1.1 Being Online

1.1.1 The Basics

Flashback. When I first got in contact with the Internet in 1992 it was still a quiet place. Apart from sending and receiving e-mail, downloading software via FTP or chatting via “IRC,” “talk” and “nn,” there was not much one could do. Programs like “Archie” and “Gopher” were en vogue and using the Internet required a lot of Unix knowledge. All I had at that time was an ASCII-Text terminal that was connected via “telnet” to a HP Apollo Workstation. I did not have a web browser, because no browser software had been invented yet. Besides the Internet there were other computer networks, like the Fidonet that were far more attractive at that time because they had a colorful interface to the user.

Today, I start up my laptop and use a web browser to connect to the Internet, either via the Local Area Network (LAN) at work or via the modem at home and am able to do all I did in 1992 and even more. Fidonet\(^1\) is still around, but its popularity has decreased a lot since the early days and most of it has been incorporated in the Internet over the last few years, just like most other computer networks, like BitNet and MausNet.

With this simple-to-use browser, I am able to do my e-mailing, up- and download of software, use online chats and search for keywords on the Internet. I am able to check my balance at the bank and buy flowers online. All services can be accessed with this single piece of software.

The software has become so easy to use that non-technical people have e-mail addresses. They buy and sell goods online. Exact figures are not available for the Internet. Neither do we know how many people are online nor do we know how many businesses there are. This is because of the structure of the

\(^1\)http://www.fidonet.org/
Internet. It is different to anything we have seen before. Traditional methods of measuring audience just do not work anymore. With all other types of media the number of offerings is limited by region, for example 40 television stations or five larger newspapers for Tuscany, Italy. Counting viewers or sales is relatively easy, as the number of newspaper stands and televisions is limited in the region. This makes it easy to define prices for the advertising sections. On the Internet we have unlimited space and resources. People from Tuscany may choose from one of the 40 TV stations or choose any location in cyberspace. And everybody who wants to appear as someone who lives in Tuscany can do it by using masquerading techniques (choosing another virtual identity).

For the first time in the history of mankind a mass media has more offerings than potential users. And not only that: for the first time everybody is able to interact. People are able to change content, add information, link resources to logical structures and offer them to others. On TV we have a limited set of channels, on the Internet users have their own channels, moving through cyberspace at their own pace and in their own direction, guided only by their interest and curiosity. On TV, normally, one can watch one program at a time, on the Internet you can watch multiple web pages at a time. Sometimes I have more than forty browser windows open and flip through them while searching for something very specific or comparing something. There is no way to tell how much time I spent on a particular page or on the other.

It will be just a matter of years before everyone will be present on the Internet. The fear that it will replace real-life is unnecessary. Just as TV has not replaced the radio and books, the cyberworld won’t replace the real world. But it will add a new dimension to human life, no doubt. The dream of the global village will eventually become reality. Everything and everyone will be only a click away. Prices for hardware and software are dropping making them available to the poorer people in the world, too.

1.1.2 Distant Learning

The University of Amsterdam has already created special online lectures for people who are not able to attend the regular lectures in Amsterdam. The Network University (TNU)\(^2\) is a large scale project that aims to provide highly interactive, innovative Internet based distance learning to a global audience who opt for the advantages of a new form of academic education. The target group for this service are physically disadvantaged students and students from overseas, mostly from Africa and Asia, who are able to pay for the lectures. Some students may also not be able to pay to live in Europe, though, or may not be able to get a visa for the Netherlands. Through new Internet communication technologies and standard web pages the virtual lecturer talks to the students who in turn are able to communicate with the lecturer via the Internet and telephone.

\(^2\)http://www.lwwl.com/tnu/
The master's degrees offered by TNU will be rooted in an interdisciplinary approach to the social sciences. It will be distinguished by their full use of the Internet as a medium providing access to vast amounts of information as well as a channel of communication that facilitates new ways of learning. The participants of TNU will not be at the receiving end of a one-way communication process but, through the mediation of technology, will actively contribute to the content and future development of the programme. The online learning process will be supported by access to an Internet-based “content call-center” that will offer 24-hour supervision and feedback. This feedback will eventually be offered in different languages.

Interactivity, global reach, the multi-lingual and multi-cultural approach and the nearly 100 percent availability are the key to success in this project. Especially with students from all over the world who live in many different time zones.

1.1.3 Space and Time on the Internet

The reasons for a success on the Internet is radically different to what we have seen in the past in business. It is not anymore the bigger fish swallowing the smaller fish, nor is it the faster runner beating the slower runner. In the information society the more knowledgable is making more deals than the less informed. Knowledge is quality and this is were the business is heading for.

Nicolas Hayek, the president of the Swatch Group \(^3\), which produces the highly successful watch “Swatch”\(^4\) has created a new time standard. Instead of dividing the day into 24 hours, in the Internet age a day is made out of 1,000 Swatch Beats. The Internet time uses its own meridian, the Biel Mean Time (BMT), named after a town in Switzerland. One Swatch Beat equals 86.4 seconds.

Although many people may think that the Internet time is a gag, it reflects the way work is done in the digital age. Instead of serving your customers from nine to five, the customers are served around the clock, whenever a customer feels like needing a product or service. Time zones and geographical boundaries have no importance anymore. Once someone has gone digital, everything is now and here. Although time zones are important for people to communicate with each other, it has become irrelevant for business. No matter if it is five o'clock in Boston or ten o'clock in Nairobi, the customers on the Internet want to receive the goods, information or service they have requested.

Through the Internet everything moves closer together, resulting in nearly zero response time and almost no distance. As the Internet is getting faster every day through new inventions and new programs, such as the Internet 2\(^5\) initiative in the United States, every company will be as fast as its compe-

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\(^{3}\text{http://www.theswatchgroup.ch/}\)
\(^{4}\text{http://www.swatch.com/}\)
\(^{5}\text{http://www.internet2.edu/}\)
tition and just as near as the competition. Distance, size and speed become irrelevant. In order to be successful the service needs to be better than the competition. Quality of service becomes the ultimate success factor.

Through the Internet everyone is able to offer any service at maximum speed (converging to a delivery time of zero). As everyone is able to reach maximum speed, it does not make sense to try to be faster than the competition. A choice is not made anymore on the above mentioned factors, but mainly by choosing a brand, which has a positive image and a good quality. This simplifies the lives of the customers. Instead of choosing the objective best product, they choose the subjective best product.

The Internet reduces the three dimensions of the world and time to a single point, to the here and now of the customer. All customers have their own universe, which needs to be addressed when offering goods, information or services online. Through personalization the universe of the Internet appears differently to everyone. The Internet is constantly changing; making change the only constant one can count on. Products, ideas and prices, for example, are changing much faster than ever before, making them float.

1.1.4 The Web Is Not the Internet

Many people confuse two terms that are related but not identical in meaning. The Internet, which evolved from the military ARPANet has its roots in the 1960s. It’s basic idea was to create a network that would continue to work as a whole, when parts of it collapse. The Internet means a network infrastructure that is built on certain standards, the Internet standards, which are used by all participants to connect to each other. The specification of the Internet protocol (IP) does not specify which type information, services or products should be exchanged. The IP defines how the flow of information is organized. Chapter 3 contains more information on IP and related standards.

These specifications reside on a layer above the Internet layer and one of these protocols for the exchange of information is the World Wide Web with its hyper-text transfer protocol (HTTP). Besides the World Wide Web there are other protocols that enable people to communicate via e-mail (POP3, SMTP, IMAP), chat online (IRC) or participate in newsgroups (NNTP). The web offers the exchange of documents via HTTP which are mainly in the HTML format, allowing browsers to display the content in the correct way.

The World Wide Web is just one the numerous services offered on the Internet and does not specify, if a certain web page is available on the Intranet, Extranet and Internet. It provides a simple-to-use interface that allows people with very little knowledge in computing to access web services all over the Internet. These web services including content, products and services, which can be viewed or ordered through the web browser. The web browser is a synonym to the first generation of the commercial Internet. It allows customers to self-service themselves over the web. The second generation of commercial
Internet usage will move away from “do-it-yourself” to “do-it-for-me.” This new paradigm, also known as pervasive computing, will automate many processes customers were using web browsers for. Pervasive computing is still a vision and will take still quite a while to become reality. Therefore browsers will remain important over the next few years.

1.2 Defining E-business

1.2.1 Overview

One of the first to use the term E-business was IBM\(^6\) in 1997. At that time they launched their first thematic campaign built around the term. Until then e-commerce was the buzzword used. The shift in terms also means a shift in paradigm. Until then selling was the only experience that people could reproduce on the web. Broadening the approach to allow more types of business on the web created the new term e-business. E-commerce is just one aspect of e-business like e-franchising, e-mailing, e-marketing. E-Business is about using the convenience, availability and world-wide reach to enhance existing businesses or creating new virtual business. IBM defines e-business as “a secure, flexible and integrated approach to delivering differentiated business value by combining the systems and processes that run core business operations with the simplicity and reach made possible by Internet technology.”

IBM’s E-business is what happens when you combine the resources of traditional information systems with the vast reach of the Web and connect critical business systems directly to critical business constituencies – customers, employees and suppliers via Intranets, Extranets and via the Web. By connecting your traditional IT systems to the Web you become an e-business. Most companies deploy applications on the Internet making it easier to do the things you already do.

Forward-thinking organizations are beginning to automate, organize, standardize and stabilize the services offered in order to create and maintain sustainable computer-mediated relationships throughout an e-business life cycle. At about the same time, other companies like Hewlett-Packard\(^7\) also started to offer complete solutions for e-business, including software and hardware bundles and e-business consulting. Hewlett-Packard launched in April 1999 a new marketing campaign “Hewlett-Packard – The E-Service Company.” More and more hardware companies move their business away from hardware and start to offer consulting and software as well.

The concept of electronic business had been invented before the Internet became popular. In the 1970s E-business was already popular for financial networks, for example, which used propriety hard- and software solutions. Electronic Data Interchange (EDI) was also available long before the Internet was

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\(^6\)http://www.ibm.com/
\(^7\)http://www.hp.com/
used for it. But without the Internet E-business would not have been possible on such a large scale. The private networks, which were used in the seventies and eighties of the 20th century, cost too much for smaller enterprises and were not accessible for private use.

The Internet is not just another application; it is neither software nor hardware. It is the environment for the business and communication of the future. The Internet combines many existing technologies into one framework. Computer networks and communication networks, like fax, telephone and pager are already integrated into the Internet. Sending a fax via the Internet is just as easy as receiving a voice mail. Not only different types of communication are possible via the Internet, but also the conversion between them is possible. It is, for example, possible to convert a fax to an e-mail or an e-mail to a message for the cell phone. This enables businesses that use different methods of communication to come together more easily. In addition to this it is also possible to translate the communication text from one language to the other on the fly. Not only between human languages like English and Russian, but also between programming and database languages. Using these interfaces it is possible to connect a wide range of different types of hard- and software, which are the basis for very different businesses.

1.2.2 Communication Gateways

Hotels, for example, all over the world use the Internet without having a direct link to it. They use e-mail to fax gateways. People may go to the web site of the hotel and decide to send an e-mail to one of the hotels. The e-mails are collected at an Internet provider where the web site is located and sent on via fax to the hotel. This is done all automatically. The hotels then can then either respond via traditional fax or telephone or can respond via the fax the to e-mail gateway. Suddenly people from all over the world can reach that particular hotel, book rooms there or ask for information at the cost of a local phone call. This is a fraction of the costs it used to be. Instead of calling or sending a fax to the hotel, which may be located in another country, all you do is call your local Internet provider to connect to the Internet and send off a request.

Although this is clearly not the best way to communicate with your clients over the Internet, it is probably the cheapest, as you do not have to invest in new equipment. All you have to do is to Internet-enable your existing devices using gateways. For many companies it is the first contact when they are unsure about an online venture.

E-business, the Internet and the globalization all depend on each other. The more global players exist the more e-business they want to do. The more e-business is online, the more people will be attracted to get direct Internet access. And the more people are online the more global players will arise.

E-business can be divided into three areas. It can be within the organization using the so-called Intranet. The Intranet uses Internet standards for
Section 1.2. Defining E-business

Electronic communication. People on the Intranet are able to see organization-specific web sites. These web sites are separated from the rest of the world by firewalls and other security measures. People from outside of the organization are not able to see these private pieces of information.

Apple\(^8\), for example, built an Intranet web site to sell older Apple systems and accessories to its employees. Before that, Apple e-mailed special promotion details to employees who then ordered the products over the telephone. The Intranet web site now allows employees to obtain current information and place orders online, eliminating expensive and time-consuming phone calls.

IBM\(^9\) is using its “Refurbished Computer Warehouse Web” site to sell PCs coming off leases. The site allows employees to view the machines’ specifications and then purchase them online with credit cards or through traditional methods such as a telephone. These offerings are restricted to employees and therefore should not be accessible nor visible to the outside world.

As employees get special prices, putting these prices into the public would put pressure on the company to reduce the price for the rest of the world. Depending on the security policies of the organization or company, people may be allowed to connect over the Internet via virtual private networks (VPN) to the Intranet using encryption lines and strong authentication for identification purposes.

The second area is the business-to-business (B2B) deals that are done over the Extranet. The Extranet consists of two Intranets connected via the Internet, whereby two organizations are allowed to see confidential data of the other. Normally only small parts of information are made available to the partner, just enough to enable the business. Business-to-business networks have existed long before the Internet. Many organizations have had private networks to talk to their partners and customers. But maintaining them was very expensive. Through the usage of the Internet the costs have been cut dramatically. In order to keep the business transactions private virtual private networks (VPNs) are used in most cases.

Thirdly there is the business-to-consumer (B2C) area. This is the most prominent one, which most people already have seen on the Internet. The web sites of Quelle\(^10\), a German Fashion retailer, Discolandia\(^11\), an online compact disc shop, and Megazine\(^12\) offer goods and services to anybody who comes to their web sites. Traditionally this is what most people know as e-commerce; selling products on the web, but as we will discover in this book, there is more than just this.

No matter in which of the three areas you want to do business, you should ask the right questions, before going online. Just having a web page or the

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\(^8\)http://www.apple.com/
\(^9\)http://www.ibm.com/
\(^10\)http://www.quelle.de/
\(^11\)http://www.discolandia.com/
\(^12\)http://www.megazine.ch/
Infrastructure for the Intranet, Extranet or Internet is no help. You need to
decide on your target group and think about the processes, which could be
done electronically.

Technically there is no difference between the Intranet, the Extranet and
the Internet. The Extranet and Intranet are subsets of the Internet, which
can be viewed only by certain groups. Therefore the book does not make a
distinction between these three forms of networks. The electronic business
that can be conducted is basically the same. With a restricted group it is easier
to force certain technical standards, but otherwise they are very similar. I will
write about differences whenever appropriate.

1.2.3 E-business Statistics

While listening to presentations, talks or reading books about e-business you
will hear or read about statistics on the Internet, its users and the prospective
business. There are many problems with these statistics, so I tried to avoid
them in this book and tried to concentrate on the things that really matter.

If you look at the numbers of online users, you will see that they are going
up. Depending on which statistics you believe the numbers are increasing ei-
ther faster or slower, but the tendency is clear, they are growing. The same ap-
plies to business. Every day more business is done via the Web. But how much
exactly nobody knows. Even if somebody would know for a certain moment, it
would already be false in the next. With millions and millions of servers and
clients connected to the Internet it is almost impossible to get precise data.
There is no precise definition what an Internet user is or what business on
the Internet means. An Internet user can be anything ranging from a browser
window, a cookie session over to a real person or a web proxy. It all depends
on your view of the world. If I connect from work to a certain web page I have
to use a web proxy server which relays my request and saves the pages in a
cache, just in case somebody else in my company needs the same information.
The web server sees the proxy address only, so those 6,000 people working at
my company site can appear to be one.

Although many people use statistics to show how successful the Internet is,
I don’t want to use them in this book. Figures for such a fast changing medium
look outdated immediately, even if they were correct. There is no doubt that
the Internet is a success and can be used in a highly successful manner for your
company, as well. Therefore the book contains a lot of real world (or even better
cyberworld) examples from the Internet with companies that are successful or
have failed.

Once you have built up a web site it will be useful to create statistics on the
use of the web pages, but those statistics will help you only with your web site
and will never give you an idea on the Internet as a whole.

The Internet is the first mass media that allows interaction. Radio, televisi-
on, newspapers, catalogues deliver information to your home, but there is no
way of direct communication back to the others involved in a certain process. You can send an order back to the catalogue company or send a letter to your newspaper, but this is not what you get when you go in a shop or walk into the newspaper office. There you get an immediate reaction on behalf of your request and this is what the Internet does. It moves everyone together, every piece of information, every service and every business to be instantly available anytime. The dream of the global village becomes true.

The winners of the Internet today are the UPS’ and Federal Expresses of the world. Due to the fact that many products on the Internet are not digitized yet, someone needs to ship the products from the online merchant to the customers. This will change in the future, as books, music and videos, which are the bestsellers so far, are digitized easily. The problem with a digital video, for example, is the copyright issue. It is too easy to copy it without paying for it. Therefore new methods of shipping digital products will be needed. We will see later on in the book how this could be done.

1.2.4 Strategies for Digital Business

Just going online, because all competitors are, is the wrong strategy. There are many reasons to go online, so choose one or more to be your primary goals. Otherwise it will be difficult to measure the success of your online venture. See what your competitors are doing and look out for new competitors that are now closer to you through the Internet.

In order to set realistic goals for your e-business, it is necessary to find out what portion of the overall business will be conducted via the web in the next twelve months and two years. Although you are most likely not getting the figures right, as the Internet is moving far too fast to be able to deliver reliable forecasts, these figures can indicate a trend. Where do you want to be then? Do you want to go fully digital and use the Internet as the main channel for the business, or is it “just” the fourth channel for your business. This leads to the question of how fast you are planning to grow your company. Many Internet start-ups have managed to grow very fast in very short time. In order to do so, you need a working Intranet based on the same key technologies as the Internet (e.g. TCP/IP). Only if your business is fully digitized you are able to grow at such a rate, as eBay\(^{13}\) or Yahoo\(^{14}\) have grown in 1998 and that was more than a thousand percent. This is essential because the design of the electronic business and the support infrastructure must be able to handle growth effortlessly over time. Otherwise, the company may lose valuable time and money re-engineering a site after a few months.

The expectations within the company need to be set right, otherwise the online venture will not maximize your revenues. Other than expected in the early years of the Internet, it takes much longer to get an return on invest-
ment. Therefore your company needs some good financial backing, otherwise you may not succeed on the Internet, which will also have implications on the rest of your business. Amazon.com took five years until it could get back the investments it made up-front.

If the Internet is used for cost-reduction, it is necessary to measure the costs for every single item up-front, which may cost more than using the Internet. The re-engineering of the businesses processes will help more than using new technology in most cases. In many cases less staff is required to perform a task. With the free time of the staff it is possible to implement new business processes without additional cost.

### Reasons for Going Online

Some of the most important reasons why a company needs to be on the Internet are the following:

- **Expand market reach** – Collect experience with a new customer segment.
- **Visibility** – Generate more visibility in your target market and gain mind share.
- **Responsiveness** – Increase responsiveness to customers and partners.
- **New services** – Provide new services for customers and partners.
- **Strengthening Business Relationships** – Real-time data increase the profit for every partner involved.
- **Cost-reduction** – Reduce cost of product, support, service and estate.
- **Channel Conflicts** – Prevent and resolve channel conflicts.

Table 1.1.
the above reasons, why they want to go online. But be careful, do not let your competitors drive you to this decision. Be there before the competition or take your time to develop a full business plan.

Once you have decided on the goals, you need to find criteria for measuring the success. Cost-reduction, for example, may not be really measurable. If a printer manufacturer is offering printer drivers on its web page, measuring the cost-reduction may be difficult, as the company may not have measured the costs before the introduction of the online service. Sending out floppy disks and CD-ROMs would have cost more, but were part of the price for the printer. Measuring now parts of the product separately may become difficult. Although measuring the cost-reduction may not be possible, the introduction of the online service will reduce costs for further products, as they require your company to put a price tag on parts of a product.

1.2.5 Strengths and Advantages of E-business

The strengths of e-business depend on the strengths of the Internet, which is the preferred infrastructure today and in the future. The Internet is available all over the world, twenty-four hours a day, seven days a week. It is simple to use and the transaction costs for the end user are low. The costs are also extremely low for the vendors on the Internet, compared to traditional distribution channels. The Internet allows two-way communications and is built around open standards. The two-way communication allows for direct feedback of the customers and the open standards mean interoperability between companies, web sites and services. It is fairly easy to integrate processes, services and products, once they have been digitized.

Using the latest software from BroadVision\textsuperscript{15} and others, it is possible to customize your entire web site for every single user, without any additional costs. The mass-customization allows us to create web pages, products and services that suit the requirements of the user. A customized web page does not only include the preferred layout of the customer, but also a pre-selection of goods the customer may be interested in. Internet pricing becomes irrelevant, as all prices drop to the lowest possible level. The only chance to distinguish the products of your company from the ones of your competitor is to add services that increase the value of the product without increasing its price (or just slightly).

Although many people are afraid of security breaches on the Internet, it can be made very secure through encryption, digital signatures and firewall software and secure procedures. This will allow companies to offer private information to their customers and business partners without having to fear that an unauthorized person is able to see that particular information. Banks, for example, are able to allow customers to look at their account balance in real-time without having to worry that a hacker will be able to break into the bank’s

\textsuperscript{15}http://www.broadvision.com/
computer system. This is achieved through the use of the above-mentioned security components, which allow trade on the Internet to expand.

Companies need to protect their customer profiles, as this information is very private and should not be passed on from one organization to the other without written consensus from the customer. The customers should never get the feeling that they are followed around on the web site and that every click is saved into a database. Providing a link to the privacy policy from the home page is a must for all electronic entrepreneurs, but only few have done it so far.

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**Advantages of E-business**

Getting into electronic business has several advantages:

- **Global Accessibility and Sales Reach** – Businesses can expand their customer base, and even expand their product line.
- **Closer Relationships** – Business-to-business sellers can grow closer relationships.
- **Free Samples** – Products can be sampled via the Web fast, easily and free of charge.
- **Reduced Costs** – Businesses can reduce their costly production by dynamically adjusting prices.
- **Media Breaks** – The Internet reduces the number of media breaks that are necessary to transport information.
- **Time to Market** – Shorter time to market and faster response time to changing market demands.
- **Customer Loyalty** – Improved customer loyalty and service through easier access to the latest information and a never closing site.

Table 1.2.

A web site is a good opportunity to reduce the cost of labor. By using a web site to answer questions of customers, one is able to reduce the number of calls to your service number and one is able to offer twenty-four hours of assistance. Your call center will be reduced and the people, who are now without any job,
can be reused to build up an online database, which helps customers to find even more answers online. This can go so far that only one or two people are left to talk to customers on the phone and they get their answers from the company’s web pages.

Companies who want to invest in electronic business are not restricted to the publishing, entertainment, information and software industries, as one could imagine. Every company will need to invest, as electronic business is more than just selling things online, it means moving processes and communication online, and this affects every company.

Today many work and communication processes have to deal with media breaks. This costs a lot of time. Consider someone calling a shop to order some products. The shop assistant will write the order down and pass it on to the person who is responsible for booking it. This person may type in the order and send out the goods. This simple process already has two media breaks: phone to paper and paper to computer. The information did not change, but the medium that carried the information did. Electronic business drives the information onto one digital platform, which can be shared by all the participants in the business process without having the risk of losing parts of the information in a conversion process. Digital information is not only more convenient, but allows also new applications, which were not possible beforehand.

Online tracking, for example, has become quite successful. This application could only be implemented because all relevant information were available electronically.

1.3 Reasons for Going Online

1.3.1 Expanding Market Reach

One of the major advantages of the Internet is its global availability. If you have a little company it is quite simple to expand the market reach beyond your geographic location and your current customer segments. Although this may relieve some of the pressure you experience in your current target market it will mean new pressure from competitors who are already on the Internet and are trying to get into your markets. The first phase would be to collect experience with a new customer segment and the new medium Internet.

Barnes & Noble\textsuperscript{16}, one of the largest chains of bookshops in the United States were forced to open a branch on the Internet, because they felt the pressure of Amazon.com\textsuperscript{17}, which is selling books over the Internet only and attracted more and more people who traditionally went into the shops of Barnes & Noble. The online venture started small for Barnes & Noble in order to gain experience, but grew fast after the initial pilot and has become since then number two in the online book selling market.

\textsuperscript{16}\url{http://www.barnesandnoble.com/}
\textsuperscript{17}\url{http://www.amazon.com/}
Tupperware on the other hand decided to ban all activities on the Internet. The Tupperware web site only contains marketing information. According to the CEO of Tupperware, the Internet is a marketing medium and they do not want to use it for anything else. The personal contact in the form of Tupper parties is essential; it is part of their company culture. In my humble opinion Tupperware is losing a huge opportunity, especially with people who just want to order another Tupperware box or replace one and won’t do so, as they have to go to the next Tupper party, which will take up a lot more of the customers’ precious time than they may be willing to spend.

On the Internet every company that offers goods, services or information is reduced to the same size: to the size of the customer’s browser window. Therefore it is easy for a small online translation service to compete with a large one. The customer will see differences in pricing, service and the way the company presents itself on the Web. This and what other people say about the online service are the basis for the decision. Marketing for the web site is important. Many people choose a web site because others are talking about it or because they have seen advertisements for it. If you had the choice to go either to Barnes & Noble’s web site or to MediaTechBooks web site, you would go and visit the first one because the brand name is well known. But other than with traditional shops, the customer most probably will also visit the second to double-check prices and offerings. Moving from one bookshop to the other costs only a few seconds and the customer does not feel the pressure of a shop assistant who may help the customer in making his or her decision.

1.3.2 Generating Visibility

Another important goal, especially for small and medium-sized enterprises (the so-called SMEs) is to gain more visibility. The Internet allows a company to present itself at very low cost. Although buying a computer and setting up an Internet connection may not be cheap, once you have it, setting up new web pages and adding prices, products and information costs very little and the costs for reproduction are practically nothing. You do not need to replicate a catalogue, a brochure or a flyer. Put it onto the Internet and it replicates itself. Each user generates its own copy when accessing your web server. This is especially true when you use one-to-one marketing tools that allow the customer to see a personalized view of your products, services and information. Through co-branding, you are also able to present your products and services on other web sites.

Generating visibility is substantial for every company. The better known your company is, the more people will be interested in doing business with you. In the early years of the Internet being online was a synonym of being cool and forward-thinking, but it was in no way a must to be online. This may

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18http://www.tupperware.com/
19http://www.mediatechbooks.de/
be true for certain industries, although it is difficult to find an industry where this is still true. Missing the opportunity to present your own company on the Internet, even with only a simple web site, is something nobody can do today. Several years ago the Security First Network Bank\textsuperscript{20} wanted to become the first Internet bank in the US. Now it is one of the largest electronic banks in the Internet business.

Early adopters have the advantage of getting to know technology in advance of the competitors. Therefore new technology enables small start-ups to become large organizations. Dell\textsuperscript{21}, who was selling in the early nineties computers over the phone, wanted to become the biggest computer reseller on the Internet. There is no doubt that they have achieved this goal. For Dell it was easy to move from telephone business to Internet business. As they do not have a channel, which involved shops and resellers, they did not have to resolve a potential channel conflict. All they did was move from one communication medium to another one, which offered them more possibilities.

With the traditional telephone business Dell had to send out catalogues to its customers. Using the Internet they have a web site which can be reached twenty-four hours a day with a lot of technology and little human resources behind. Once the web site has been set up, it is able to accept orders and offer instant help without any user interaction. As they still have their traditional telephone business, they have a call center, which can also be used to help web customers.

1.3.3 Strengthening Business Relationships

Implementing business-to-business communication on the Internet has a huge potential. In the past many industries have been using electronic data interchange (EDI) to simplify business processes and reduce the cost of communication between the business partners. Through EDI suppliers, manufacturers, distributors and retailers are able to share information on the inventory and enhance the flow of information and goods through the supply chain. Passing on the information electronically reduced the cost of communication and the number of errors.

The disadvantage of EDI is that it is very expensive and time consuming to implement, therefore many SMEs have not implemented it. Once a company has implemented it, every partner that uses it needs to implement it as well. Even if two companies have an existing EDI infrastructure, the special connection between these companies needs to be implemented. Consider a manufacturer with 50 suppliers; the costs are enormous for the manufacturer as it has to implement 50 EDI infrastructures.

The paradigm of EDI is good, but the technology was too expensive. With the Internet it has become accessible for all companies. Costs that have been

\textsuperscript{20}http://www.sfnb.com/
\textsuperscript{21}http://www.dell.com/
reduced by fifty times are not seldom and EDI on the web allows for more content. Exchange of multi-media information has been made possible and fosters much tighter relationships among participants. The real-time capabilities of the Internet provide a sense of teamwork and shared goals. EDI via the Internet enables all components and systems of a virtual value chain to communicate with each other automatically.

Early EDI implementations on the Web were proprietary standards, but more and more implementations do EDI via the Web by using XML documents. For further information on XML see Chapter 9.

1.3.4 Responsiveness

The Internet can support increased responsiveness to your customers easily. Increasing responsiveness to customers and partners is very important to tie customers to a company. Being responsive gives customers the feeling that they are treated well by the company. Trans-O-Flex\(^{22}\), for example, a logistics and shipping company in Germany gives customers the possibility to check the location of their shipments at any time. Although this feature nowadays is a must for all companies, it was something revolutionary a few years ago. Instead of calling your logistics partner and asking what happened to your goods, you can just go to their web site and check yourself, which means a cost reduction for yourself and even a greater one for the shipping company.

Responsiveness means also that when you give out e-mail addresses to your customers, somebody needs to answer these e-mails fast and competently. If they do not know the answer to the questions, they should know whom to ask within the company. As a rule of thumb, e-mail should be responded within one working day, even if you do not have the answers ready. Send a short notice that you have received the e-mail and that you will try to help to resolve the queries. Offering up-to-date information on your company to partners is also very important. GemPlus\(^{23}\), one of Europe’s leading smart card manufacturers, for example, provides partners with sensitive up-to-date information via a secured web connection (using basic authentication and SSL encryption). Partners are able to see this information using their logins and passwords. This part of the web site is GemPlus’ Extranet area. As you can see, technically there is no difference between Extranet and Internet, except for the limitation on the viewers.

1.3.5 Offering New Services

Offering new services is also a reason to go online. Introducing new services in traditional markets is difficult and expensive. The Internet on the other hand offers the possibility to introduce new services with very little start-up

\(^{22}\)http://www.trans-o-flex.de/

\(^{23}\)http://www.gemplus.fr/
Section 1.3. Reasons for Going Online

1.3. Reasons for Going Online

19 costs. New services should not only be provided for customers and partners, but also for employees. A service for the employees could be for example a search engine for the Intranet. The larger the company grows the harder it is to find relevant information on the internal network. A search engine is only helpful if all employees put their documents online. Even if they are not able to create HTML documents, it is fairly easy to upload existing word documents to the Intranet, which can be indexed by the search engine as well. The search hit-rate for non-web documents is lower than with HTML documents, but still much higher than not putting them online at all.

Hewlett-Packard provides specific configuration bundles to resellers over its order@hp.com web site. This is also a new service to Hewlett-Packard’s offerings. Up to then Hewlett-Packard did not offer pre-configured bundles online. The next step was to offer an online configurator where partners, resellers and end customers are now able to configure their PCs and Unix Servers using a simple web page. Complex configurations need special configurator tools. More information on configurator tools can be found in Chapter 7.

AutoByTel, the “Dell of the car industry,” offers a complete set of car services online. It is possible to buy, to rent, to insure and lease a car from a single web site. AutoByTel as the name suggests used to sell cars via telephone, so moving to the web was a natural thing to do.

1.3.6 Cost Reduction

The cost for estate, service support and production can be reduced greatly through the use of the Internet. So it is another very good reason to move business to the Internet. Printer manufacturers such as Canon or Epson use the Internet to distribute printer drivers and updates. The cost for replicating floppy disks or CD-ROMs is not very high, but because of the high volume of printers they sell, it is a very large sum in the end. The replication cost on the Internet are nearly zero. Although downloading the driver does not cost anything, the infrastructure to do this needs to be paid for. By generating new business on the Internet, these infrastructure costs become irrelevant to these companies, as they are generating additional business and offer an instant solution to missing printer drivers as one new service. This results in more content customers and less overhead.

The ExhiBit Gallery in Pisa, Italy, a small gallery focusing on contemporary paintings closed down its showrooms shortly after it moved to the Internet. The costs for the showrooms were too high to maintain and someone had to be there every day, just in case some visitors came by. As only very few visitors

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24 http://euros.external.hp.com/
25 http://www.autobytel.com/
26 http://www.canon.com/
27 http://www.epson.com/
28 http://www.gallery-net.com/individuals/
came during normal business hours, there was no reason, why someone should be there all the time. Their first reaction was to reduce the opening times, but this didn’t help much. Moving to the Internet did help a lot. The showrooms are now open 24 hours a day and about four hundred visitors a day from all over the world are visiting the online gallery.

Costs can also be reduced in the customer care center by offering frequently asked questions (FAQ) pages, where customers can find answers to frequently asked questions about a product or service. Newsgroups where customers can ask questions can also be very helpful. Other customers may be able to share their experiences and reduce the work load for the customer care center. In addition, companies can support employees and business partners over their corporate Intranets, keeping them informed and soliciting their feedback.

A company web site can also help to reduce inventory costs by shortening the sales and supply cycles. By distributing information in electronic form, you can reduce material costs by saving on paper, the printing and the manual distribution. The customer is taking over parts of the distribution costs.

Cost saving should not be seen as the primary goal in the long term. In the long term everybody will have saved cost and increased the profit. In order to survive it is necessary to have a deep relationship with your customers. This will allow you to charge more money for a service than others do, because service quality is what matters, not the base product.

1.3.7 Just in Time Inventory

As price pressure is very high on the Internet, it is necessary to reduce operating costs by reacting much faster to demand, as demand is created in real-time. Therefore it is necessary to cut down inventory to reduce the cost and adapt more dynamically to the wishes of the customers. The longer it takes to reach suppliers, the more inventory a company needs to hold to account for errors and delays.

Having large quantities of one product is not helpful, if your customer’s have highly dynamic demand for certain products. Therefore it is necessary to build stronger relationships with your suppliers and integrate them into your digital ordering process. Estimates on the product sales for the next day, week or month (depending on your inventory cycle) also helps to keep the overhead low. Therefore digital communication between factories, marketing and purchasing departments becomes essential.

In the United States an initiative called “Collaborative Planning Forecasting Replenishment”29 (CPFR) has been set up by retailers, wholesalers and manufacturers. It is in the process of setting up standards and guidelines for better forecasting. Using this system retailers and suppliers are able to exchange their forecast electronically and in real-time in order to change orders or production.

29http://www.cpfr.org/
Online bookshops, such as Amazon.com have only very limited stocks. They rely totally on their suppliers to deliver the books in real-time, which they then pass on to their customers.

1.3.8 Preventing Financial Loss

This lead us to the last reason we want to discuss here to go online. Preventing financial losses is one of the most important reasons. Although the Internet may pose a financial threat to your company it means also a great opportunity. The first few years, many companies need to invest heavily into a new infrastructure. But once you have made the break-even, it is much easier to resist the changes of the future. Amazon.com was in red figures until 1999 and only then a break-even was reached. Although being highly successful, marketing and infrastructure have cost more than the company received in revenues. In order to grow, Amazon.com needed to invest a lot in new customer segments.

One of Germany's largest shopping malls, My-World\textsuperscript{30} had to re-launch its web site in early 1998, because of lacking success. Since then it became an important online shopping portal for Germany. IBM's WorldAvenue\textsuperscript{31} had to be closed down, as it generated no revenues. These two examples show also quite clearly that it is not sufficient to convert existing environments to the Internet. They need to be adapted to have an impact and to be a success. In Chapter 7 we will see how shopping malls can be transformed to portal sites and become highly successful.

Although the Internet may pose a financial risk to your company, it should be no obstacle for you. Not investing into e-business will kill your company for sure. In order to make your e-business venture a success, the guidelines in this book may be helpful. As with most guides, this is not the only way to conduct business, but it is a way, which balances risks and investments in such a way that you will be highly likely to succeed.

1.3.9 Relevance to IT

Although your IT department should not need to be the driver for your business decisions, without them you are nobody on the e-business side of life. Your IT needs to adapt to understand the new needs for the New Economy. They need to employ Internet experts without reducing people with knowledge for the systems currently used. The IT department can gain experience in the Internet world by implementing an Intranet first. If you do not have an IT department or you do not want to invest directly into Internet technologies, then you should consider outsourcing the whole operation. If you have your own IT department and want to implement your own e-business strategy, keep in touch with them to learn what can be done and how much it would cost.

\textsuperscript{30}http://www.my-world.de/
\textsuperscript{31}used to be http://www.worldavenue.com/
For some new services it may be better to outsource the development and just maintain it on the own network. Your existing IT infrastructure should be able to cope with the changes that come along with the Internet. The Internet is changing all the time, so you need the right people with the right skills to move on into the right direction.

As more traditional electronic services, such as e-mail, remote access and web server hosting have become commodities, or off the shelf products, these services can be outsourced to third party services who specialize in these areas. This frees up resources in your IT department to deal with new services and technologies that are not commodities yet. Part of the IT department would start to act as a broker for services between the internal customers and the external service providers. This would allow IT to maintain control over the services, without having to keep up operations on a daily basis.

1.3.10 Concerns for Going Online

Traditional companies may have concerns for going online, as they have established processes and channels, which would require investments for the digital age. Many conservative companies are reluctant to invest into new technologies, processes and ideas, as they are successful in their businesses and fear that the investment will do more harm than good.

Employees in companies fear also that with the introduction of the Internet they may lose their jobs, as they are not qualified to work on the Internet. The Internet changes the work of many employees drastically. It requires the employee to adapt to the ever changing Internet. Long-life learning becomes more important in order to keep up with the latest developments on the Internet. Other than with traditional business were maybe nothing changes for ten years, technology and paradigms on the Internet change must faster.

In 1997 push technology was expected to take off and become the next big thing. Many companies were heavily investing in this technology and disappeared soon after. In 1998 nobody knew anymore why there was such a fuss about it. Push technology is still being used, but it has been integrated into many products, such as newsfeeds or automatic software updates which are triggered by the server and not by the user (which is called pull). The certainty on which many businesses relied in the past is gone. Only the companies that are prepared to invest will survive the challenges of the 21st century.

Resellers and merchants fear that disintermediation will ruin their business. Through the Internet it has become easy for a manufacturer to get in direct contact with the end customer. But most manufacturers cannot do this without conflict between the company and the traditional channels. Therefore manufacturers may be reluctant to go online, in order to prevent a channel conflict. More forward-thinking manufacturers may use the Internet, but not to reach out for the end customers, but increase their relationships with their resellers, for example.
Section 1.3. Reasons for Going Online

Concerns on the Internet

When going online people have many concerns. If you want to provide a solution, you need to take them into account.

- **Channel Conflict** – Disintermediation may happen.
- **Competition** – The competition is growing from a local competition to a world-wide competition.
- **Copyright** – Once information has been published on the Internet, it becomes easy to copy it and use it for own business.
- **Customer Acceptance** – Many companies are afraid that their customers won’t accept the new channel.
- **Legal Issues** – There is no legal framework for the Internet that is binding on a world-wide basis.
- **Loyalty** – The Internet is less personal, so people are not bound to a certain vendor.
- **Pricing** – The New Economy makes it easier to compare prices. Prices will drop, so quality and add-on services become more important.
- **Security** – Most companies are very concerned about security on the Internet.
- **Service** – A customer can compare the offerings of a certain company much easier with another one.
- **Viability** – Many companies are unsure about the viability of their digital business case.

Table 1.3.

Companies offering information and soft products on the Internet are concerned about copyright issues. Compact disc sales are dropping although more people are listening to music, the reason for this are the CD recorders, which make it easy to duplicate audio CDs and the file format MP3, which allows
transfer of songs over the Internet in a highly compressed way. Typical files in
the MP3 format are compressed at a ratio of 1:10, resulting in a 3 minute song
to be 3 MB instead of 30 MB. New appliances such as the Rio MP3\textsuperscript{32}
player replace disc man. Although unauthorized copying music over the Internet is
illegal many sites offer the files. Search for your favorite music and you can be
almost sure that you will find something.

A successful online business needs to be accepted by the customers. If none
of your customers has access to the Internet then providing an online service
is no good, if your company does not try to target new customers. Providing
your current customers with Internet access and Internet-enabled equipment
may cost too much. In order to move your customers to the Internet you need
to offer additional services that were not available without. Online ordering
should offer the possibility of tracking the order, for example, which would not
have been possible without the Internet.

Without a global consent on the legal framework that needs to be imple-
mented on the Internet many companies are reluctant to invest, as they are
not sure what the consequences may be for them.

1.4 Differentiating between E-business Categories

1.4.1 Overview

Electronic business is a super-set of business cases, which have been digitized
and work now on the Internet. An e-business category is defined by the busi-
ness case and not by the technology used to implement it. Over time more
and more types of business will be converted to a digital form, even though it
may seem impossible today. Technology is moving fast to make things possible
tomorrow, which seemed impossible today.

1.4.2 Categories

The following categories have been selected, because of their proven success on
the Internet. Many other categories exist and in order to make one of these
categories successful it needs to interact with the other categories. Commerce,
for example, without marketing and communication does not make a lot of
sense. These categories need to work together, both offline and online. The
Internet offers huge possibilities to integrate the categories and automate the
interaction between the processes.

E-Auctioning

Auctioning on the Internet has become a new dimension. In traditional auc-
tions a number of people turned up at the auction house and some people were

\textsuperscript{32}http://www.diamondmm.com/
allowed to bid over the phone. Getting to the auction house or bidding over the phone did involve costs, which may be higher than the value of the goods. Either auctions were restricted to a location or to a very exclusive circle of people.

The Internet makes auctions more democratic allowing everyone with an Internet connection to bid for any good offered. Everyone is able to go to the auction web site with a click, no matter where the server is located physically. The Internet also speeds up the bidding process. In the real world it can take quite a while until a final bid has been made. On the Internet most live bids are over in a few seconds. During the live bid an auctioneer registers the bids and hands over the goods to the highest bidder.

Besides the live bid, the larger sites offer bidding for everyone. The auction sites offer the possibility to present goods on a web page, which belong to individuals and that they want to sell. These private auctions are not live, the bidders place their price onto the web page and the auctioneer waits until a certain value has been reached or a time limit has been passed and then hands out the goods to the lucky one. Suddenly everyone does not only become a bidder, but also has the possibility to organize an auction.

eBay\(^{33}\), QXL\(^{34}\) and Ricardo\(^{35}\) offer the possibility for everyone to become either a bidder or auctioneer, or both at the same time for two different products. The web site becomes an infrastructure for exchanging goods based on the auction model, which works basically by setting the prices by demand.

The whole Internet is transforming the fixed price structures to a more dynamic pricing. Auction web sites are only the beginning. In a few years time, individual prices based on customer demand will be on every web site offering goods, information or services.

### E-Banking

Electronic banking is one of the most successful online businesses. E-banking allows customers to access their accounts and execute orders through a simple-to-use web site. There is no special software to install other than a web browser and many banks do not charge for this service. Some banks even lower costs for online transactions versus real life banking transactions. Electronic banking saves individuals and companies time and money.

Online banking puts the power of banking into the hands of the customer and allows the customers to self-service themselves with all their banking needs, just as customers have become used to getting money from an automated teller machine (ATM) instead of walking up to the cash desk in the bank. With this online service, customers can view their account details, review their accounts histories, transfer funds, order checks, pay bills, re-order checks and get in touch with the customer care department of the bank. The

\(^{33}\)http://www.ebay.com/
\(^{34}\)http://www.qxl.co.uk/
\(^{35}\)http://www.ricardo.de/
only transaction that currently can’t be done is the withdrawals of cash, but banks are working on resolving this problem.

To get started the virtual banking customer needs a computer or embedded device connected to the Internet and a browser. Depending on the security strategy by the online bank, you may need to install a plug-in or enable Java to increase the level of security in your browser. The plug-in or Java applet are used to increase the level of encryption to make sure nobody can intercept your banking transactions. Even more sophisticated systems use smart card technology to allow secure access for their customers. Another option to make banking more secure is used in addition to the ID and login; a list of transaction numbers (TAN), which are one-time passwords that can be used for a single transaction.

Many people use PC banking software such as Quicken, which are personal financial management software packages, which are not the same as electronic banking. The major difference is that with PC banking, software is loaded onto your computer and all your transactions are handled through a third party vendor, adding security issues to the e-banking service.

Electronic banking is an online service that allows customers to perform the same banking functions as in Quicken except that they can access their accounts directly over the Internet.

**E-Commerce**

If we look back, commerce in the pre-Internet age was very restricted compared to the possibilities the information technologies and the infrastructure (information infrastructure) offers. The major limiting factors were time and space. Even if shops were open twenty-four hours a day, only a limited amount of customers can come to the location of the shop. The shop can also offer only a limited selection of goods, as space is limited on the premises of the shop.

A shop on the Internet is unlimited in space and time. There are no limits in the amount of products a shop can offer. Amazon.com offers more than 4.7 million books. Imagine a bookshop, which has 4.7 million books in stock. The comparison may not seem fair, as Amazon does not stock the books, but orders them on demand. But Amazon.com does offer information on every single book.

Online retailers (sometimes also called e-tailers) offer either more products than traditional retailers do or more service for the same products. On the Internet books, compact disks and tickets are outselling their traditional counterparts, as these products are bought because of their content and not because of their design. The look and feel of a flight ticket is not important, the price and the service are what really matters. New technologies make the Internet also attractive for goods that are bought on an emotional basis, because of their design and not their content.

The Internet is changing the traditional sales model, which is tactical in nature. The companies used to produce a deliverable, either a product, service
Section 1.4. Differentiating between E-business Categories

or piece of information and then employ the 4P’s of marketing (price, product, promotion and placement) as the foundation of their efforts to sell it. Internet commerce, on the other hand, is far more strategic. While most companies view their products purely in terms of the demand conversion stage, Internet commerce will force them to increasingly view the entire sales cycle (market development, demand creation, fulfillment, customer support and customer retention) as their product. In the tactical model, these above mentioned phases in the sales cycle are just extras that aid in pre- and post-sales. In a strategic model, however, they are building blocks of the entire sales message.

Many people think that e-commerce is the same as e-business, but as defined here it is only a subset. This may be true for many end customers who only deal with companies when buying goods. E-commerce was one of the first business types to become digitally available, but the Internet offers more than just buying and selling products and services.

E-Directories

Directories have always played an important role in finding a particular service or product. Telephone directories, the so-called white pages for private telephone numbers and the yellow pages for businesses have been essential in locating a person or business. In addition to the directories in book form, the telephone companies allowed people to call in to ask for information.

These two functionalities have been merged on the Internet. The database is located in a single place, providing a centralized functionality, but offering it to anyone at any time, making it a decentralized solution.

The Internet offers the possibility to replicate the phone directories without many hassles, but it can do more than just search for a name and receive a phone number. On the Internet, for example, it is possible to enter a phone number and get the name. Moreover new directories are necessary to locate the web pages of people and businesses and their e-mail addresses.

The Internet makes the retrieval easier and more difficult at the same time. Easier, because the means of searching are more powerful. But finding a particular piece of information has become more difficult as the amount of information has increased dramatically with the introduction of the Internet.

E-Engineering

Engineering has also changed dramatically over the last few years. Just a few years ago, engineers working on a draft needed to be all in the same office to work effectively. If a design needed to be sent out to another location, large prints needed to be made, which were sent via postal service to the other location. There the design was refined, checked or processed. All these processes involved a lot of manual work, making them slow and error-prone.

The Internet changed the speed of design. It enabled electronic collaboration to a much higher degree than was possible ever before. The location of the
engineers does not play a role anymore. Everyone with an Internet connection is able to take part in the development. New tools for concurrent development have been developed to support the possibilities of the Internet.

Through the Internet it has also become possible to develop continuous engineering by letting engineers participate from all over the world. Open source development is done that way very efficiently. Anybody is able to take part and can donate a piece of code whenever there has been some time to program it. This will vary for every person involved.

E-Franchising

In the past big traditional franchising companies like McDonald’s\(^{36}\) and Benetton\(^ {37}\) have made their money by vending their products and brands to resellers who sell exclusively the products of the franchising company. These resellers are called franchising partners. By offering a set of products and brands the franchising company guarantees a certain success for the retailer, as people tend to like buying these products, as the brands are well-known. The advantage of the franchising companies is that they do not need to invest in shop personnel, for example. The franchising partner is responsible for the employees and the financial success of the single outlet.

Electronic franchising works very similarly. It has become actually much easier on the Internet. Moving digital products, processes and brands is extremely easy. The affiliation programs of the large booksellers on the Internet are one example. They are not truly franchisers, as the large booksellers have their own store. But they allow franchising partners to exclusively distribute their products on the partners’ web sites. The advantage of this system is that there is no distribution costs involved. It is possible to link to the original products without letting the customers know. Quelle\(^ {38}\), for example, is selling books on its web site. Books are not part of their core product set, but through a co-operation with Libri\(^ {39}\), they are able to offer more than 1.5 million books on their web site.

E-Gambling

Although there are moral issues about gambling, it is one of the most profitable businesses on the Internet. In the real-world gambling is restricted by many laws, making it difficult to access the casinos. The owners of the games often need to pay high taxes to the state, which make it also difficult to create competition. Per state only a certain amount of casinos are allowed.

On the Internet this has changed dramatically. Gambling is still not legal in some states and the taxes are still high in these states, but the business

\(^{36}\)http://www.mcdonalds.com/
\(^{37}\)http://www.benetton.com/
\(^{38}\)http://www.quelle.de/
\(^{39}\)http://www.libri.de/
has moved to places where gambling is legal and only low taxes need to be paid. Most gambling web sites have moved to the Caribbean or South America, where no laws on gambling have been implemented.

The companies who operate the gambling web sites are able to operate the full program of games, without any restrictions. As the owners have their companies in countries where gambling is legal, they are able to operate without fearing the intervention of the state. But other than real-world casinos, which are restricted to the geographical location, online casinos are able to attract gamblers from all over the world with a mouse click. Companies such as 123Gambling\textsuperscript{40} and CasinoPlace\textsuperscript{41} attract hundreds of thousands of gamblers every day.

### E-Learning

The constant change on the Internet requires also a change of learning. In the industrial age, the subjects and the content taught did not change a lot. Changes to the curriculum did occur over the years, but compared to the Information age change was extremely slow. Having a job for forty years, working in a steel plant, for example, is not possible anymore. Fluctuation between jobs is much higher, which requires a readjustment of the job focus. New technologies appear in Internet time, which require learning new technologies, paradigms and processes all the time. Long-life learning has become a necessity, as teachers need the same time to learn a new subject just as long as the pupils need to. As knowledge becomes a major income factor, it is often not possible to wait and learn a thing in a school.

Computer-based training (CBT) has been introduced a few years ago, making it possible to learn via computer. Software is used to explain the subject and then tests the pupil. Although this is an effective way of learning some subjects, there is nobody you could ask, in case of a misunderstanding.

Electronic learning sometimes also called Internet-based training (IBT) offers a new dimension in digital learning. Instead of receiving an executable file, which is used to explain and test a subject, the material is presented online. Tests are executed in real-time together with other participants and the pupils are able to exchange ideas and questions. In addition an online teacher can be offered, which is a real teacher, who may explain topics to anyone attending a course, no matter where the people are located. This can all happen in real-time. Instead of waiting for the next hour, the students can connect to the learning network, whenever they want, making the learning experience more individual, allowing people to learn at their own pace.

An Internet-based training can also be offered to students, before the complete course is available. For hot topics the course can be developed at the same time as the students start to learn.

\textsuperscript{40}http://www.123gambling.com/

\textsuperscript{41}http://www.casinoplace.com/
E-Mailing

Many people do not think about e-mail when talking about digital business. But communication is the basis of all business. The Internet breaks into the traditional communication markets. Postal services and telecommunications companies are losing market share to the electronic communication, especially e-mail. E-mail combines the strengths of phone calls and letters. The advantage of a phone call is its immediacy and the letter has the advantage that everything is in written form. The Internet enables instant communication in written form, either by e-mail or online chat.

More and more businesses are talking digitally to each other. Other than a phone call, e-mails can contain more than just the text. It is possible to attach files, which may, for example, contain formatted documents, presentations, images or sounds. Information can be shared much more easily.

E-mail does also change the way people communicate. Instead of writing down every aspect in a single letter, thoughts may be spread over multiple e-mails. The advantage is that a thought may evolve through instant response, but it also means that you expect instant response to every e-mail that has been sent out, just as everyone expects a response from you.

E-Marketing

Traditional marketing was focusing on target groups and creating a positive image for that particular group. Communication in advertising was one way only. The marketing team could not get immediate results on the customer reaction. In the pre-information society this was fine, as there was time to do surveys and publish the results, which influenced the company strategy and the products.

In the information society everything has started to flow. Products, strategies, prices, everything depends on the customers’ needs. Everything becomes much more customer centric. The demands of the customer directly affects product design, marketing strategies, and the product pricing. As marketing traditionally has direct ties to the customer, the information flowing back from the customer in real-time needs to be passed on to the appropriate department within the company to react in real-time to the ever faster changing demands of the customers.

The Internet allows companies to react to individual customer demands. All customers can be treated in their preferred way. One-to-one marketing has become the standard way of dealing with customers over the Internet. One-to-many marketing does not work anymore in Internet time.

E-Operational Resources Management

Besides the goods that are needed for production, companies need to buy operational resources. These are the non-production goods and services that are
required and managed on a daily basis to run the day-to-day business. The areas for operational resources include capital equipment (such as computer equipment), maintenance, repair and operating (MRO) supplies (such as office supplies) and travel and entertainment (T&E) (such as travel services).

The process of acquiring the operational resources involves many organizations and departments within the company, which deal with many different suppliers. The suppliers are providing services, goods and information. Although the operating resources do account for a large amount of company spending, the buying process is often not well organized and managed. In many cases a paper-based process is used for ordering new pencils and phone lines. Due to its decentralized approach in many companies, every department is able to handle the operational resources on an individual basis, which results in higher prices than through a central buying organization. Once a central buying organization has been put in place, the paper-based process needs to be digitized in order to automate, control and leverage it. As long as the process is not digitized, the company is not able to control the spending and the suppliers involved in the process.

Operational Resources Management (ORM) allows companies to manage operational resources more strategically, by using the Internet and its connectivity to provide a communication infrastructure, where buyers and suppliers can work together on a direct basis without losing control over the spending. Actually the company gets more control over the spending through the electronic management system. Introducing ORM does not require additional hardware or software to be installed, as many systems run on standard web browsers, which can be run on any computer platform. Through the use of electronic communication the cost per transaction can be lowered significantly and the process can be strongly automated.

E-Supply

Numerous independent companies and customers form a supply chain. Manufacturers, logistics companies, senders, receivers and retailers all work together to co-ordinate the order generation and order taking. The offer fulfillment and the distribution of the products, service, or information are organized through the supply chain management. By digitizing the products, the processes and the communication, the Internet has a great potential in linking and managing these organizations. Although EDI was able to link up the companies, it never really took off, as small and medium sized companies could not afford an EDI link to each partner they worked with.

The Internet reduced significantly the cost for starting up the digital business-to-business communication. Through the use of open standards, such as XML and Java, supply chain partners are able to share and exchange information more easily and with lower costs involved. The supply management process may even be contracted to a third party instead of developing one's own
applications and investing in separate systems. In this intermediated market, sophisticated logistics management and automated supply-chain management are available almost universally.

**E-Trading**

Before the Internet, buying and selling stocks was restricted to people with access to financial networks, in order to buy and sell the stocks at the right moment. Others could only get the stock quotes in the newspaper, which was fine, if you did not want to make money fast with the stock market.

The Internet has changed the way stocks are traded. E-trading, often also called E-brokering offers the real-time stock prices to every desk throughout the world. People are able to react in real-time to changes in the stock market. Everyone with an Internet bank account is able to buy and sell stock. This enables anyone to participate in the stock market and earn money by investing. Although the stock market is more risky than ever through the computer based trading, it also offers access for people who did not even know what a stock option was a few years ago.

1.5 Using the New Paradigm of E-business

1.5.1 The Interoperable Network

In the early nineties a strong concentration on the computer market appeared, the so-called Wintel (composed of the software Windows\(^{42}\) and the hardware Intel\(^{43}\)) monopoly was at its height. In order to exchange information with business partners everyone was forced to use the same operating system, the same word processor and the same hardware.

With the introduction of the Internet, incompatible devices have learned to talk to each other. This allows interchanging products and integrating processes. This is achieved through the use of digital technologies based on open standards. Moving everything to the same basis started to converge networks, markets, products, technologies and business processes.

The convergence of the networks was the first segment. Telephones, broadcast networks, satellite and wireless networks are now all able to send and receive digital signals. Sending information from a mobile phone to a standard telephone network is possible. It has become totally transparent to the user, which networks are used to route a phone call. A phone call from the United States to Asia may be routed through satellite networks, the Internet and normal telephone networks.

Through the Internet several regulated monopolies face competition from those who used to be in different markets. Suddenly telephone companies, ca-
ble television operators and power supply companies have become competitors to offer access to the Internet and website owners and television broadcasters start to offer competitive products. Market boundaries are breaking down, just as geographical boundaries have started to collapse.

More and more products are now available in digital form: audio signals, such as voice and music, video signals such as television and video broadcasts, textual information, such as books, magazines and news. All these pieces of information from other media have been moved to a new medium, the computer platform, where databases, computer software, such as office applications and games were in use. Through the use of networks, which all evolved into the Internet, all these types of information could be easily transmitted to any place in the world.

Different types of technologies, such as printers, computers, cameras and mobile phones, are moving closer together to offer the users a wider area of appliances. Using a mobile phone to communicate with a digital camera and a printer without a computer as an intermediary is already possible. The Internet makes it possible.

By digitizing processes, different types of processes in a value chain are integrated into a seamless process. A digital process can be much easier mass-customized by using digital feedback from the customer. Through the feedback mechanism it is also possible to streamline processes much more easily than it would have been possible in the real world.

The convergence brings many new opportunities for start-up companies and many uncertainties for established companies. Start-ups will use the new technologies to implement new processes and products, while many traditional companies will try to convert their current success to the digital world without enhancement. A dictionary in book form and on the Internet will use the same base of data, but presentation and functionality will be very different than if a company just replicates the book by providing a web page with all the content. The Internet-based dictionary will have search and link capabilities that exceed the cross-indexing features a book can provide. Some companies do not add these new functionalities the Internet offers, in good faith their current set of features are satisfying the needs of their customers. Start-ups will see their opportunity to get into the dictionary market and will win market share by offering new digital products. These new products mean new uses, new customers and new ways of doing business. Traditional companies focus on the opportunity to expand their business, but start-ups focus on the novelty of the Internet and its possibilities.

1.5.2 The New Economy

Digital business is causing an upheaval that is shaking the foundations of traditional business. More and more companies recognize the opportunity the Internet offers and start to establish an online presence with a sound business
model behind it. Increased revenues and additional customers who return voluntarily to the company are drivers that bring more and more companies to digitize their offerings. Through the Internet it is possible to invent new and innovative ways to add value to existing products and services without necessarily spending a lot of money.

Over the last few years the Internet has established itself as a mainstream medium. With the publication of the Starr report on Monica Lewinsky\(^{44}\), which was released first on the Internet, everyone was made aware of this in the traditional media. Television news broadcasts were showing online excerpts, as no other information was available. Many sites replicated the report and newspapers printed parts of it.

Internet technologies are advancing to support commercial transactions and in addition to this, new commercial transactions have been invented by these new Internet technologies. Companies need to move fast in this New Economy. But speed is not the only factor that is important to succeed in electronic business. Careful planning and execution are just as important as moving on quickly. This requires the combination of a variety of skills and disciplines, many of which are new and unfamiliar. Computer companies, advertising agencies, Internet providers and service providers come together and act on an equal level of expertise. In the industrial age, every company had expertise in one field. In the information age, every company has a lot of expertise in its own field and at least some expertise in the fields of the others.

\(^{44}\text{http://www.house.gov/icreport/}\)