

However, the company soon realized that their position as a trusted and authoritative source for professional advice to the musician community opens options for more ambitious strategies, especially given the backdrop of developments in the industry of their target audience.

There were three types of services MusicPlayer.com could consider providing:

- 1 It might serve as a comprehensive informational resource, providing industry news, professional development resources, and community features so that members could interact and collaborate.
- 2 It might support the purchasing process, allowing members to research, locate and purchase gear for performing their trade.
- 3 It might serve as a professional marketplace, allowing users to find work (i.e., gigs), professional services (e.g., legal representation, promotion, etc.), and collaborators to perform with.

If it were successful in winning the trust of the musicians, MusicPlayer.com might also be in a position to insert itself in the distribution chain, either by brokering relationships between their community of musicians and the labels, or by upsetting the current structure and becoming itself a “virtual label.” In sum, the company was facing multiple business model options, many more than come from aggregating magazine content.

MusicPlayer.com has some unique assets to pursue these goals. It has strong access to two of the most important players in the value chain – musicians (their readers) and instrument manufacturers (their primary advertisers). Needless to say, however, that initially the publishing company had none of the skills required to actually *run* any of the potential new businesses.

Competitors abound

Many competitive ventures to capture the heart and the mind of musicians exist. All of them have been value chain *partners*, rather than *competitors*, of the Musicplayer.com magazines in the off-line world. Brick and mortar musical instrument retailers, including leader MARS Music, have launched initiatives, bolstered by their customer relationships. These players are well-positioned as they have contact with musicians throughout their professional lifecycle when the latter upgrade and add to their set of “tools.” Labels have also made attempts to capture promising talent early on, providing sites that help musicians promote and distribute their music. Farmclub.com, backed by Universal, is a notable example that plays an infomediary role by singling out promising unknown acts with digital distribution. Music retailers, fearful of being disaggregated by a new distribution model, have launched their own initiatives; Fnac, the large French entertainment retailer is one such example. These thrusts, combined with activity from directly-competitive venture-backed startups such as Harmony Central, and a large number of digital music aggregation and distribution sites have made for a difficult, fragmented environment in which no clear leader has yet emerged.

Future prospects for music and beyond

It is clear that digital distribution of media and entertainment products is here to stay. It is much less clear who will be the winners to emerge. One insight the music industry already offers is that quality content will remain the most valuable commodity. In addition, there are very few artists who have translated primarily online followings and digital distribution of their music into a level of success commensurate with a “hit” in the offline world. Infomediaries who can guide users to quality digital content will need to play an increasingly important role if this is to change. However, the option of digital distribution has resulted in much more content being produced. Thus there are increased opportunities to take advantage of professional communities and build complementary services. Entities like MusicPlayer.com, who carry favor with content creators, are in a strong position on either account.

Epilogue: The Mystery of the Electronic Marketplace (*continued*)

Back at 221b Baker Street Holmes was reading his e-mail.

“Ah Watson, look at this. A message from our ‘business person’.” Irritated by this renewed distraction I glanced at the mail.

To: sherlock.holmes@mastermind.com
From: The business person
Subject: Concrete action

Dear Sir,

Thank you for your masterful analysis of the Electronic Marketplace, and for recommending the book, which enabled me to fully appreciate your statements.

I have been intrigued by the business opportunities presented by your powerful Holmes’ Law. In fact, I now see how I can leverage the forces of the “Digital Storm” to build a unique competitive advantage for my own firm.

However, understanding general forces, precedents and your opponents is not enough. You, more than any other living person, have demonstrated that each specific case can only be solved by careful observation and determined action.

I would like to inquire about the possibility of contracting your services to assist me with a number of specific issues pertaining to my business.

Respectfully,

The business person

PS: Needless to say that your services would be generously rewarded.

Our “business person” had apparently struck the right tone. “Smart fellow,” Holmes commented, “he is right on target. Never trust the general impressions, my boy, but concentrate yourself on the details. Yes, you have to know the analytic methods, memorize the precedents and understand your opponents. I can detect traces of blood diluted to one part per million in water. I have studied the most ingenious murders in human history. And I have penetrated the evil mind of Professor Moriarty. In the end, however, you have to fight little moments of distraction. You have to observe that the tiny smudge on a man’s suit makes him the principal suspect. And you have to act instantly before he has the opportunity to escape. Specific cases are never solved through general knowledge, but only through concrete action.”

My finest moment had come. I am aware that the public has often considered me a somewhat limited “accessory” to Holmes’ genius. Little do they know how lost Holmes would be without me. Slowly I rose to my feet, collected my thoughts and said with as much authority as my voice could muster:

“Holmes, you are not going to pursue this any further!”

There was a moment of silence. Holmes toyed with his pipe. Slowly he turned towards me. Finally he smiled and said:

“Good old Watson! You are the one fixed point in a changing age. Of course I shall not pursue this ‘business problem’ any further. The case is interesting, though elementary. Let us pass it on to lesser minds. And he wrote:

```
To: The business person
Cc: phil_gerbert@mckenna-group.com; alex.birch@occ.co.uk;
gerd.schnetkamp@occstratgy.de
From: Holmes
Subject: Re: Concrete action
```

Life is kind enough to offer you three choices:

1. Follow my example and devote your existence to the pursuit of excellence in your own field.
2. Quit.
3. Contact Scotland Yard or private agents specializing in your business.

I, however, must continue in my pursuit of crime.

H.

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We would all like to thank our clients and discussion partners for giving us the privilege of serving them. Without our continuous work on many challenging engagements for leaders in the electronic marketplace this book could not have been written.

Glossary of Acronyms

ASP (Application Service Provider) An organization that hosts software applications on its own servers within its own facilities. Customers access the application via private lines or the Internet. Also called a “commercial service provider.” With the advent of the Web browser as the universal client interface, the ASP market is expected to grow rapidly.

xSP (Xxxxx Service Provider) This denotes a service provider that uses the Web to deliver or support their offer.

B2B (Business to Business [electronic commerce]) Refers to one business selling to another business via the Web.

B2C (Business to Consumer [electronic commerce]) Refers to a business selling to a consumer via the Web.

C2B (Consumer to Business [electronic commerce]) Refers to models in which consumers submit their requirements to businesses and businesses bid to fulfil these needs. In effect these are reverse auctions by consumers – either as individuals, or in buying groups.

B2B2C (Business to Business to Consumer) Refers to models in which a business specifically sells through another business to reach a consumer or in which the first business creates a service that the second business sells to the consumer and pulls through the first business’ products or services.

B2BI (Business to Business Integration) The integration of the processes between (multiple) businesses.

BPM (Business Process Management) The automation of specific business processes, using specific software tools. For example planning tools supporting all the processes required in the creation of a feature film.

CAD (Computer-Aided Design) Using computers to design products. CAD systems are high-speed workstations or desktop computers with CAD software. A graphics tablet is used for drawing, and a scanner may be attached

for additional input. The output of a CAD system is either printed or electronically transmitted to a CAM (computer aided manufacturing) system, which builds the objects.

CRM (Customer Relationship Management) An integrated information system that is used to plan, schedule and control the presales and postsales activities in an organization. Although the dividing lines are not crystal clear, CRM generally does not include the marketing function and could be said to be enterprise relationship management (ERM) without the marketing component. Sales force automation (SFA) evolved into CRM, which became a greatly hyped buzzword by the turn of the century. The clear objective for CRM is to enable a customer to interact with a company through various means including the Web, telephone, fax, e-mail and snail mail and receive a consistent level of quality service. The integration of all activities means that an order placed by phone can be tracked on the Web and vice versa.

DSL (Digital Subscriber Line) A technology that dramatically increases the digital capacity of ordinary telephone lines (the local loops) into the home or office. DSL speeds are tied to the distance between the customer and the telco central office. DSL is geared to two types of usage. Asymmetric DSL (ADSL) is for Internet access, where fast downstream is required, but slow upstream is acceptable. Symmetric DSL (SDSL, HDSL, etc.) is designed for short haul connections that require high speed in both directions. Unlike ISDN, which is also digital but travels through the switched telephone network, DSL provides “always-on” operation. At the telco central office, DSL traffic is aggregated in a unit called the DSL Access Multiplexor (DSLAM) and forwarded to the appropriate ISP or data network.

EBITDA (Earnings Before Interest Tax Depreciation and Amortization) Effectively operating cashflow.

EIS (Executive Information System) An information system that consolidates and summarizes ongoing transactions within the organization. It provides top management with all the information it requires at all times from internal as well as the external sources.

ERP (Enterprise Resource Planning) An integrated information system that serves all departments within an enterprise. Evolving out of the manufac-

turing industry, ERP implies the use of packaged software rather than proprietary software written by or for one customer. ERP modules may be able to interface with an organization's own software with varying degrees of effort, and, depending on the software, ERP modules may be alterable via the vendor's proprietary tools as well as proprietary or standard programming languages. An ERP system can include software for manufacturing, order entry, accounts receivable and payable, general ledger, purchasing, warehousing, transportation and human resources. The major ERP vendors are SAP, PeopleSoft, Oracle, Baan and J.D. Edwards. Lawson Software specializes in back-end processing that integrates with another vendor's manufacturing system.

HTML (HyperText Markup Language) The document format used on the World Wide Web. Web pages are built with HTML tags, or codes, embedded in the text. HTML defines the page layout, fonts and graphic elements as well as the hypertext links to other documents on the Web. Each link contains the URL, or address, of a Web page residing on the same server or any server worldwide, hence "World Wide" Web.

IFA (Independent Financial Advisor) In the UK IFA's are registered professional advisors providing advice on financial service products.

IP (Internet Protocol) The IP part of the TCP/IP communications protocol. IP implements the network layer (layer 3) of the protocol, which contains a network address and is used to route a message to a different network or sub-network. IP accepts "packets" from the layer 4 transport protocol (TCP or UDP), adds its own header to it and delivers a "datagram" to the layer 2 data link protocol. It may also break the packet into fragments to support the maximum transmission unit (MTU) of the network.

IPO (Initial Public Offering) The first time a company offers shares of stock to the public. While not a computer term per se, many founders, employees and insiders of computer companies have found this acronym more exciting than any tech term they ever heard.

IT (Information Technology) Processing information by computer. The latest title for the information processing industry!

Java A programming language designed to generate applications that can run on all hardware platforms, small, medium and large, without modifica-

tion. Developed by Sun, it has been promoted and geared heavily for the Web, both for public Web sites and intranets. Developed by Sun, Java was modelled after C++, and Java programs can be called from within HTML documents or launched stand alone. When a Java program runs from a Web page, it is called a “Java applet.” When it is run on a Web server, it is called a “servlet”. Java programs are not dependent on any specific hardware and will run in any computer with the Java Virtual Machine software. On the server side, Java programs can also be compiled into machine language for fastest performance, but they lose their hardware independence as a result.

Java Beans A component software architecture from Sun that runs in the Java environment. JavaBeans are independent Java program modules that are called for and executed. They have been used primarily for developing user interfaces at the client side. The server-side counterpart is Enterprise JavaBeans (EJBs).

Jini (pronounced “gee-nee”) A Java-based distributed computing environment from Sun in which devices can be plugged into the network and automatically offer their services and make use of other services on the network. Jini creates a “network dialtone” allowing, for example, any PDA or laptop to be plugged in and immediately be able to use printers and other resources. It turns “peripherals into services,” so that when a disk drive is plugged in, it becomes a storage service rather than just another disk drive.

LAN (Local Area Network) A communications network which serves users within a confined geographical area. It is made up of servers, workstations, a network operating system and a communications link. Servers are high-speed machines that hold programs and data shared by network users. The workstations (clients) are the users’ personal computers, which perform stand-alone processing and access the network servers as required.

SCM (Supply Chain Management) The planning, scheduling, and control of the supply chain, which is the sequence of organizations and functions that make or assemble products from manufacturer to wholesaler to retailer to consumer. The driving force behind supply chain management is to reduce inventory.

SOAP (Simple Object Access Protocol) A protocol from Microsoft, IBM and others for accessing services on the Web. It employs XML syntax to send text commands across the Internet using HTTP. Similar in purpose to the COM and CORBA distributed object systems, but lighter weight and less programming intensive (at least initially), SOAP is expected to become widely used to invoke services throughout the Web. Because of its simple exchange mechanism, SOAP can also be used to implement a messaging system. SOAP is supported in COM, DCOM, Internet Explorer and Microsoft's Java implementation.

UDDI (Universal Description, Discovery and Integration) An XML-based specification for a registry, or catalog, of businesses and the services they provide. It contains white pages (addresses and contacts), yellow pages (industry classification) and green pages (description of services). Led by Ariba, IBM, Microsoft and others, UDDI is designed to enable software to automatically discover available services on the Web. UDDI rides on top of the SOAP protocol, which invokes services on the Web.

VoIP (Voice Over Internet Protocol) The two-way transmission of audio over an IP network. When used in a private intranet or WAN, it is generally known as "voice over IP," or "VoIP." When the public Internet is the transport vehicle, it is referred to as "Internet telephony," however, both terms are used synonymously

WAN (Wide Area Network) A communications network that covers a wide geographic area, such as state or country. A LAN (local area network) is contained within a building or complex, and a MAN (metropolitan area network) generally covers a city or suburb.

XML (Extensible Markup Language) (See also box in Chapter 4) An open standard for describing data. It is used for defining data elements on a Web page and business-to-business documents. It uses a similar tag structure as HTML; however, whereas HTML defines how elements are displayed, XML defines what those elements contain. HTML uses predefined tags, but XML allows tags to be defined by the developer of the page. Thus, virtually any data items, such as product, sales rep and amount due, can be identified, allowing Web pages to function like database records. By providing a common method for identifying data, XML supports business-to-business

transactions and is expected to become the dominant format for electronic data interchange.

The source of a number of these definitions is Techweb. (www.techweb.com/encyclopedia).

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