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„Zastosowanie elektronicznego marketingu w procesie reengineeringu"

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Introduction

Rapid changes take place in companies' business environment of the '90s. Becoming highly unpredictable it forces organizations to be more flexible and innovative in their performance. Product life cycles became much shorter, consumers' behavior patterns and attitudes are changing. All of this is accompanied by the diminishing level of their loyalty. Production of modern, high quality goods in most cases is not sufficient, because as said Nissan Canada's CEO, Eisuke Toyama [220]:

> *"No matter how good our products are, that is not enough to be successful in the overcrowded marketplace of the '90s, when everyone has a good product (...)"*

So, to stay competitive, attract new customers and retain old ones, companies have to offer consumers much more: extended warranty period, 24 hour customer support, customized products and services, short delivery time, richer package of services delivered with a product, more convenient terms of payment, competent and well trained sales personnel, permanent products betterment. Simultaneously, globalization of competition becomes a fact. Companies which for many years have led their business activity on the local market and competed with native firms only, suddenly have to face new, often very powerful and perfectly organized competitors from around the world. All those factors increase competition to the previously unknown level.

There are many reasons of described above situation: technological advancements, removing the trade barriers, growing consumers' income, shifts in their spending patterns, increasing consumers' awareness, permanent changes which take place in the societies around the world. Three forces are pointed as the most important in driving changes in business environment of the '90s [137]:

- **speed** (constantly accelerating rate of changes),
- **nature of a business's assets** (increasing importance of intangible ones),
- **technology**.

It seems that especially important role in the changes, which have taken place in the last few years have played the rapid development of information technology and related to it explosion of the Internet. The main factor stimulating this advance is increasing availability of more powerful and cheaper computers accompanied by the permanent betterment of telecommunication infrastructure, which becomes faster and more reliable.

The Internet was seen for many years mainly as a realm of academics, but such a approach is now a past. Growing from month to month number of people and companies using it for various purposes proves that is a place where emerges electronic market with huge potential and big dynamics of growth.

The Internet effects business environment twofold. On the one hand it increases the level of competition, makes it global, changes customers' attitudes who have ac-

cess to huge amount of information and can easily compare offered products as well as their prices [186]. On the other hand it provides organizations with new, previously unknown possibilities of growth and development, offers new channels of distribution, makes access to the global market relatively easy, provides with new tools allowing for building competitive advantage, gives possibility of redefining relationship with customers and creating it in a quite new way. Although thousands of organizations have involved the Internet into their business strategy, there are still many others treating it as a fad without any real impact on the business environment, neither today nor in the future. It's obvious that such a approach is a big mistake, because an electronic market, which forms around the Internet, although not fully matured yet, is a reality and its influence on companies and customers increases with every month. Victor Millar, President and CEO of AT&T Solutions summarizes this situation in the following way [189]:

> *"The digital economy, of which Internet purchasing is just one phenomenon, marks a real change and opportunities for what we call 'value reformation' in the Global 2,000 market. The impact could be as big as deregulation because it affects every business, whether or not they are online today. It's a ripple effect. Even if your customers are not online, your customers' customers probably are"*

The Internet and changes it brings are treated very seriously by the governments of the most economically developed countries in the world. On July 1st 1997, the government of the United States released the special document *"A Framework For Global Electronic Commerce"*, signed by President Bill Clinton and Vice President Al Gore. It presents opinion of the American government about the Internet and issues related to it. The document indicates many new possibilities, but also underlines the areas of possible threats. It is presented there a policy of American government towards this new medium, along with solutions which will be supported by him in the future. Also opinion about the areas requiring special regulation and those which don't need it are expressed there. Here is a part of this document [50]:

> *"Over the next decade, advances on the GII (The Global Information Infrastructure) will affect almost every aspect of daily life - education, health care, work and leisure activities (...) As the Internet empowers citizens and democratizes societies, it is also changing classic business and economic paradigms"*

Even today, at its infancy, the Internet influences everyday life of some people in a very surprising way[1].

[1] "The Times" describes case of a certain American family who searched for a new place to live, because of rising crime in their home city. Thanks to the camera placed in one of the windows showing through the Web site view of Trinity Square in Colchester (UK), they were able to observe people living there and their everyday life for 24 hours. After few months of such observations family came to conclusion that is a peaceful as well as a friendly city and decided to move there [109].

As to the economy, the impact on this field is currently even more meaningful. In spite of its imperfection, the Internet effects almost every area of business activity. On financial markets banks have to compete with non-banking institutions offering services previously reserved for banks only, including new forms of payment (digital money, smart cards etc.). Production companies use the Internet to create new forms of co-operation with their sub-suppliers and retailers (*virtual organizations*). On the mass media market, traditional newspapers and magazines have to compete with many permanently updated *on-line* news and *on-line* magazines. Competitors for retailers become proliferating electronic shops and malls which offer products often cheaper than in traditional ones and almost always enriched with additional value. What's more, they are never closed. Airlines try to bypass intermediaries (i.e. travel agents) selling tickets *on-line*. New jobs emerge (e.g. *Webmaster*) as well as new forms of work (e.g. *teleworking*). The examples can be multiplied.

It becomes obvious that in order to compete successfully on the contemporary marketplace and fulfill growing customers' expectations using for this purpose the opportunities which arise with the Internet development, it is necessary for organizations to implement deep changes in their current way of performance. Particularly marketing, which is one of the key elements of every contemporary company, requires redesign and rethinking in these new conditions. The Internet providing organizations with new tools as well as giving them new opportunities of functioning, radically changes many paradigms being the basis of so far used marketing approach and influences all elements of the marketing-mix. Also integration of traditional marketing activities with new, electronic ones becomes indispensable.

It seems that particularly useful for implementing necessary changes can be introduced at the beginning of the '90s conception called *business process reengineering* which one of the basic postulates is abandoning of used for more that 200 years the division of labor approach. This philosophy of work proposed in XVIII century by Adam Smith in his classic book "*Wealth of Nations*" is the basis of handling with work in most of the contemporary organizations around the world. Breaking work into small repeatable tasks was claimed by him as the best way of improving productivity and he presented the advantages of this approach on the commonly known example of pin factory [255]. At the turn of XIX and XX century mentioned above mentioned conception was developed by Frederick Winslow Taylor in his scientific management theory. He postulated there, among other things, strict planning and execution of every task as well as clear division of work between employees and management [267]. Pyramidal organizational structure, common in most of the contemporary companies is a simple consequence of basing by them on the division of labor approach. The structure like this is characterized by the great number of controllers, planners and managers of many levels, but in spite of this nobody is in fact able to control a particular process entirely. Mentioned above organizational structure was suitable for companies for a long time. Breaking work into tasks facilitated control as well as planning and when necessary it allowed for easy growth of organization by adding new workers at the bottom of the organizational pyramid [43]. But with the passage of time breaking work into small pieces and being a consequence of this philosophy a hierarchical structure became ineffective. The question

is why ? The answer is relatively easy. The environment in which contemporary companies have to lead their business activities is quite different that those ones which existed in times of Adam Smith or Frederick Winslow Taylor. Turbulent environment forcing organizations to be much more flexible than ever before, caused that so far used tall organizational structures became a burden precluding them from taking quick and effective action necessary for fulfilling requirements of contemporary customers. Simply the model which applied to managing physical work cannot be used in contemporary knowledge based companies [81]. New economy, called by Charles Handy "*Three I Economy*"[2], requires another organizational approach [159].

The end of '80s was the time when it turned out to be clear that in order to meet the requirements of the contemporary marketplace and their customers it is necessary to change radically orientation and focus on processes instead of tasks. At this time growing number of companies, initially mainly American ones, with assistance of consultants began implementation of this approach in practice and the term *business process* became one of the most popular and discussed management issues. The consequence of process orientation became changes in companies organizational structure which have been now seen as a set of processes. Also other elements of organizations' functioning are changing. It relates to employees' and managers work style or scope of their responsibilities. Those shifts are very deep and often difficult to be accepted.

This dissertation contains the detailed analysis of information technology utilization, particularly the Internet, in implementing deep changes in the marketing process by means of business process reengineering concept. The whole aspects related to it are discussed in detail. Finally proposals of electronic marketing utilization for reengineering of travel agency are be given.

In *Chapter 1 "Implementation of changes in companies' performance"* all issues and definitions related to business processes, their hierarchy and features are be given. Two concepts of implementing changes based on process orientation are presented and compared. First of them is *business process improvement*, the concept which assumes betterment of existing processes. The second one is *business process reengineering*, concept which suggests implementing deep, radical changes. In the further part of this chapter the closer attention is concentrated on the latter one. The wide range of issues related to reenginneering are discussed: historical draft, basic assumptions of this concept, its definition, criteria for selecting process in which implementing changes is necessary, organizing people implementing changes, features of the processes after completing reengineering. Also the most important change enablers are presented and discussed. The most meaningful issues related to reengineering's implementation are discussed. The review of most commonly used methodologies along with accompanied techniques and tools is made. The most important problems occurring during the implementation of reengineering are shown and evaluation of this concept's effectiveness based on various surveys is made. Also analysis of basic reproaches against BPR is carried out together with assessment of their pertinence. At the end of this chapter the reengineering's perspectives for the next years are presented.

[2] Information, ideas and intelligence [123].

Chapter 2 "Characterization of the Internet and electronic market" is devoted to the Internet and electronic market emerging around it. The historical aspects of electronic markets development is presented and its definition are given. Also definitions of electronic commerce and electronic marketing are presented there. In the next subsections characterization of the Internet as a factor which in the few previous years had the biggest influence on changes taking place worldwide, are given. Particular attention is focused on its multimedial part the WWW, as the area in which the commercialization is the most dynamic. The economical potential of the Internet is shown on the examples from various industries as well as basic elements slowing the development and commercialization are given.

Chapter 3 "Payment and security systems used over the Internet" is devoted to closest discussion of two basic elements which have deciding influence on the Internet's commercialization: payment systems and security systems. Two first subsections are focused on systems used over the Internet for providing security of data. Description of public key cryptography and secret key cryptography is given along with accompanied issues. The most important practical implementations of systems as Pretty Good Privacy are presented. In the further part, the most popular protocols used for providing secure data exchange as SSL, S-HTTP and SET, are described. Also the scope of their practical application is shown. The next two subsections are devoted to discussing payment systems used on the Internet. The basic requirements of them are given. Four basic groups of payment systems are presented: credit cards based systems, smart card based systems, digitized "e-cash" systems, payment clearing systems. The most representative, for each of the group, implementation examples are presented, including their advantages and limitations.

In *Chapter 4 "Possibilities of the Internet's exploitation for business purpose"* the most important possibilities of the Internet from the organization's point of view are be discussed. The basic issues which make electronic commerce and generally the Internet valuable for the organizations are shown. In the next step the basic business models being exploited by the companies on the Internet are analyzed. Also, as particularly important, the possibilities of the Internet technology utilization for the companies' inner purposes, as Intranet, are shown. In the next subsection the problem of virtual organizations as a new form of co-operation, possible to be practically exploited thanks to the Internet's dissemination are discussed. The phases of virtualization, from both functional and organizational point of view are presented as well. In the last subsection the current state of the Internet's exploitation in companies' performance are presented. They are based on surveys made in U.S., UK and Central European countries.

In *Chapter 5 "Exploitation of the Internet in marketing process"* attention is focused on detailed presentation of possibilities of the Internet's exploitation in marketing. Communication models characteristic for electronic market, one-to-one and many-to-many, are presented and discussed. In the next subsection new marketing tools provided by the Internet along with the description of their practical usage are presented. The following subsection shows the opportunities of Internet's usage for conducting marketing research. Possibilities of collecting both primary and secondary data are presented. The next subsection shows the Internet's influence on ele-

ments of marketing-mix. The possibilities of adding new value to goods and services being sold on electronic market are be shown. Also attention is focused on products customization and prospects of offering new products, typical for electronic market only. New forms of promotion and the Internet's usage as a new distribution channel are presented as well. All those issues are enriched with examples. The next subsections present the possibilities of usage the Internet for customer support. Also basic elements of the Internet's etiquette are given. In the next subsection the attention is focused on describing new paradigms which are proposed for electronic markets, particularly concept of one-to-one marketing. The comparison of traditional marketing and electronic marketing have been made as well. The new marketing cycle suggested for electronic market is presented and each of its phases are discussed. The last subsection contains examples of practical utilization of electronic marketing in performance of companies from various industries.

Chapter 6 "Exploitation of electronic marketing for implementing changes in travel agency - case study" presents the concept of the Internet and electronic marketing exploitation for the purpose of reengineering in the real travel agency. In the first subsection the company and their current functioning is presented. Particular attention is focused on the way of leading marketing activities. In the next step, the outline of the Internet's exploitation for company's purpose is presented. The suggestions referring to new marketing tools usage for promotional purpose are made. Also proposals for their exploitation in creating relationships with customers in a new way by extending and improving the level of the service are presented. Suggestions for the Internet's usage as new direct sales channel of companies products are made. In the next step description of necessary modifications in company's processes in order to adjust them to performance over the Internet are given. Including description of new roles of employees and pointing out the necessary skills for them. Methods of conducting analysis of effectiveness of company's Internet presence are presented and applications supporting this process are suggested. Also the complete methodology of conducting reengineering in company is given.

The last *Chapter 7 "Final conclusions"* contains the findings arising from this dissertation as well as proposals of researches in the future.

1. Implementation of changes in companies' performance

1.1. Processes

1.1.1. Process definitions

As it was mentioned earlier the change of orientation from tasks to processes is one of the most important challenges which face contemporary organizations. So let's start with a process definition. Since there are various ones, below we will quote few of them. According to [125] **process** can be described as "*any activity or group of activities that takes an input, adds value to it, and provides an output to an internal or external customer*". The definition given by Davenport says that "*a process is simply a structured, measured set of activities designed to produce a specified output for particular customer or market*" [67]. Österle underlines the role of information technology. His definition says "*process is a set of activities, which are to be undertaken in a specified sequence and which are supported by information technology applications*" [215].

1.1.2. Process hierarchy

As process was defined above it is necessary to underline that their complexity can be different. There are processes which are quite simple, but also some of them are vast and complicated. Because of their complexity Harrington proposes the following hierarchy [125]:

- macroprocess,
- subprocess,
- activities,
- tasks.

In the approach of American Productivity & Quality Center only two process levels are used [10], [232]:

- macroprocess,
- sub-process.

1.1.3. Defining business process

Every organization is a set of various processes and their amount oscillates between 10 to 20 [25]. Harrington divides all processes, which can be identified in companies into two types: **production processes** and **business processes**. First ones he defines as: "*any process that comes into physical contact with the hardware or*

software that will be delivered to an external customer, up to the point the product is packaged". And business processes in his approach are described as "*all service processes that support production processes*" [125]. It seems that more common is the view represented by Davenport or American Productivity & Quality Center stating that business processes are all processes existing within the organization and they can be defined as "*a set of logically related tasks performed to achieve a defined business outcome*" [71]. Additionally every business process is characterized by two important features [67]:

- it has customers (internal or external),
- it crosses organizational boundaries.

Business process are often also divided into **operating (operational) processes** and **management (management & support) processes**. Table 1 presents classification of business processes existing in organizations, prepared by American Productivity & Quality Center together with Arthur Andersen & Co., based on mentioned above division. In every company the set of them can vary. Also terminology used by them can be different.

Table 1. *Classification of business processes existing in companies*

Operating Processes	Management & Support Processes
• Understand Markets & Customers • Develop Vision & Strategy • Design Products & Services • Market & Sell • Produce & Deliver • Invoice & Service Customers	• Develop and Manage Human Resources • Manage Information • Manage Financial and Physical Resources • Execute Environmental Management Program • Manage External Relationships • Manage Improvement and Change

Source: [10]

1.1.4. Business process features

Every business process possesses few distinguishing features. According to [125] five most important ones are:

- flow,
- effectiveness,
- efficiency,
- cycle time,
- cost.

Flow should be understood as the methods used for converting input into the output. **Effectiveness** of the process, measures the quality by checking how well the process meets expectations of its end customer. Another characteristic of the process is **efficiency**. It tells how well resources were used to provide an output. Efficiency can be defined as output per unit of input. The fourth characteristic of business process is **cycle time**. It informs how much time is needed for transformation input to output. It means that cycle-time is not only time of work performance, but also additional time taken for such activities as waiting, storing, moving documents etc. The last characteristic of the business process is its **cost**. It is a very important aspect of the process and it means the expenditures incurred during the whole process.

1.1.5. Business process customers

The most important aspect of every business process is its **customer** or **customers**. So, who can be described as a process customer? As stated by [125] **process customer** is a person or company which receives, directly or indirectly output from the process. Process customers can exist inside the organization and in this case they will be called **internal customers**. Customers outside the company are called **external customers**. Harrington distinguishes five types of customers [125]:

- **primary customer** is one who directly obtains the process output,
- **secondary customer** is an organization outside the process, receiving output from the process, but is not directly necessary to support the basic process goal,
- **indirect customer** is a customer inside the company who do not directly obtains the output from the process, but is influenced when it is wrong or late,
- **external customer** is a customer outside of the organization who gets the final product or service,
- **consumer** is very often indirect or external customer.

1.2. Concepts of changes implementation based on process orientation

1.2.1. Historical draft

Change of orientation from tasks to processes is not an idea which has emerged in the '90s. In the previous decade very popular around the world was **Total Quality Management** concept, considered as *"most well-established process movement"* [152]. Let's shortly recall its basic assumptions.

Total Quality Management implemented by Japanese in 1950s, but developed by Americans, treats quality awareness and its improvement in every process as a basic value of the organization. TQM puts stress on permanent betterment of a product as well as preventing errors (*external quality view*) and considers such an approach as more important than traditional post-production control (*internal quality view*). This second philosophy is concentrated on finding defective elements and their removing. The goal of TQM is different - complete errors elimination. In order to support quality system, as proposed by TQM, it is necessary for organizations to have proper documentation (manuals, records, procedures). Monitoring the quality standards also requires presence of internal audit systems and usage of statistical techniques. Important characteristic of Total Quality Management are close relationships between management and employees. It is accompanied by empowerment of the latter ones (e.g. decision making, more responsibility). The most significant postulates referring to TQM, formulated by William Edwards Deming, one of this concept creators, are as follows [173]:

- acceptance on all organizational levels commitment for permanent betterment of the customer satisfaction and utilization of this approach in practice,
- implementation of quality improvement into the company's culture on its every level,
- permanent products and processes improvement as organizational goal,
- providing employees with a required training and necessary equipment,
- stimulating collaboration as well as teamwork inside the company and building trust among the workers,
- stimulating education and self-betterment at each organizational level,
- selecting suppliers basing rather on the quality and trust that on price offered by them.

In the 80's TQM seemed to have been a panacea for companies' drawbacks, but results realized, far less dramatic than expected. The reason of the negative reputation of TQM was focusing on one aspect of organization's functioning, (i.e. quality), while companies also wanted to improve other aspects of their performance like services, costs, innovation [134].

Some assessments of TQM effectiveness are very radical. For example, John A. Byrne in his article published by Business Week named Total Quality Management a theory which is "*as dead as pet rock*". He writes that "*TQM, the approach of eliminating errors that increase costs and reduce customer satisfaction, promised more than it could deliver and spawned mini-bureaucracies charged with putting it into action*" [36]. It seems that those remarks are generally very true, but they mostly do not apply directly to TQM, but rather to quality system based on ISO 9000 standard. Those systems based on mentioned above standard were created as framework facilitating implementation of TQM postulates [209]. Unfortunately everyday practice proves that they are concentrated mainly on documentation checks and their implementation leads to generating many additional papers (procedures, forms, manuals, records) which must be filled out as well as controlled what does not result in creating within an organization any effective quality system, but instead slows its functioning in an obvious way and makes it far less flexible. It should be underlined that criticism expressed in Byrne's article is not a first one. Quality systems based on ISO 9000 were criticized many times for the fact that they are over-bureaucratic (see [173] or [316]). It is also underlined lack of the "*relationship between conformance to quality standards and customer satisfaction, no reference to continuous improvement, and no discussion of business strategy*" [152].

In the 90's the importance of Total Quality Management has radically diminished. Nowadays TQM, being used together with other approaches, is considered rather as a supporting tool, helping in improving some aspects of organization's performance, but not as basic philosophy showing the ways of successful competing in the rapidly changing environment of the 1990s. It's worth mentioning that some elements are identical both in TQM and reengineering. They refer to customer orientation, concentration on processes and involvement in improving organization's performance. Although there are two fundamental differences: type of improvement being proposed (incremental *versus* radical) and approach to the process being the goal of change (improvement of functioning one *versus* replacement of it) [122]. At the end it is worth underlining that particularly valuable for those of organizations, which implemented elements of Total Quality Management prior to reengineering is fact of collecting by them detailed information about their processes and their documenting.

1.2.2. Two philosophies of implementing changes

Facing rapidly increasing competition and concurrently being dissatisfied with the results achieved by means of TQM, organizations were forced to seek for another concepts of increasing their effectiveness, showing the ways of adjusting their organizational structures to the new challenges and providing them with new ap-

proaches of functioning. At this time two philosophies, based on process orientation, has emerged. First one, similar to Japanese *kaizen* approach, assumes betterment of existing business processes, without implementing any radical changes neither in organizational structure nor in ways of company's performance. The risk related to this philosophy application is relatively low, but also benefits being the result of it (as inventory turns or cycle time) are only about 5% to 12% [67].

Second philosophy represents quite different approach towards solving problems of contemporary organizations. It is assumed that conditions in which companies have to function in the 1990s have changed so radically that improvement of existing processes in not sufficient. Because of this it is indicated the necessity of implementing drastic and radical shifts in so far used ways of organizations performance, supported by wide utilization of information technology. The vastness of necessary changes causes that risk of failure increases meaningfully, but this high risk level is compensated by the benefits which can be gained by a company. Additionally, it is pointed that this approach allows for achieving such significant benefits as cost reduction or cutting down the cycle time of 50% to 70% or even more. It is worth mentioning that described above philosophy is close to Japanese approach called *kaikaku* (radical improvement) being applied by companies from this country in situation when there are no further possibilities of using *kaizen* [217]. Comparison of both discussed earlier approaches is given in table 2.

Table 2. *Comparison of two approaches of implementing changes, based on process orientation*

Element	Concepts based on improvement	Concepts based on implementing deep changes
Level of change	Incremental	Radical
Starting point	Existing process	Clean slate
Frequency of change	One-time/continuous	One-time
Time required	Short	Long
Participation	Bottom-Up	Top-Down
Typical scope	Narrow, within functions	Broad, cross-functional
Risk	Moderate	High
Primary enabler	Statistical control	Information technology
Type of change	Cultural	Cultural/structural

Source: [67]

In the next subsection **business process improvement**, the concept representing first of mentioned above philosophies of implementing changes and its basic assumptions will be shortly discussed. The rest part of this chapter will be devoted to **business process reengineering**, which bases on the second approach suggesting the necessity of implementing deep and radical changes in organizations functioning. It seems that nowadays, in situation of rapid shifts taking place in the business environment, accompanied by quick Internet's development and various consequences of it, this philosophy is more important then the first one, because as states T. Davenport "*today firms must seek not fractional, but multiplicative levels of improvement - 10X rather than 10%*" [67].

1.3. Business Process Improvement

1.3.1. Foundations and goals of BPI

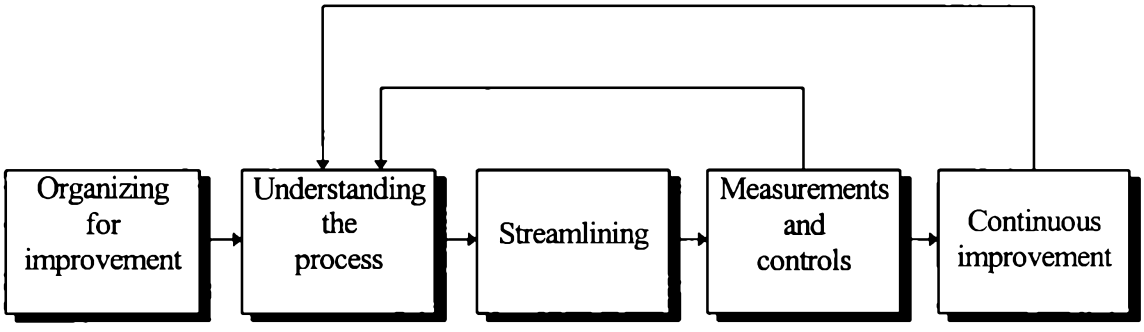
The theory representing philosophy of implementing changes based on the betterment of existing business processes is a concept introduced by Harrington and called **business process improvement**. It was developed on the base of the mentioned earlier Total Quality Management. The most general goal of BPI is improvement of selected business processes, assuming that their improper functioning impacts on organization as a whole as well as on its competitive position on the marketplace. Harrington defines BPI as "*a systematic methodology developed to help an organization make significant advances in the way its business processes operate*" [125]. It is assumed that application of this concept will help organizations in:

- concentrating attention on customers,
- anticipating and controlling changes that take place,
- improving the competing capabilities by means of betterment of companies resources utilization,
- quick implementation important changes in complex activities, providing a company with necessary for this purpose means,
- effective management of internal relationships,
- creating a systematic vision of activities inside a company,
- concentrating attention on processes,
- keeping from occurring errors,
- realizing how inputs are transformed into outputs,
- estimating its costs of poor quality, by providing them with necessary measure,
- envisioning the way errors occur and furnishing with methods of their correction,
- preparing thorough measurement system,
- preparing to face future challenges, by providing them with suitable method [125].

1.3.2. BPI methodology

In order to achieve mentioned above goals, Harrington proposes the methodology comprising five phases, in which each stage has its clearly defined objectives (see Fig. 1).

Fig. 1: *The phases of implementing changes in BPI concept*



Source: [125]

Let's shortly review all phases of implementing changes:

- **Organizing for improvement**
  During this phase people who will implement changes are selected and necessary groups are organized. Also required training is conducted, including executives. The model of betterment is prepared and processes for improvement are selected. During this phase company's strategy as well as customers requirements are examined. Important part of the first phase is presenting all employees goals to be achieved in clear and convincing way.

- **Understanding the process**
  During this phase process goals, scope and its boundaries are defined. Also customers expectations are specified and necessary data are gathered. On this base process flow charts are created. Existing documentation of the process is updated and the training of selected teams is executed.

- **Streamlining**
  It is a phase during changes are implemented. It comprises many actions referring to the process being the aim of the betterment as: defining elements which will be improved, standardization, automation, upgrading equipment, simplification, cutting its time, removing activities adding no value, removing bureaucracy, documenting the flow of improved process. Also employees are trained for functioning in the new process.

- **Measurements and controls**
  During this phase the system necessary for controlling the process in order for its permanent betterment is introduced. Measurements and targets, required for process quality control purpose are established. Also feedback system and poor-quality cost system are created. Process is periodically examined as well.

- **Continuous improvement**
  During this last phase, possible problems occurring inside the process are identified and eliminated. Assessment of the process quality takes place, along with the analysis of its impact on organization and its customers. In order to compare the process quality, benchmarking is performed. When it's necessary, more advanced employees training is executed.

1.3.3. People in BPI concept

Implementation of changes in business processes, requires establishing properly selected and organized groups of workers, along with defining scope of their responsibility as well as authority. In Harrington's concept, few such groups are proposed. **Executive Improvement Team** (*EIT*) is situated on the top of the organizational hierarchy. It consists of top management and its chairman is usually head of the business unit. The role of EIT is identifying processes which need betterment, communicating the need of changes to all employees as well as creating suitable organizational conditions necessary for improvement. Executive Improvement Team names a person, directly responsible for co-ordination of all change implementation i.e. **BPI champion** (*czar*), along with people accountable for each process betterment i.e. **process owners**. It also finally approves the make-up of **process improvement teams** (*PIT*) and establishes the preliminary goals for them. Important task of EIT is resolving possible conflicts, measurement of implemented betterment as well as providing with motivation system. It also decides about changing the level of process qualification. The man who is personally responsible for advancements in selected processes improvement is BPI champion. He/she prepares the scope of responsibility for particular process owners and members of process improvement teams. BPI champion monitors also the progress in betterment of the process and determines the moment of qualifying it for the higher level. He/she also prepares the necessary procedures defining the way improvements will be implemented in organization, consulting it with EIT. BPI champion reports directly to the head of business process unit and he/she is designated for this position for about 2 years.

Process owner is responsible for improvement of particular process. He/she creates process improvement team, establishes goals and supports members of PIT in achieving them. During changes implementation process owner regularly meets with members of process improvement team, helps them in solving issues which requires intervention or consultation and monitors the progress of changes. In case when implemented changes are widespread and complicated, process owner can establish a person assisting him/her at work i.e. **process coordinator.** The changes in the process are implemented by members of process improvement team. This team is composed of representatives of departments involved in the particular process. They take part in every activities of PIT, implementing changes relating to their departments scope of responsibility. The important role is also training of their department members as well as introducing them into the changes that take place. It is estimated that members of PIT have to devote about 4 hours weekly for activities relating to process betterment, although at the beginning it can be much more time consuming.

A member of process improvement team can also be a person from outside (e.g. consultant), who being not directly involved in the process can provide the rest of the team with the fresh view, stimulating implementation of changes. Such person is called **process improvement facilitator** [125].

1.4. Business Process Reengineering

1.4.1. Brief history of BPR

Two people have played the most important role in introducing the concept of implementing changes, based on the philosophy assuming radical shifts in organization's performance. First one is Thomas H. Davenport, while the second, more famous and popular is Michael Hammer. This latter one is considered as guru of contemporary management and one of the most influential persons in the U.S. (see [284]). At the beginning of the 1990s, they both published articles and books which became the classical positions in this field, quoted by most of authors writing about implementing radical changes in companies functioning. Both of them, Davenport and Hammer, represent different approaches towards this issue and other elements are emphasized in their concepts. Also terminology they use is different. In order to describe the radical changes implemented in business processes, Hammer uses the term **business process reengineering** (*BPR*). Davenport for the same purpose uses another terms: **business process redesign** or **process innovation**. In this dissertation we will use the term business process reengineering (or simply reengineering), because of its more commonness.

Reengineering's history began in 1990 with publishing of two most important articles for this concept articles. In this year, summer issue of Sloan Management Review published article "*The New Industrial Engineering: Information Technology and Business Process Redesign*", written by Davenport together with Short. Nearly at the same time, in the July-August issue of Harvard Business Review appeared the famous Hammer's paper "*Reengineering Work: Don't Automate, Obliterate*". Three years later, in 1993, two the most meaningful for this concept books were issued. As the first one, his "*Process Innovation*" published Davenport and some time later Hammer together with Champy released their classical today position "*Reengineering the Corporation*". First of mentioned books is often called a "textbook", while the latter one is described as reengineering's "bible" [68]. The most important facts about mentioned here papers and books are gathered in table 3.

Table 3. *Review of the most important books and papers of reengineering's early stage*

Author	Title	Date of release and publisher	Term used by author(s) for describing implemented changes
Thomas H. Davenport, James E. Short	"*The New Industrial Engineering: Information Technology and Business Process Redesign*"	Sloan Management Review Summer 1990 pages 11-27	Business Process Redesign
Michael Hammer	"*Reengineering Work: Don't Automate, Obliterate*"	Harvard Business Review July-August 1990 pages 105-112	Reengineering
Thomas Davenport	"*Process Innovation: Reengineering Work through Information Technology*"	Harvard Business School Press, Boston 1993	Process Innovation
Michael Hammer, James Champy	"*Reengineering the Corporation*"	Nicholas Brealey Publishing 1993	Reengineering

Source: Own Source

In the next years many new books and articles devoted to reengineering were published, including two written by Hammer. Authors of them utilize there their experiences gathered during the implementation of this concept in various types of organizations. Many important conclusions have been drawn and areas requiring more attention have been indicated there. Complex reviews of methodologies used by various companies and consultants have been issued as well. There are also many papers criticizing reengineering, its effectiveness and other elements of this concept. Those issues will be discussed in the following part of this dissertation.

It is worth mentioning that reengineering efforts predominantly took place in American private sector, but with a passage of time also U.S. government has initiated many BPR projects aimed at federal agencies [198]. The significant potential of BPR in redesigning just a public sector is stressed by some authors (see [219]).

There is one important remark which should be mentioned at the end of this "historical" review. The concept of implementation radical changes in business processes, regardless the term which is used, is not an idea of any authors quoted above. They only gathered, systematized and named the concepts which some of American organizations started to implement at the end of 1980s[3] .

1.4.2. Popularity of BPR and the main reasons of undertaking reengineering efforts

As it was mentioned earlier, reengineering is the concept which appeared in U.S. and in this country its popularity is the greatest, both in smaller as well as in the biggest, *Fortune 500* companies (see [197]). According to the results of the study conducted by Ernst & Young LLP together with "CFO Magazine" in 1995, 84% of 80 major American organizations undertaken reengineering program and 88% planned new such initiatives [42]. Also money spent by American companies on business reengineering is impressive. It was estimated that by the end of 1996 it would be $37 billion dollars and the expected average annual growth rate should reach 19% in next three years. In 1997 the business process and information systems reengineering was expected to achieve the value of $52 billion dollars [134]. Also in UK reengineering is a very popular management concept. According to survey conducted in 1993, 65% of respondents undertaken the reengineering effort or planned to do it. A year later, 77% of respondents of another survey declared that they are involved in reengineering program and the next 13% intended to do so [107].

It is worth to be underlined, that currently business process reengineering became so popular concept that it is undertaken almost on all continents, in so different countries as: Philippines, Australia, Canada, Republic of South Africa, Zimbabwe, Mexico, Croatia, Italy, Brazil, Indonesia, Sweden, Latvia or Spain [234].

As motivations of undertaking the reengineering program are considered, in 1995 the most important goals for American organizations were cost reduction (29%) and improvement of customer service (31%) [42]. According to the survey conducted by Delloite & Touche Consulting Group in 1996, the most important reengineering aims were [75]:

- improvement of service - 44 %,
- improvement of quality - 42 %,
- cost reduction - 28 %,
- enhancing the revenue - 18 %.

[3] This fact is underlined by Davenport in [67].

Results of another survey conducted at the end of 1996 and beginning of 1997 indicate that top three reasons of redesigning business processes are [233]:

- cost reduction,
- competitive pressures,
- poor customer satisfaction.

Few years ago the most important functional areas of reengineering were [134]:

- finance and accounting - 28 %,
- customer service - 16 %,
- sales and marketing - 12 %,
- inventory and distribution - 9%.

In 1995, American managers expected that the major goals of reengineering in the future will be [42]:

- sales and marketing - 58 %,
- information system development - 56 %,
- supply chain management - 39 %,
- financial functions - 9 %.

1.4.3. Definitions related to BPR

As we know, business process reengineering is a concept which basic goal is transformation of organizations performance, together with their structures by implementation of deep changes in business processes. Now it's time for defining reengineering in a formal way. But, before this definition will be given, one more term, considered by Hammer and Champy as a base of reengineering, must be explained first. This term is **discontinuous thinking**, which should be understood as "*identifying and abandoning the outdated rules and fundamental assumptions that underlie current business operations*" [43]. So, according to the definition which is classical today, **reengineering** is " *the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed*" [43]. Hammer and Champy underline the importance of four words contained in the given above definition:

- fundamental,
- radical,
- dramatic,
- processes.

The word **fundamental** means, according to them, that reengineering is a concept which stresses the importance of having no any preliminary assumptions in relation to the process. So, the most important for people implementing changes, must be how the performance of particular process should look like, while absolutely insignificant should be its current functioning. The second crucial word in reengineering definition, is **radical**. It means that when it's necessary, old organizational structures as well as so far used procedures should be abandoned during changes implementation and in this case completely new one must be prepared. The next word, **dramatic** according to authors, should emphasize in definition that reengineering does not deal with any incremental improvements (as e.g. BPI), but its goal is achieving the decisive increase of most important measures of performance. The last key word from the definition, **process**, underlines that reengineering is process, not task orientated [43].

1.4.4. Characteristics of reengineered business processes

The results of reengineering implementation are significant changes in business processes' performance. Because of this both managers and employees face many new elements relating to organization of the work, ways of its execution or scope of their responsibility.

Hammer and Champy indicate few important features, which are characteristic for most of reengineered processes [43]:

- **Several jobs are combined into one**
  As a result of reengineering program narrow, focused on task specialization of employees disappears. New processes require, in every case when it is possible, combining of tasks in order to make one person to be responsible for the whole process. Such a person is called **a case worker**. It sometimes happens that because of process lengthiness it is not feasible for one man to execute the whole job. In this case it is expedient to create a group of people called **a case team** responsible for the whole job.

- **Workers make decisions**
  Reengineering of processes leads in many cases to compression of organizational structure, not only horizontally, but also vertically. It results in creating flatter organizational pyramid and eliminating some of its levels, particularly middle managers. In practice it means more responsibility for case workers and necessity of making by them required decisions. Because of this, decision making becomes a part of their everyday work. It is very important element of processes after redesign.

- **The steps in the process are performed in a natural order**
  In most companies work is performed in linear order, what means that before beginning one task the previous must be completed. Since in many cases tasks can be done simultaneously, reengineering introduces *delinearizing* in every

situation where it is possible. Working in such a way reduces significantly the amount of time necessary for completing the whole process. Such a philosophy is very similar to the method of work utilized in *concurrent engineering*, called by Japanese *parallel approach* [67], where designers work on the project simultaneously. It is even not necessary for them to work together in one place. So, very often it happens that they are scattered, working on their project part in different cities or even countries [152], [215].

- **Process has multiple versions**
  In order to meet the requirements of all kind of customers it is necessary for the organization to have different versions of the processes. Each of them should be tuned to the specific expectations of various markets or customers. It is also very important to standardize every version of the process by creating adequate procedures. Such procedures should explain managers and employees executing specific tasks, how the process flows and how to perform activities. Standardization guarantees that people performing work will use the best ways to accomplish required goals [125]. It should be underlined here that standardization of processes is not only characteristic for reengineering. It's precursor was mentioned earlier Frederic Winslow Taylor who argued about the standardization necessity in [268] and it is also an important element of the Total Quality Management.

- **Work is performed where it makes the most sense**
  The consequence of reengineering is such planning of business processes' course and embedding them within the organizations structure in such a manner which guarantees its most effective flow and protects it from breaking into small tasks performed in the different functional departments. In this way, burdensome and time consuming necessity of integrating related parts of the process is removed. Advantages of such approach are mainly more efficient process flow and significant cost reduction.

- **Checks and controls are reduced**
  In contemporary organizations controls, which are typical non-value adding activities, represent important portion of the work being done there. Many people devote their time only and exclusively for controlling work performed by others. It's obvious that it generates significant costs. In reengineered processes controls are maximally reduced, so they only exist in these points of process where it really makes sense.

- **Reconciliation is minimized**
  Inconsistent or incorrect data received from outside or generated inside the organization are in many companies very serious problem. Reconciliation and matching them is the next non-value adding activity, consuming a lot of time and money. In redesigned processes correcting or reconciliation of data is significantly reduced by cutting the number of processes' external points of contact.

- **A case manager provides a single point of contact**
  Important role in reengineered processes play case managers. They are people who have access to the all kind of information about the process and its course. Case managers act as if they were people responsible for the whole process, from its beginning to the end. In fact they take the role of intermediaries between the process and its customers.

- **Hybrid centralized/decentralized operations are prevalent**
  Common usage of information technology in business processes enhances opportunities of organizations for adjusting its performance to the requirements of particular markets or customers. Possible becomes combining elements of centralized and decentralized functioning, which can be a source of many advantages.

1.4.5. The role of information technology in BPR

Information technology, understood as "*the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information by a microelectronics based combination of computing and telecommunications*" [53], is recognized by most of authors dealing with reengineering as a one of the most important factors deciding about the success of changes introduced in organization. Hammer and Champy underline its role in business process reengineering calling it **essential enabler** [43]. Other authors claim that IT usage is not necessarily required for processes' reengineering, although they consider it is an significant factor [99]. It is particularly necessary to emphasize the double role of information technology in BPR. On the one hand IT enables implementation of reengineering, while on the other hand it supports the flow of the reengineered processes [71].

Table 4 presents elements of IT, the most important from reengineering point of view, according to the survey conducted by Deloitte &Touch Consulting Group in 1996.

Table 4. *Importance of IT elements in reengineering projects*

Element of information technology	Percentage of answers
Communication and networking	80%
Packaged application software	58%
Client/ server architecture	54%
Electronic data interchange (EDI)	37%
Laptops	29%
Imaging	21%
Executive information systems (EIS)	18%
Hand-held computers	12%
Multimedia	9%
Expert systems	7%

Source: [75]

Presented above results of the study, clearly indicate that the most important for surveyors are communication technologies and networking. There is no doubt that it is connected with the Internet and an Intranet utilization for transformation of business processes. It's quite obvious that role of those elements will be increasing in the next years. The reason of growing from year to year IT utilization in changes which take place in organizations is undoubtedly the expansion of their efficiency accompanied by diminishing costs of their usage. In the years 1972-1992 computer power has increased 350 times, while costs of its usage has been reduced 60 times [100]. Generally, contemporary organizations perceive the necessity of IT usage in their performance. Already at the end of 1980s, 40% of capital spent by American companies, i.e. $97 billion, was invested in information technology systems development [71]. This tendency seems to continue not only in U.S. It is estimated that currently in organizations around the world, IT systems expenditures represent more that 45% of the whole business equipment investments [137]. Unfortunately, in most cases money are spent only for automation and speeding up the business processes flow in their current form. It relates to the very common among the managers around the world conviction that application of information technology to the existing processes will

enormously increase their efficiency and effectiveness. In fact, the advantages of such a IT utilization, both for companies and their customers, are rather slight. Usage of information technology within the frames of existing processes accelerates them, but in a small range, much smaller than expected. It also happens that not thoroughly considered computerization of the processes in their current form increases only mass which existed before (e.g. because of lack of required employees training). In fact the true and powerful role of IT lies in breaking and overcoming obsolete, existing sometimes for a long time rules and establishing completely new ways of work performance. So, information technology usage should lead not only to the automation of existing processes (what is valuable as well), but mainly to organizing them in a quite new way [119]. The most significant capabilities of information technology as well as its influence on organization's performance and implementation of changes there, can be described as below [71]:

- making easier gathering information necessary for the process functioning,
- making analysis of collected data and information more efficient,
- allowing for transformation of unstructured process into automated transaction,
- allowing for introducing changes in the sequence of activities within the process as well as enabling concurrent course of some process elements,
- enabling easier access to knowledge sources and facilitating their transfer,
- providing process with detailed information,
- enabling elimination from the process redundant intermediaries,
- allowing for easy monitoring of the whole process as well as its parts,
- allowing for replacing of human labor in the process or its significant reduction.

At the end, it's worth mentioning that despite of the importance of information technology in reengineering, in many cases the role of IT specialists in BPR projects is marginal and they have no real influence on making key decisions referring to redesigning of processes. It happens despite of generally strong involvement of information technology in such projects [21].

1.4.6. Other BPR enablers

Although information technology is a very important factor, enabling implementation of deep changes in organization's performance, it is not the only one. There are other elements stimulating and supporting reengineering efforts. The most important ones are [99]:

- **Organizational structure enablers**
  Establishing new elements of organization structure is a factor significantly stimulating implementation of changes. The crucial role in reengineering projects play groups of managers from various organizational departments, working together on the particular process. Such groups are called **cross-functional teams**. Also mentioned earlier **case managers** and **process generalists**, (employees executing work normally done by several specialists in typical con-

temporary organization) are considered as structural enablers of reengineering efforts.

- **Management systems enablers**
  Described above changes in organizational structures requires also shifts in management systems. It takes place, because workers are not only responsible for small part of the process as it was before. In new conditions they must take into consideration the whole process functioning. They are also responsible for making decisions, which previously were made by middle managers. In result it leads to compression of organizational hierarchy.

- **Human resources enablers**
  The element, which can significantly stimulate reengineering efforts or decide about its failure are people. Implementation of deep changes, as in BPR case, leads to many challenges which employees have to face (skills, IT usage, decision making, abandoning of narrow specialization etc.). Because of this it is extremely important to create such conditions (training, compensation system), which will result in positive employees attitude to the reengineering project. In order to achieve it there are necessary changes in human resources management.

1.4.7. Criteria for proper selecting processes to be reengineered

Crucial issue, which must be solved before the beginning of implementation changes is selecting proper process or processes, which will be reengineered. It is necessary to underline here that the real object of reengineering are processes, not the whole organization. On the other hand, it is essential to remember that betterment of the individual processes can not be the goal of BPR. Changes must be implemented in those processes which are really critical for the functioning of the whole organization, in order to improve its performance and increase the satisfaction of its customers. Because of this, it is very important for the person responsible for the reengineering efforts to have a global view of all changes being done [116]. The redesign of processes which are not important for the whole organization functioning can lead to dissipation of efforts, with no results at all or with unsatisfactory results. The issue is clear in case when there are problems with functioning of one, particular process. In case when more then one process requires redesigning, it is necessary to apply some criteria in order to select the proper one. Hammer and Champy suggest three basic criteria which should be used to choose process or processes and also to determine the order in which they should be tackled [43]:

a) **dysfunction** - using this criteria, those processes should be chosen, which performance is the worst,

b) **importance** - using this criteria, it is necessary to select those processes which have the biggest impact on the functioning of the whole organization and also on its customers,

c) **feasibility** - according to this criteria, it is necessary to choose those processes which are most susceptible to successful redesign.

Davenport suggests four criteria [67]:

- selection of the process based on its importance for achieving company's strategy,
- selection based on process health assessment,
- selection of the process based on manageability of project scope,
- selection based on process qualification.

First three of mentioned above criteria are the same as those proposed by Hammer and Champy. The new one is fourth criteria. "Process qualification" means assessment of the climate towards the implementation of changes in the particular process and involvement of the sponsor.

1.4.8. Analysis of business processes before reengineering

The next step which is necessary to be undertaken during processes' redesign is understanding the details of their functioning. This issue is extremely crucial, because without deep and meticulous awareness of the process performance it is impossible to complete any reengineering project successfully. The simplest way for the process comprehension is its observation or better participation in it for some period of time. This type of activity, Harrington calls **process walk through** [125]. It gives possibility of personal assurance about the workflow within the process and the problems occurring there.

Another commonly used method is preparing flowcharts of the process. Originally process flowcharting was proposed by Harrington for the mentioned earlier business process improvement, but Davenport indicates for its usefulness in reengineering projects (see [67], p.146). Harrington defines flowcharting as a "*method of graphically describing an existing process or a proposed new process by using simple symbols, lines, and words to display pictorially the activities and sequence in the process*". He considers it as an "*invaluable tool for understanding the inner workings of, and relationships between, business processes*" [125]. There are many types of flowcharts, but for proper understanding the course of business processes four of them are most often used:

- **Block diagram** - it is the simplest and most commonly used type of flowchart. It is created basing on the simplest symbols i.e. rectangles which represent activities and lines with arrows showing the direction of information flow. The block diagram begins and ends with elongated circles. Because of its simplicity this type of flowchart gives a possibility of a quick overview of the process.

- **ANSI standard flowchart** - this type of diagram provides more detailed information about each task in the process then block diagram. The activity represented by the rectangle in block diagram is detailed by means of ANSI symbols.

- **Functional flowchart** - creating this kind of flowchart requires usage of blocks or standard ANSI symbols. It allows for showing the process flow through functional departments of the organization. Functional flowchart gives also possibility of presenting processing and cycle time.

- **Geographical flowchart** - using the geographical layout of process elements (e.g. functional departments in the company's building), it allows for showing the physical flow of activities. It can be useful for minimizing a waste of time which occur between them [125].

1.4.9. Organizing people for BPR implementation

Extremely important issue related to reengineering implementation is choosing from the organization, group of people who will be responsible for introducing the whole changes as well as its particular parts. Proper selection of people strongly involved in redesign process and able for skillful implementation of changes is a key issue. Since every organization is very specific, reengineering efforts must be undertaken individually. The organizational structure of workers responsible for implementation changes must be created adequately to the local conditions and requirements.

Hammer and Champy propose in their concept such organizational structure of people necessary for conducting reengineering, which should be treated as a general outline of groups or individuals necessary in BPR projects, together with scopes of their responsibilities. Proposal of Hammer and Champy is not universal and suitable to be applied in all types of organization, although it gives certain indications referring to this issue. They suggest that the following participants should be involved in reengineering:

- **Leader** - a person, mainly a senior executive, who has a clear vision of the kind of company which should be created in the future. It must be an individual who has not only an authority, but also convictions and enthusiasm which should be obvious for the company staff. Apart from having vision of changes and motivating employees during implementation, leader's role is also establishing such conditions, which are required for successful reengineering. It is argued that there are available three tools of reengineering leadership. Hammer and Stanton call them *three Ss* and they comprise: *signals* (explicit communications), *symbols* (personal behavior) and *systems* (measurements and rewards) [122].

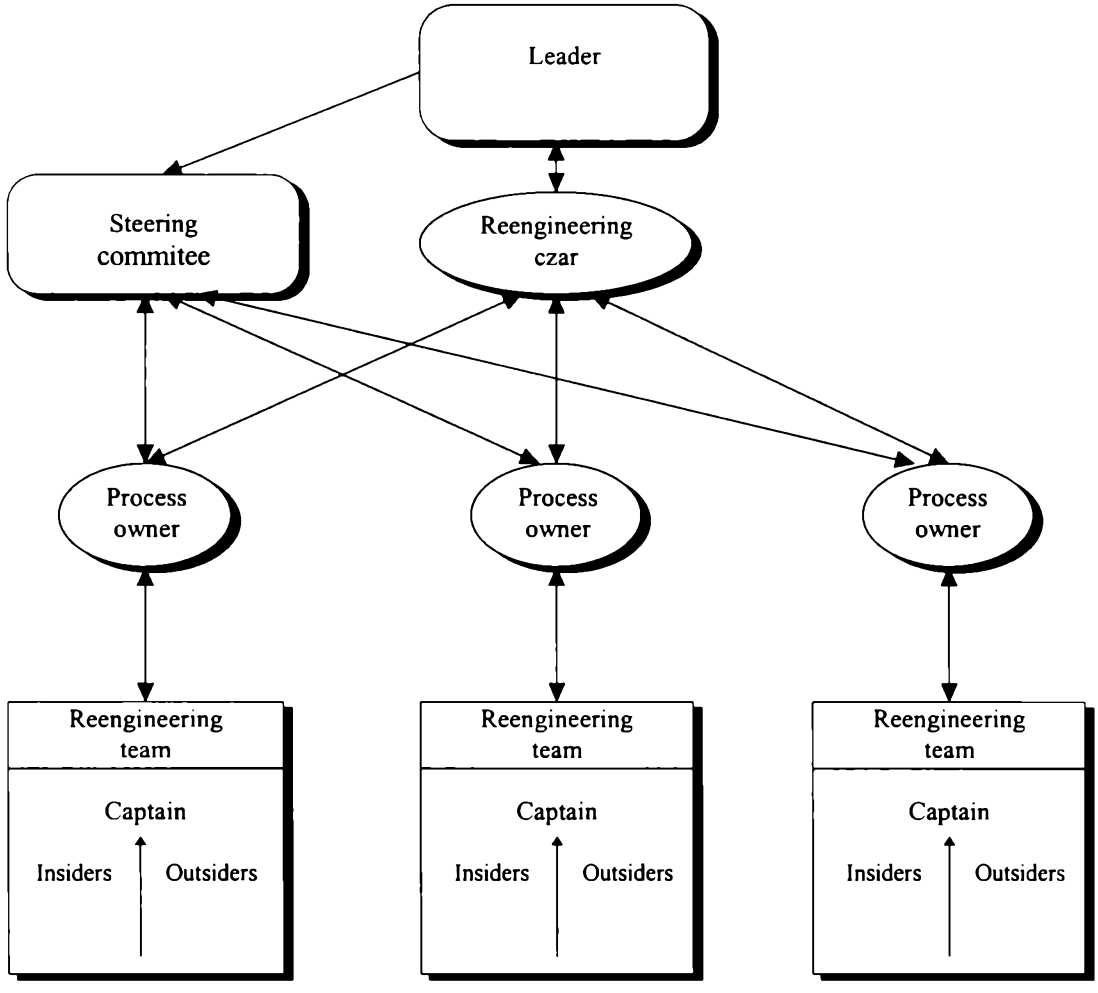
- **Process owner** - a senior level manager who is responsible for redesigning a particular process or processes. His or her role lies in translating a vision created by a leader into reality. Process owner's job is not to perform reengineering, but take care of changes introduced into the process. He or she must create a *reengineering team* and obtain resources necessary to implement changes. Process owner's role is also motivating and advising when it is necessary;

- **Reengineering team** - a group of people between five and ten in number, who perform the real reengineering work implementing changes in the process. Hammer and Stanton argue that candidate for a team member should have certain set of characteristics comprising: orientation on processes, holistic perspective, creativity, restlessness, enthusiasm and optimism, persistence, tact, teamwork ability, communication skills [122]. It is assumed that every reengineering team should consist of two types of members: *insiders* and *outsiders*. Insiders are people who currently work inside the process which is the goal of reengineering. They perform various functions in the process and because of this fact they know it very well. Outsiders are people who don't function within the process, so they present a higher level of objectivity. Because they are not familiar with the details of the process they can ask questions looking as a very naive to the insiders, but introducing very creative disturbance. Outsiders may come from the same organization or from the outside one, as well. According to Hammer and Champy, in each reengineering team the correct ratio insiders to outsiders should be two, or three to one. It is also considered as a very helpful for the team if it has a captain. He or she should not be an official head, but rather a person nominated by team members. Team captain's role lies in enabling people inside the team to do their work, mediating conflicts etc.

- **Steering committee** -a group consisting of senior managers, including process owners, responsible for preparing a strategy for the whole reengineering project. The head of steering committee is usually the leader. Hammer and Champy consider steering committee as an optional element.

- **Reengineering czar** - a person who coordinates the whole reengineering efforts inside the organization, and who supports each *process owner* and *reengineering team*. He or she also serves as an adviser and a person solving problems or conflicts. Reengineering czar is responsible for the management of the whole reengineering project and reports directly to the leader.

Fig. 2: *People and teams involved in reengineering project (Hammer and Champy vision)*



Source: Own Source

As a supplement to this example model presented above, it is worth adding that currently in most cases the size of teams redesigning processes ranges between 4 and 9, rarely exceeding 12 [234].

1.4.10. Measuring changes level

The fundamental goal of reengineering is deep redesign, but important issue is how "good" should the process or processes be afterwards. Because of this fact, important element of the reengineering efforts is ability to determine which measures of the process performance are unsatisfactory (costs, cycle time, effectiveness etc.) and then measuring them. In the next step, the optimal value must be defined and when the redesign is completed, again measurement should be conducted in order to evaluate achieved results. It turns out that such activities causes many organizations

remarkable troubles. The results of the recent study have showed that two-third of surveyed have no idea how to measure the effectiveness of the process after the reengineering [234].

One of the most common methods used for this purpose is comparison of the process being redesigned (its flow, measures of performances etc.) to the similar process inside the organization or in another company. Such an approach is called **benchmarking** and it was popularized in the early 1980s by Xerox (see [152]). It allows to determine how the process being the aim of reengineering, differs from other ones and what should the basic goal for people implementing changes. The formal definition given by Harrington says that *"act of systematically defining the best systems, processes, procedures and practices is called benchmarking* " [125]. Another definition from Milborrow says that benchmarking is " *the continuous process of measuring products, services and practices against the toughest competitors or those companies recognized as industry leaders"*[190]. So, according to the definition given above benchmarked can be products, services, practices, but also performance measures as: profit margin, cycle time, return on investment, sales per employee etc. It can be conducted in all areas of organization's activity. Nowadays the most often benchmarked areas of companies' activities are [39]:

- Human resources 60 %
- Customer service 72%
- Manufacturing 68%
- Information services 35%

Österle distinguishes three kind of benchmarking [215]:

- **Company-internal benchmarking**
  The goal of such a benchmarking is looking for the best solutions and practices among the comparable organizational units (*best of company)*;

- **Industry-internal benchmarking**
  In this kind of benchmarking comparison is performed between the certain process and another, the best one within the whole industry (*best of industry)*;

- **Inter-industry benchmarking**
  In this sort of benchmarking process from the certain industry is compared to the best similar process among other industries (*best of the world).*

Evans identifies five types of benchmarking [92]:

- **Internal Benchmarking**
  The goal of this kind of benchmarking is comparison of similar internal operations within the company;

- **Competitive Benchmarking**
  The aim of it is comparing company's products, services or work processes to the same issues of the direct competitor in the market;

- **Industry or Functional Benchmarking**
  This type of benchmarking is conducted against the industry leader who have the same products or services, but it is not a direct competitor;

- **Process or Generic Benchmarking**
  The goal of it is to benchmark a certain process against another best one, irrespective of wherever it can be found;

- **Collaborative Benchmarking**
  This kind of benchmarking exists when group of companies lead benchmarking project together, which allows comparisons among them. The results are exchanged only among the participants and are not shared with outsiders.

Most often the benchmarking process consists of five stages [93]:

- **Planning the Benchmarking Project**
  This stage consists of four steps. At the beginning of the planning phase it is necessary to choose the proper process for benchmarking. In the next step it is essential to identify the strategic goals of the process, which is supposed to be benchmarked. When this step is completed the next important issue is identifying the process products and customers, along with their expectations towards products or services. The last thing which is essential to be done at this stage is choosing performance indicators of the critical success factors, measuring the most important aspects of the process functioning.

- **Forming the Benchmarking Team**
  Second stage comprises two steps: selection the team members and their training. Establishing the benchmarking team starts with selecting proper team members. Two ways of choosing them are possible. First way is volunteer one. Simply people in organization interested in such a work express their will of joining the team. The second way is by direct nomination the team members by management. Team members should represent different skills and perspectives. In most cases it will be essential to train them to develop some necessary skills. According to The International Benchmarking Clearinghouse, the most important ones are as follows - in order of importance [91]:

  - process analysis,
  - communications,
  - team building,
  - interpersonal relations,

- problem solving,
- research,
- conducting meetings,
- writing,
- negotiating.

It is argued that to conduct benchmarking properly three types of teams are required [91], [93]:

a) The Lead Team (The Guidance Team)

This team behaves as mentioned earlier a steering committee. It defines the scope of work on a single business process and makes decisions referring to people selection for the *Preparation Team* as well as for the *Visit Team*. It should also manage the benchmarking process in order to achieve its targets and integrate it with improvements being implemented. The owner of the process being benchmarked and some senior managers should be the members of this team.

b) The Preparation Team (The Main Team)

This team works on the single business process within the range described by the *Lead Team*. It conducts the detailed analysis and preparation work, finds benchmarking partners, takes part in the *Visit Team* and finally analysis collected data as well as prepares improvements.

c) The Visit Team

The most important goal of this team is to lead benchmarking visits and deliver collected data to the *Preparation Team* for the further processing. In fact the *Visit Team* behaves as intermediary between the *Preparation Team* and benchmarking partner

All kind of teams shouldn't be too big. In most cases three people are enough. It is important to underline that the same people can be involved in all these kind of teams.

- **Collecting the necessary data**

This stage can be divided into two steps. Gathering data essential for benchmarking should begin with thorough self analysis and understanding of own processes, products or services which are the targets of benchmarking. It is particularly important because without complete understanding them it is very difficult or almost impossible to notice these elements which work badly and should be improved (this issue was discussed in 1.4.8.) The next step in the data collecting stage is identifying benchmarking partner or partners[4]. A benchmarking partner can be described as

[4] Recently it is also possible to conduct benchmarking without having benchmarking partner. *The Benchmarking Exchange* allows interested companies to perform self assessment via the Internet [275].

any person or company delivering information for benchmarking process [93]. When benchmarking partner is identified the next step is gathering required data. There are many sources of information as [215]:

- data exchange between companies,
- visits to another companies (site visits),
- specialist journals,
- company publications (e.g. annual rapport),
- questionnaires,
- data from consulting companies,
- trade associations.

Visits to the company chosen as a benchmarking partner are particularly important, but not always possible. Site visits give opportunity for much deeper understanding of processes being benchmarked than for example studying only company's publications. The problem is that not all companies are interested in revealing all details about their processes (e.g. toughest competitors). Also some companies are so often the aim of benchmarking visits that they charge fee for access to information [93].

- **Analyzing the data for performance gaps**
  Gathered information is used to recognize differences between own business process and process of benchmarking partner as well as for identifying the causes. Analyzing them it is necessary to pay attention to distinctions existing in the business environment, products features, management philosophies, manufacturing processes or economies of scale.

- **Taking action and recycle the process**
  Knowing everything about the existing gaps between own process and best practice, the last step lies in developing suitable strategies and plans leading to improving these elements which are faulty or not good enough. It's worth underlining that benchmarking is not a one-fold activity, but rather continuous process (as it was indicated in definitions), because best practices changes permanently thus it should be performed regularly. Taking in consideration turbulence of the current business environment there is no certainty that the process which is the best at that moment, will be the best practice also in a year. Because of this fact benchmarking should consist an integral part of companies' business strategy and in many case it happens [93]. Already in 1992, 90% of companies surveyed by American Productivity and Quality Center recognized it as element extremely important for the organizations' success [210]. Also the biggest companies in UK appreciate the importance of benchmarking. According to a study conducted by Cooper and Lybrand among firms from the "Times Top 1,000", 67% of the surveyed organizations used benchmarking and 82% of them consider such projects as successful [39].

One more aspect related to measuring changes requires underlining. Very important issue is ability of organizations to measure the costs of reengineering programs

and its benefits i.e. better quality or increased customers' satisfaction. According to the common opinion, there are difficulties with finding reliable method or methods, which could be used for this purpose. In most cases the conventional measures of performance as return on investment are used, although it is indicated the urgent need of developing methods of measurement, prepared especially for this purpose [42].

1.4.11. Implementation of BPR in organization

1.4.11.1. Review of the most commonly used methodologies

Experiences gathered during the implementation of BPR programs in various organizations around the world, lead to a conclusion that there is no one universal methodology of redesigning business processes. Each company which undertakes reengineering effort, functions in a certain business environment and has own distinguishing characteristics, so implementation of changes requires application of individualized methodology. From the beginning of the 1990s there have been developed numerous methodologies taking into consideration many aspects. For the comparison purpose, we will review some of them.

Let's start with methodologies of reengineering's "classics" - Davenport and Hammer. Davenport has proposed two methodologies. First one in 1990 together with Short and then individually in his book "Process Innovation". The earlier methodology comprises five phases (see table 5).

Table 5. *Methodology of Davenport and Short (1990)*

Phases of Process Redesign
1. Develop Business Vision and Process Objectives
2. Identify Processes to Be Redesigned
3. Understand and Measure Existing Processes
4. Identify IT Levers
5. Design and Build a Prototype of the Process

Source: [71]

The first phase begins with developing clear vision of the processes functioning, together with their most important goals. It can be: cost reduction, better quality, time reduction etc. During the next phase, processes to be reengineered should be identi-

fied, basing on such criteria as importance for company's performance or low effectiveness. The third phase is concentrated on analysis and measurement of the processes, which have been selected for redesign, in order to detect the reasons of problems. During the following phase elements of information technology which can support and improve the process flow are selected. The final, fifth phase relates to designing the new version of the process and next creating its prototype [71].

Methodology developed by Davenport three years later, in spite of identical number of phases, looks a little different (see table 6).

Table 6. *Davenport's methodology (1993)*

Phases of Process Innovation
1. Identifying Processes for Innovation
2. Identifying Change Levers
3. Developing Process Visions
4. Understanding Existing Processes
5. Designing and Prototyping the New Process

Source: [67]

As methodology of Hammer and Champy is considered, there are some problems with it. While Davenport, both together with Short and individually, has clearly presented the phases of changes implementation (e.g. by means of table or drawing), in case of reengineering's "bible" such a methodology is nowhere presented as a whole. It is rather scattered around the book and it can be presented as a six phases approach (see table 7).

Table 7. *Methodology of Hammer and Champy (1993)*

Phases of Reengineering
1. Initiation of reengineering project by top management
2. Identification of existing processes and their boundaries
3. Selection of business processes to be reengineered
4. Understanding of selected business processes
5. Redesigning of selected business processes
6. Implementation of redesigned business processes

Source: [43]

Unlike "Reengineering the Corporation" written two years later, together with Stanton, "The Reengineering Revolution" contains clearly presented set of four steps which should be followed during the reengineering project (see table 8).

Table 8. *BPR methodology by Hammer and Stanton (1995)*

Phases of Reengineering Project
1. Understanding the old process and customer requirements
2. Inventing a new process design
3. Constructing the new process
4. Selling the new way of working and living to the organization

Source: [122]

As a comparison to presented above methodologies developed by people who are rather reengineering's theoretician, let's take a look at two other ones being used in practice by Texas Instruments and Wang BPM 2000. Both of them are shown in table 9.

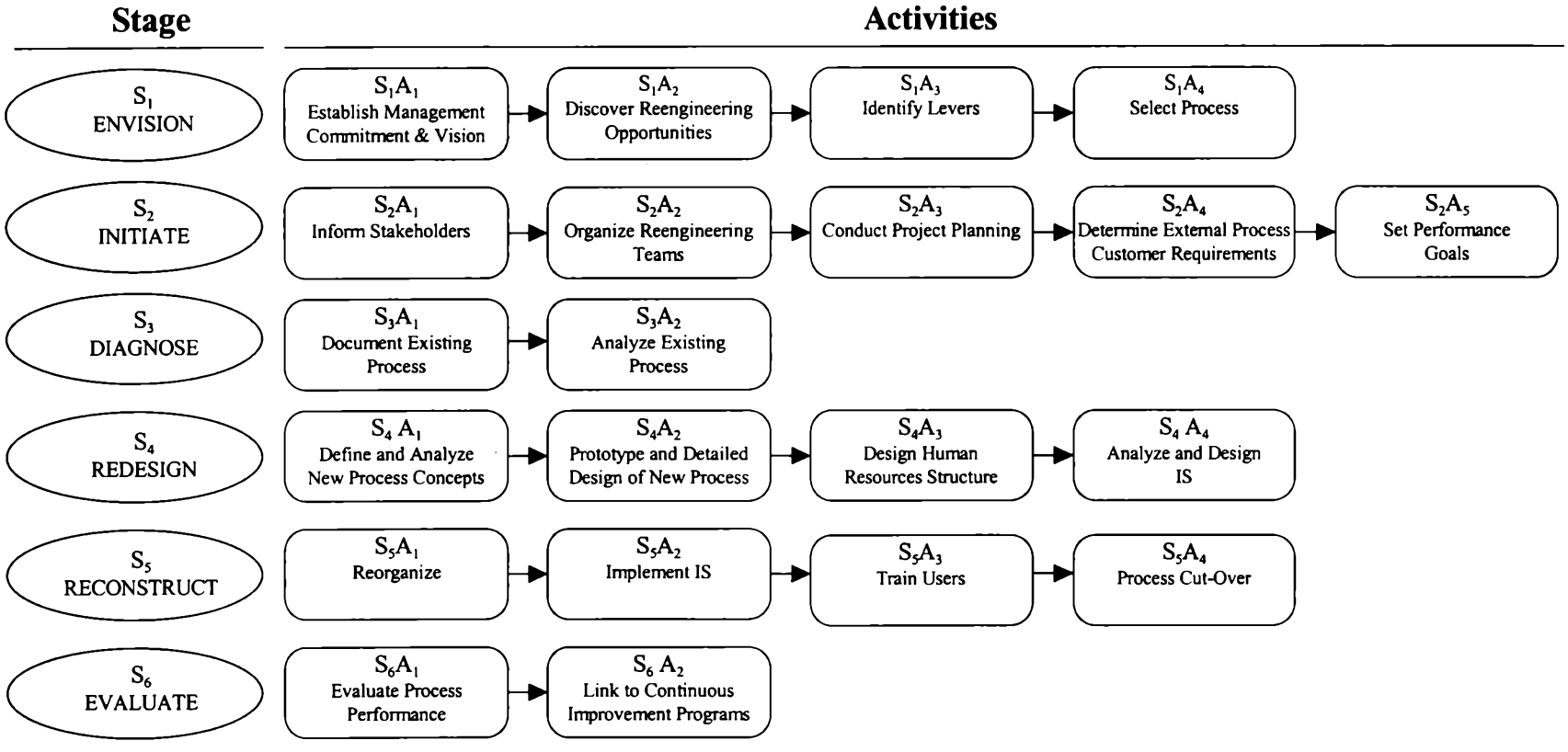
Table 9. *Methodologies utilized by Texas Instrument and Wang BPM 2000*

Texas Instrument	Wang BPM 2000
1. Customer Engagement	1. Define Business Goals
2. Process Understanding	2. Analyze the Business Process
3. New Process Design	3. Redesign the Process
4. Process Change	4. Implement the New Process
	5. Measure the New Process

Source: [115]

As it is difficult or rather impossible to point out one universal methodology, because of numerous ones being proposed, it is feasible to develop a more general framework for reengineering course. This attempt was undertaken by Kettinger, Teng and Guha. Basing on 25 commonly used methodologies, they prepared and next verified stage-activity framework for BPR. It is composed of 6 basic stages and related with them 21 activities. This framework is shown on Fig. 3.

Fig. 3 : *A Stage-Activity Framework for BPR*



Source: [115]

Mentioned above authors have also surveyed techniques and tools used during reengineering projects and assigned them to the activities shown on their BPR framework. Most of 72 techniques they collected were developed earlier and utilized for other purposes and were borrowed for reengineering projects. Most widely known among them comprise:

- Fishbone Analysis,
- Pareto Diagramming,
- Brainstorming,
- Budgeting,
- Activity Based Costing,
- Benchmarking,
- Data Flow Diagramming,
- Statistical Process Control,
- Simulation and many more.

The same remark relates to 68 gathered applications. The only difference is that number of them created especially for BPR purpose is growing all the time (e.g. TurboBPR) [115]

1.4.11.2. The most common problems occurring during the implementations

The literature study indicates many problems which have emerged in numerous organizations during reengineering projects. The nature of them is very different: from human resources to technical ones. The results of the survey conducted in 1995 among American managers point to the following elements as biggest causes of reengineering failures [42]:

- poor project management - 17,4%,
- cultural issues - 15,7%,
- lack of sponsorship - 14,7%.

Whereas study performed by Delloitte & Touche in 1996, among CIOs underline the following obstacles as the most significant [75]:

- organizational resistance to change - 82%,
- inadequate executive sponsorship - 72%,
- unrealistic expectations - 66%,
- inadequate project management - 60%.

Hammer and Stanton have identified the following ten elements as the most common reasons of lack of success in BPR projects [122]:

- discussion about reengineering instead of real implementation,

- lack of process orientation,
- spending too much time on current situation analysis,
- lack of strong executive leadership,
- lack of determination in redesign,
- moving directly from the concept to implementation phase,
- too slow redesign,
- treating some elements of business process as inaccessible,
- application of conventional implementation style,
- disregarding people anxiety.

The effort of generalization and systematization of barriers occurring during reengineering projects was undertaken by Wolf D. Schumacher. Namely, he has identified them and next divided into two groups. First one was named **hard barriers** and they comprise those of them which are related to things and regulations. They can be divided into [248]:

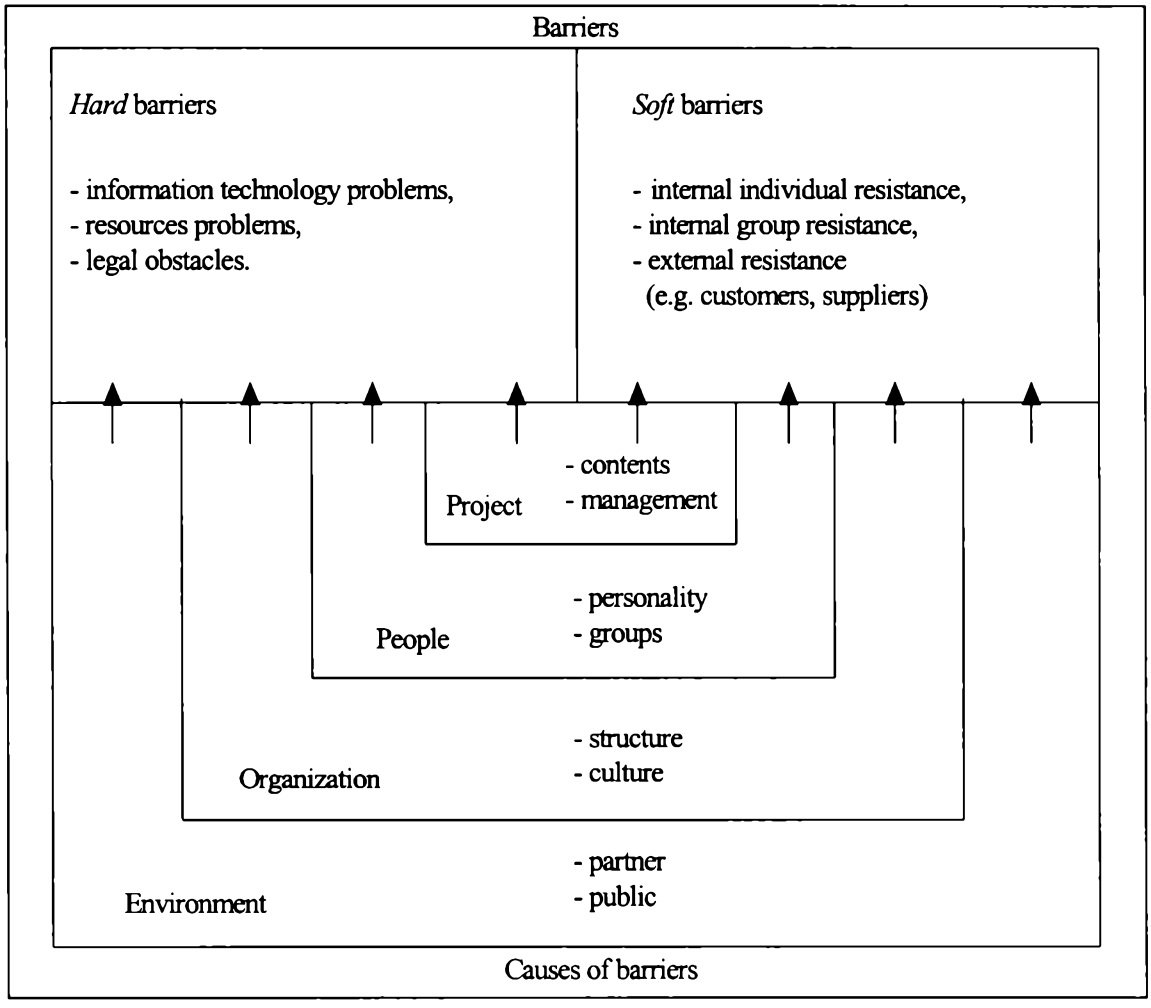
- information technology problems,
- resources problems,
- legal obstacles.

The second group of barriers are recognized as **soft barriers**, which are people problems and they include:

- internal individual resistance,
- internal group resistance,
- external resistance.

The relationships between mentioned above barriers and their reasons are shown on Fig. 4.

Fig. 4 : *Relationships between possible barriers occurring during reengineering implementation and potential reasons of them*



Source: [248]

Very detailed study of problems occurring during reengineering projects performed Grover, Jeong, Kettinger and Teng, presenting the results of their work in [114]. Basing on analysis of 105 companies which undertaken BPR program they have identified 64 most important problems and divided them into 6 categories. The results of their work are presented in table 10.

Table 10. *Problems occurring during reengineering implementation*

Categories of Reengineering Implementation Problems *(factors in each of six groups are listed in order of importance)*
I. Factors for management support problems
1. Lack of senior management leadership for reengineering efforts 2. Lack of top management support in business reengineering efforts 3. Top management's insufficient understanding about business reengineering 4. Manager's failure to support the new values and beliefs demanded by the designed process 5. Insufficient understanding about the goals of top management in relation to business engineering 6. Lack of BPR project champion
II. Factors for technological competence problems
1. Limited IS application portfolio 2. Lack of expertise in IT in the organization 3. Insufficient understanding about existing data applications, and IT across the organization 4. Lack of IS participation and assistance in the reengineering project 5. Limited database infrastructure 6. Failure to aggressively use IT enablers 7. Limited telecommunication infrastructure
III. Factors for process delineation problems
1. Difficulty in establishing performance improvements goals for the redesigned process 2. Failure to include process owners throughout the BPR efforts 3. Failure to identify process owners who are responsible for the entire business process 4. Scope of the reengineered process was define inappropriately 5.Proposed changes to the process were too incremental, not radical enough 6. Difficult to forecast human resources, financial and other resource requirements
IV. Factors for project planing problems
Factor 1. Strategic planning problems 1. Lack of alignment between corporate planning and IT planning 2. Lack of appropriate planning 3. Identification of candidate process for reengineering not based on strategic planning 4. Lack of strategic vision Factor 2. Tactical planning problems 1. Failure to commit the required resources (financial, human resources, etc.) to BPR efforts 2. Difficulty in financially justifying benefits of BPR 3. Absence of appropriate training for BPR team members 4. Failure to understand customers' viewpoints in the BPR efforts 5. Lack of external consultants support for BPR efforts
V. Factors for change-management problems
Factor 1. Change-management problems 1. Failure to anticipate and plan for the organizational resistance to change 2. Failure to consider politics of the business reengineering efforts 3. Need for managing change is not recognized 4. Failure to communicate reasons for change to members of the organization 5. Necessary changes in human resources policies for BPR implementation were not made 6. Difficulty in gaining crossfunctional cooperation 7. Senior management's failure to commit to new values Factor 2. Human resource problems 1. Inadequate training for personnel affected by the redesigned process 2. Not enough time to develop new skills for the redesigned process 3. Absence of management systems (e.g. incentive, training system) to cultivate required values
VI. Factors for project management problems
Factor 1. Project management problems 1. Poor communication between BPR team members and other organizational members 2. Difficulty in gaining control of reengineering efforts 3. Lack of appropriate BPR methodology 4. Difficulty in modeling and simulating the proposed changes to the business process 5. Failure to assess project performance in the early stage of BPR efforts to provide feedback 6. Difficulty in measuring reengineering project performance Factor 2. Time frame problems 1. The BPR effort took too much time 2. Uncertainty about BPR project time frame 3. Too much emphasis on analyzing the existing process 4. Failure to effectively monitor progress of project according to the schedule

Source: [114]

At the end of this analysis of problems occurring during BPR projects, it's worth to focus on one more important issue which was not mentioned before. Namely, this problem is productivity losses which take place during the implementation of reengineering. The results of the study conducted by ProSci show that 1/3 of surveyed organizations reported such losses and they ranged from 10% to 30% [234].

1.4.11.3. Influence of BPR on people in organization

If few years ago one was asked about the most important elements of reengineering, most of people dealing with this issue probably would have listed the following elements as process orientation, information technology or "clean slate" idea. However, significant number of failures, particularly at the early stage of BPR development, caused that companies started to devote much more attention to human factor. They realized that the foundation of every reengineering effort are people working in companies on all kind of organizational levels. So, their attitudes, behavior and involvement finally decides about the success or failure of the whole reengineering project [68]. Proven methodology, best techniques and newest tools will not help when implemented changes face ostentatious or hidden reluctance and resistance. This situation not only relates to business process reengineering, but to any kind of shifts in organizations' performance. As stated in [122] "*(...) nobody likes change - it's frightening, unsettling, messy, and uncomfortable*". People are habitually afraid of changes referring to their current jobs, work style, scope of responsibility, position in company's hierarchy. Anxiety can be particularly high towards BPR, because it promises "revolution" and abandoning all previous rules and assumptions followed by employees for many years. It's obvious that in such a situation they have a right to feel insecure. Interesting is the fact that in companies where TQM had been implemented before the level of resistance is significantly smaller.

Reengineering affects people on various organizational levels in a different way. Different is the influence of BPR on senior management, middle management and employees. Senior management is the group that is the least influenced although they experience some changes. It is obvious that they have to improve and redesign some aspects of their work. First of all they need to change their style of leadership. Traditional **controlling style** must be substituted by the **enabling** one, because " *'command and control' leadership is out*" [159]. Senior management must also improve their communication abilities with employees, as convincing people in organization about the necessity of changes and sometimes sacrifices is extremely important for success of the project. Thus, creation and proper usage of communication channels between senior management and the rest of employees is the issue of the high priority. Hammer and Stanton emphasize the importance of communication in reengineering efforts stating "*communicate, communicate, communicate*" [122]. Crucial for senior management issue is also devoting by them considerable part of their time on the project during its implementation. In successful organizations senior management spends between 20% and 60% of their time introducing changes.

The biggest upheavals in organizations introducing reengineering programs face middle management. Since layers of management have been removed and em-

ployees have been empowered, middle management has lost both the power base and a promotional ladder. Their role has been altered from controlling and monitoring to supporting and assisting teams in solving problems as well as creating proper conditions for their work. Previously, middle management decided what employees should know and do. After redesign their role is more general, the supportive one. It is also essential to add that because of organization flattering the biggest amount of job losses takes place among the middle management [57]. The importance of such a *"totally flat"* organizational structure, without middle management is indicated by Peter Drucker. It is also argued by him that the most successful information based companies have no middle managers [80]. Quite opposite opinion presents Steve Towers who considers middle management as the *"key asset"*, representing core competencies of the successful company. He underlines their significant role in implementing reengineering projects as well [282]. According to his opinion, companies implementing changes shouldn't get rid of middle managers, their role in organizations should be rather revamped [283].

One more important issue relating to all kind of managers is worth mentioning. Since a consequence of implementation reengineering programs in the last few years were common managers lay-offs, now it is being observed the diminishing level of their loyalty. Fact that most of the contemporary companies can not guarantee lifetime employment have lead to breaking *"the psychological contract"* between companies and managers. As result of it they have became more loyal to own careers than employer's, making frequent decisions about job change in order to fulfill own needs[5] [237].

The role of employees has been changed in a high degree as well. The most important new element becomes their **empowerment**. In organizations after reengineering workers have more responsibility, they must make decisions and they are also expected to be more flexible. They can't be any longer narrow specialist, but rather **process generalists**. Employees working in reengineered processes must be aware of their objects and the whole process should be completely transparent to them. But it is necessary to remember that workers' empowerment requires first careful training, preparing them to this quite new situation [81]. So, very crucial issue is developing suitable skills and competencies before starting the whole process of change. These skills and competencies comprise [57]:

- risk management,
- problem solving,
- communication,
- stress management,
- team-working,
- customer orientation,
- initiative skills,
- strategic thinking,
- planning process,

[5] This remark refers not only to reengineering , but also to other programs of radical changes as downsizing or restructuring.

- future thinking.

It is advocated that complete reengineering effort requires also preparing workers to conducting negotiation in more effective way [78].

Another meaningful problem, referring to people in organization is connected with cultural changes. The truth is that it is much easier to restyle the way people perform certain tasks than to change their beliefs and values. It is claimed that because such transformations concern changes in people mentality, they are the most difficult and usually take 5 to 7 years [212]. Typical cultural barriers can be: hierarchical organizational structure, trade unions, vertical communication, acceptance of the status quo, distrust in information technology, lack of management confidence, functional expertise and many more. Particularly important seems to be people attitude towards IT, since information technology has been identified as a core element of the reengineering. It is extremely important to create culture motivating people to use new information systems. Overcoming all cultural barriers requires introducing suitable programs of training and education in shared values and beliefs. Simply, people who introduce changes into processes have to be redesigned first. They have to be convinced to changes they lead, otherwise they will not be effective. It is also of big importance to measure and monitor all those changes in behavior. Permanent measurement indicates where the problems are located and which area requires further training.

Significant issue which should be resolved during BPR implementation phase is developing new rewards and motivation system. Flat organizational structure causes changes in promotion and career possibilities. Because of this there are not many possibilities for advancement which were previously one of the most important elements of motivation. Also in reengineered organization there is no longer place for many issues previously treated as rewards (e.g. overtime). So in this new situation managers have to develop adequate, brand new system of rewards and motivation, since proper motivating is essential especially when people are expected to work in a quite new and innovative way [57]. Apart from "*hygienic factors*" (nice work environment, competitive payment etc.) which are rudimentary elements, extremely important issue in knowledge-based companies is generating increased workers satisfaction [159].

1.4.11.4. Reengineering's success factors

In the last two subsections we have discussed problems and challenges which have to face people working in organizations implementing reengineering programs. Now we will try to identify those elements which have predominant influence on the success of BPR program i.e. **critical success factors**. Mentioned earlier survey conducted in 1995 indicate the importance of two elements [42]:

- executive sponsorship - 25,9%,
- project management - 22,3%.

Participants of "*1996 CIO Survey*" performed by Delloitte & Touche in 1996 specified the following factors as the most critical for BPR success [75]:

- a champion: a visible, involved executive sponsor - 90%,
- strong project management - 88%,
- compelling case for change - 71%,
- early integration of IS discipline - 68%,
- high ambition (stretch goals) - 61 %,
- "best and brightest" team - 61%,
- horizontal (vs. functional) process orientation - 59%.

The results of study completed at the beginning of 1997 point to six areas which are the most important for reengineering success [234]:

- building top-management sponsorship,
- ensuring strategic alignment,
- creating a business case for change,
- using proven methodology,
- effective change management.

Looking at the results of mentioned above studies it seems to be clear that executive support for the reengineering efforts is the primary success factor. This fact is commonly indicated in literature of the topic. Hammer and Stanton call executive leadership in reengineering programs as "*the primary ingredient*" [122]. Charles Handy stresses the importance of one more factor. According to him in order to achieve success in reengineering project, it is necessary to built it on trust [123].

1.4.12. BPR criticisms and estimation of their pertinence

A study of literature clearly point out that almost from the outset, various BPR aspects were criticized in a different way. But in June 1997, influential "Business Week" published an article in which reengineering is claimed to be "*the least successful concept*" among most popular management cures [36]. The author, John A. Byrn, based his opinion on the results of Bain & Co. Consultants' survey in which 17,3 % of respondents claimed that they were dissatisfied with BPR results. What is more interesting, the same magazine, in the early 90's, named Michael Hammer, cofounder of reengineering concept *"one of the four preeminent management gurus of the 1990's"* (see [43]). Below, basing on [299], we will try to review the most important criticisms of reengineering and evaluate their pertinence. First criticism refers to failures of BPR programs and it can be formulate in the following form:

Very high percentage of reengineering projects has failed

This is probably the most common and significant reproach. Reengineering critiques point out that about 70% of implemented projects were unsuccessful (see

e.g. [59], [176]). In fact this blame is not surprising and revealing. Hammer and Champy have already written in their book: "*our unscientific estimate is that as many as 50 percent to 70 percent of the organizations that undertake a reengineering effort do not achieve the dramatic results they intended*"[6] [43]. Generally explanation of this fact seems to be quite obvious. The risk relevant to the BPR implementation is very high, and this fact was pointed many times (e.g. by Davenport in [67], p.189). This riskiness of reengineering arise from the scope of activities which must be undertaken. They comprise changes in the following areas [115]:

- management subsystems (values, measures, style),
- human factor (jobs, culture, skills),
- IT,
- structures of organization (vertical compression).

This wide scope of necessary changes and its variety causes that there is a high probability of making mistake or even underestimation of some important elements, what will result in the whole project failure. Of course this high risk level is compensated by benefits which can be gained by a company as a result of successful reengineering implementation. Possible benefits are much bigger than those being an outcome of e.g. business process improvement or TQM implementations. In both mentioned management concepts, the risk of failure is much smaller because their goal is only improvement of existing processes, not a deep redesign. The most significant reasons of reengineering projects failures were discussed in subsection 1.4.11.2. It is also pointed out that especially in the early stage, reengineering was in vogue and many CIOs decided to "undertake" reengineering in their companies without assessing its real necessity, only because others were doing it [34]. The result of such a behavior could be only one. It is also claimed that such a high rate of failures is a result of including to it those projects which were called "reengineering", but in fact had nothing to do with reengineering.

Apart from commonly quoted 70 % of BPR failures, there is also data pointing on fairly big level of managers satisfaction from reengineering results. Data from mentioned "*1996 CIO Survey*" shows quite big satisfaction level of reengineering's results (see table 11).

[6] It seems that 70% of failures, mentioned by Hammer and Champy, is repeated by others. In every paper or book where this issue is discussed the same percentage is quoted by authors. If fact there are no available results of any study which could support this claim.

Table 11. *Assessment of reengineering results*

Percentage of respondents assessing results	
Satisfied	76 %
Jury still out	13 %
Not satisfied	11 %

Source: [75]

Also data from survey made among 30 Mexican companies belonging to largest 500 in this country which implemented reengineering, indicates on high satisfaction level (see table 12).

Table 12. *BPR results in 30 Mexican companies*

What has been the impact of BPR ?	
Valuable results	69 %
Regular results	21 %
Think is not the right time to evaluate the results	10 %

Source: [33]

As the areas of the best accomplishments are considered, it looks as follows:

Table 13. *The main achievements of 30 Mexican companies in BPR projects*

Areas of achievements	Percentage of betterment
Cost reduction	69%
Time optimization	62%
Productivity increase	59%
Better efficiency in services	59%
Information for decision taking	52%
Quality improvement	45%
Better financial control	41%
Hierarchical level reduction	38%
Better profitability	38%
New Philosophy & personnel motivation	34%
Technology updated	34%
Market survival	28%
Sales increase	28%
Losses reduction	21%
Environment impact	17%
Increase market penetration	14%

Source: [33]

Also the largest Canadian companies seem to be quite satisfied with BPR results, according to the survey conducted by KPMG (see table 14).

Table 14. *Assessment of success degree in BPR projects in Canadian companies*

Percentage of response	
High success	25 %
Moderate success	63 %
Low success	12 %

Source: [158]

It is also worth to emphasize that BPR results are not always satisfied at the first attempt. Sometimes failure of the first try is a good lesson for the future. An example

can be CIGNA Corporation, where expected results were achieved during the second "round" of reengineering [40].

Underestimation employees' role in the process transformation

This is very serious and generally pertinent reproach. In fact reengineering widely perceived an opinion of the concept that concentrates mainly on information technology, treating employees as a secondary element which can be moved and manipulated. Very pointedly this situation was described by Davenport stating that *"reengineering treated the people inside companies as if they were just so many bits and bytes, interchangeable parts to be reengineered"* [68]. The truth is that people are the key element of every reengineering project, because they implement changes and afterwards they will have to function in new roles as well as conditions. So apprehension of this fact by managers and their support seems to be extremely important.

The consequence of underestimation of employees role in BPR was also underrating their anxiety relating to new situation. This anxiety is caused by many reasons. Since BPR projects are typically of very complex nature, employees have to face many new issues referring to: different work style, changes in beliefs and values, new skills and competencies required of them. These problems were previously discussed in subsection 1.4.11.3.

And finally the last, but most serious source of employees anxiety - afraid of layoffs. It is mainly caused by "bad word of mouth" towards reengineering, which states that common consequence of BPR projects are mass layoff. This connotations is sometimes so strong that organizations avoid usage word "reengineering" although they undertake such programs [1]. Mentioned here issues lead to the next reproach.

Reengineering equals downsizing

The next group of reengineering critiques claim that almost every BPR project leads to big layoffs. Some of them go even a step forward stating that reengineering is equal to *downsizing*, but opinion like that seems to be completely wrong because both of them represent various approaches to implementing changes[7]. Available data points out that as a result of reengineering implementation fairly 21 % of employees loose their job (see [68], [197]). Sometimes it is even more. As an outcome of BPR project in Stomil Sanok S.A. the number of employees was reduced from 6000 to 2500, what meant 41% jobs cut[8] [306]. But it is necessary to underline strongly that layoffs are not the reengineering goal (see e.g. [167]). Clearly has explained this issue M. Hammer in the article published by "The Economist" [120]. However it is quite obvious that implementing deep and radical redesign with strong usage of in-

[7] Quoted earlier "KPMG Managing Change Report" treats reengineering and downsizing as two different change initiatives among seven major considered there [158]. Also Hammer and Stanton underline that fundamental differences between both philosophies [122].

[8] Mentioned here reengineering project, successfully completed in 1994, was the first such a program undertaken in Eastern Europe.

formation technology can lead (and often leads) to eliminating some jobs. Also vertical compression in organizations as well as employees empowerment conduces to eliminating some middle managers positions. It is necessary to remind that eliminating middle managers positions is nothing new. As a result of implementing TQM programs, about one million of such positions disappeared in U.S. for the ten years [173].

Some influence on opinion claming big layoffs could also have strict following the "clean slate" idea in early reengineering stage, although its commonness wasn't too big [115]. It is worth underlining that painful problem of necessary jobs reductions can be solved in other way than by layoffs. GTE Telephone Operations achieved it mostly by early retirements, voluntary separations and attrition. Company also successfully implemented skills training programs for those of workers who were going to loose their jobs[9] [167].

Reengineering is not anything serious, it is just a fad

The next quite numerous group of critiques claim that it is difficult to treat reengineering as a concept which will last for longer because it is only a kind of fad. Opinions like this has occurred in many publications almost from the reengineering beginning and they still are (e.g. [36]). Let's take a look whether the same opinion express managers, i.e. people who do not write about BPR but who implement it in practice. Let's recall once again "*1996 CIO Survey* ". Its results clearly point out that managers' opinions differ from those given in publications. About 84 % of them said that reengineering is "*important tool for management* " (see table 15, below).

Table 15. *What managers think about reengineering ?*

Percent of respondents endorsing the opinion	
An important tool for management, powerful when appropriately applied	84 %
Another management fad, likely to fade in a couple of years	13 %
Largely an excuse for academics and consultants to increase business	3 %

Source: [75]

It should be also pointed out that none of reengineering components i.e.:

- information technology

[9] A model for reengineering at GTE Telephone Operations was based on Hammer's approach

- business process orientation
- "clean slate" idea

has a feature of fad. They are still current and important. The importance of information technology in implementing changes even is growing in the context of the Internet development.

Furthermore, the group of people claiming that reengineering became a fad today also comprise one of its co-creators - Davenport. Although he appreciates the importance of reengineering's components, he states that today especially in U.S. reengineering did became a fad. He also claims that BPR from its beginning had all attributes of management fad. According to him those attributes comprise [69]:

- overly high level of expectations,
- shallow understanding by many enthusiasts,
- worship of a guru,
- simplified adoption in companies.

Reengineering is nothing new

This criticism has also quite often been repeated. P. Strassmann even claims that reengineering is nothing more than "*clever buzz word*" [258], [259]. In fact basic reengineering components (as it was quoted above) information technology, business process orientation and "clean slate" were used before, but always separately. The BPR idea is different. It joints those elements together in order to achieve remarkable results [68]. And an approach like that is innovatory. It is also true that reengineering mainly adopts for its purpose tools and techniques previously used in other concepts e.g. TQM, human resources etc., although there are some prepared especially for BPR (see 1.4.11.1.) It is also worth to quote an opinion of Hammer. Referring to the remark that reengineering is nothing new, he answers: "*who cares ?*" [122].

And finally, there is one more criticism formulated by quoted earlier P.Strassmann.

Reengineering's theory and practice is full of violence and revolution

This criticism appears to be somewhat true, but only referring to Hammer's approach presented in his paper "Don't automate, obliterate" and reengineering's bible "Reengineering the Corporation" written together with Champy. It is even sometimes maliciously called "*nuke them philosophy*" [178]. In these publications he underlined radicalness of reengineering programs as their most important feature. However, very quickly he came to the conclusion that not radicalness, but process orientation is the most important in BPR efforts and such opinion is presented in the second edition of "Reengineering the Corporation" and written a year later "Beyond Reengineering" [121].

Quite different BPR's vision was given by Davenport in his papers, but mainly in book "Process Innovation". Its approach is completely devoid of language of ag-

gression and very detailed. It also puts stress not only on information technology but also considers human factor as one of BPR enablers. Unfortunately Hammer's approach of reengineering became predominant, so most managers built their vision of BPR on his concept .

1.4.13. Reengineering's perspectives for the future

It seems that after eight years that passed from reengineering's "debut" and five years after publication of famous Hammer and Champy book which popularized this concept worldwide, its condition is quite good. Although some of its co-founders have abandoned it (Davenport), it is not dead as some its critics claim, rather as writes Coleman *"we are in the middle of a re-engineering revolution (...)"* [54]. Undoubtedly, reengineering is not now so popular in mass-media as it used to be few years ago and attitude of people to this concept is less emotional. Instead there are much more matter-of-fact appraisals of this philosophy, including many academic investigations. Nowadays reengineering is claimed to enter its second phase and it is expected that it will bring many changes being a result of analysis of mistakes made in the first period [197]. An approach to many elements of BPR concept has been altered. Today, for example, nobody seriously considers complete destroying old processes and creating new ones from the "ashes", what advocated Hammer in the early phase of BPR concept development. Generally, radicalness of reengineering has diminished. Nowadays, organizations' improvements expectations are not so high as they were few years ago and are equal to 10 % - 30 % [10] [234]. Much more attention is focused to human resources, because it became obvious that without their strong involvement in process of change the success of the whole project is not possible. Also, nobody today treats reengineering as *"quick fix"*[11], it is rather seen as a *"form of organization change"* [115]. Available data clearly point out that the average BPR time is not short - about 19,7 months [234]. Few years ago Davenport indicated that minimal period of reengineering project it is 18 to 24 months. He underlined that complex BPR efforts can last even 5 years[12] [67]. According to another sources reengineering time is estimated to 9 to 18 months [20].

The result of increasing number of consulting companies helping various organizations in implementation redesign programs is proliferation of new reengineering methodologies. Also the number of new reengineering tools is growing rapidly. As well, the number of countries where BPR has been used testifies its growing popularity. Although at its onset, reengineering was mainly popular in the U.S., today it is being implemented around the world. In *"1997 Best Practices Study "*, con-

[10] Few years ago A. Berztiss claimed that we have to do with reengineering when *"effectiveness of an organization is being at least doubled (...)* [25]. In 1993 Davenport wrote about *"50%, 100%, or even higher improvements level (..)"* [67].

[11] According to surveys conducted by Gateway Management Consulting, between 1992 and 1994, most of managers expected results of reengineering efforts in the time shorter than one year [156].

[12] Such a period of time is reported by GTE Telephone Operations referring to their reengineering project [167].

ducted by ProSci at the beginning of 1997, there are 26 participating organizations from countries on six continents [234]. Davenport perceives the biggest chances for further BPR concept development in South America, Europe and Australia [67].

Generally, the rapid growth of the Internet and electronic commerce which requires from organizations re-examination of traditional business practices and procedures leading to redesign many of their basic processes provides reengineering with opportunities for further development [211]. Taking into consideration the marketing process only (which will be examined in the next chapters of this dissertation), it is estimated in the report of Gartner Group, that 70% of companies will have to reengineer and automate it, by the year 2000 [157].

And one more final remark. Utilization of reengineering does not exclude usage of other concepts focused on processes as Total Quality Management or Business Process Improvement. What's more, processes' adjustment and next their permanent improvement is necessary step after BPR project completion. In this area there is a lot of work for concepts offering evolutionary approach to implementation of changes in business processes [43], [67], [215].

2. Characterization of the Internet and electronic markets

In the previous chapter we have presented basic aspects related to implementation of deep changes in performance of contemporary organizations by means of business process reengineering concept. Chapter 2 and the following ones will describe the potential of the Internet as well as its role in redefining business processes, particularly marketing one. There will be also presented new marketing tools and possibilities of their practical utilization together with so far used ones in the process of company's marketing strategy fulfillment.

2.1. The short history of electronic markets

Although, the history of electronic commerce and electronic markets is not very long, they haven't emerged recently, but rapid growth of the Internet in the last few years has significantly spurred their development and meaning. In the early 1970s some companies, mainly in the U.S., created single-source electronic sales channels which allowed their customers (business ones) for *on-line* purchases[13]. Establishing such sales channels, companies hoped that it would be a source of their strategic advantage. And it actually was, but only for a short period of time. It turned out very quickly that some customers did not want to be locked by suppliers, even the best ones, but only to their own offer. They wanted to have possibility to compare different offers to choose the best ones. Thus, finally the strategy of binding clients to company's own offer had to be abandoned, but it was the first effort of creating very limited electronic sales channels [24]. In the next years there were many attempts of electronic commerce, mostly in business-to-business segment. They were based on expensive private networks and EDI[14] (*Electronic Data Interchange*) usage, what made them affordable mainly to large organizations [61]. There were also some efforts of business-to-consumer e-commerce as at the beginning of 1980's Minitel in France (see [161], [173]), but in all cases, regardless the segment, access to those markets was very limited and they didn't possess advocated features of electronic markets, as follows [246]:

- **Ubiquity** (i.e. 24x7 availability for every user who has access to telecommunication network, regardless place of stay),
- **Easy access to information**,
- **Low transaction costs**.

Explosion of the Internet in the early 1990 caused that real global electronic market, close to fulfilling all mentioned above requirements, began to emerge. It allowed also

[13] An examples can be Inland Steel and Digital Equipment Corporation . First company allowed their customers for *on-line* steel ordering and tracking its shipment, while the second one made customers able to place *on-line* order for their computers products.

[14] Standard of information transmitting which gives opportunity of placing orders, sending invoices and notification or shipment tracking.

small and medium-sized enterprises (SME) for access to electronic commerce by means of public networks [56]. In fact number of companies involved in e-commerce quickly grows, because they realized how many possibilities of increasing their economic effectiveness it gives [302]. Although currently about 80% of total electronic commerce takes place in business-to-business segment (see [211]), also its business-to-consumer part grows very impressively. Its real growth began in 1993 with release of the first Web browser, Mosaic, which allowed millions of potential customers worldwide for easy navigation through the multimedial part of the Internet [14], [15].

Electronic market arising around the Internet, dynamically developing from month to month, becomes the first global marketplace, commonly accessible for suppliers of various goods or services, customers or just visitors of *on-line* shops, malls, travel agencies or banks. Although it is still imperfect and many issues have to be solved, its potential is really impressive.

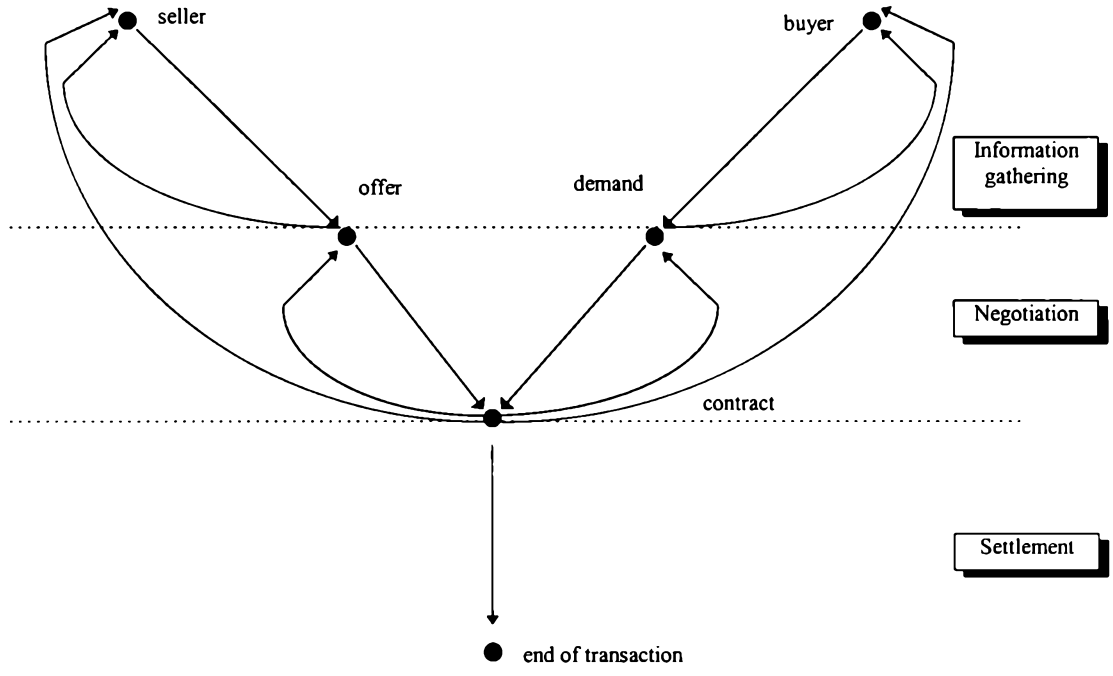
2.2. Definitions related to electronic markets

In the previous subsection we have shortly described the history of electronic markets and mentioned three features which should characterize them. Now we will try to define what **electronic market** (EM) really is. The most general definition says that "*electronic market is one to which information technology have been or are being applied*" [37]. Differently defines EM B. Schmid. Taking into consideration that every transaction comprises three phases (see Fig. 5):

- information gathering,
- negotiation,
- settlement,

electronic markets can be defined according to him as "*market places put into action by means of telemetics which support all phases of market inter-transaction, including the formulation of prices for goods and services*" [246]. Taking into consideration fact that EMs are still in the infant phase of their development, Schmid suggests another, more general definition which says that electronic markets should be understood as "*information systems supporting one or more phases and/or functions of coordination within market systems*" [246].

Fig. 5: *Phases of a market transaction*



Source: [165]

Different approach present Rayport and Sviokla who don't use the term *electronic market* at all. As distinct from *marketplace* they have introduced the term **marketspace**. They consider that development of information technology and particularly the Internet, have caused that traditional marketplace understood as a place where physical interaction between buyer and seller takes place has been evaluating into the marketspace. Transactions which take place in the marketspace differ from those occurring in the marketplace in all aspects:

- another is *content* of transaction (information exchange replaces physical exchange of goods),
- different is transaction *context* (physical meeting of buyer and seller has been replaced by action on computer screen),
- different is *infrastructure* which makes transaction possible (computers and telecommunication lines replace shops or markets) [236].

Rayport and Sviokla also underline that while in the traditional marketplace three above mentioned elements (content, context, infrastructure) are usually aggregated, in the *marketspace* they can be easily disaggregated and manipulated independently.

Term "electronic market" strictly links with another one - **electronic commerce**. It can be defined as "*the buying and selling of information, products, and services via computer networks*" [150] or more general as "*support for any kind of*

business transactions over a digital infrastructure" [27]. At the end of this subsection it's time for the term which is very important in this dissertation - **electronic marketing**. By electronic marketing we will understand *marketing widely utilizing information technology for its purpose*. Referring to the Internet, also other terms instead of electronic marketing are used, as: *cybermarketing, Internet marketing, Netmarketing or Web marketing.*

2.3. Internet

2.3.1. Definitions of the Internet

Although only few years have passed from the wider popularization of the Internet, it has already resided very deeply in the awareness of the people around the world. No longer articles about it have been only published in specialist magazines destined for a narrow group of recipients. Nowadays, information about various aspects of the Internet can be found almost everyday in newsletters, magazines, TV or radio programs. It has been already treated as something obvious, integral part of everyday life. Despite of the seeming obviousness what the Internet is, now we will try to define it precisely.

Looking from the technological point of view, the Internet is a set of independent networks, designed according to individual requirements of their users, in which computers work using different operating systems and that can communicate with each other thanks to utilization of the protocol TCP/IP [41]. In the July 1996 the Internet consisted of 134,365 networks scattered around the world [310]. Some authors try to describe the Internet just from this technological point of view. An example can be the following definition which says that "*the Internet is a global computer network which is linked together by international telecommunications lines*" [278].

As a matter of fact the Internet is something much more complicated than only computers linked together. Far more complex vision of what the Internet is, gives definition presented in [133]. It says that the Internet is:

"*1) a network of networks based on the TCP/IP protocols,*
2) a community of people who use and develop those networks,
3) a collection of resources that can be reached from those networks".

Above mentioned definition tries to present the Internet from three points of view: technological, social and practical one. It seems that such an approach is the most appropriate and describes it in the most complete way.

2.3.2. History of the Internet's development

Despite of the fact that the Internet became popular in the last few years, its origins reside at the end of 1950s and its history proves that long-term government investment of scientific research, after years can result in measurable economical effects. The beginnings of the this global network dates back to 1957. In this year,

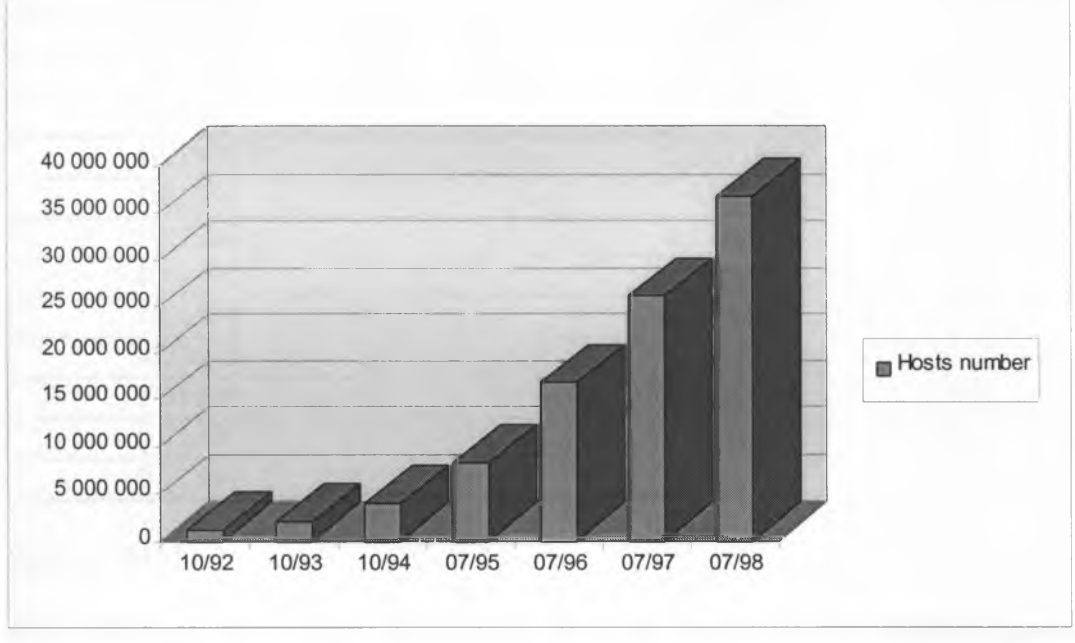
responding to launching of the Sputnik, U.S. government created within the Department of Defense, the Advanced Research Projects Agency (**ARPA**). Its goal was establishing American leadership in the military technology. Agency began to work on the project of creating global computer network able to survive the nuclear attack. In 1967 the first concept of such a network called **ARPAnet** was published and two years later first four computers were connected. Next hosts were quickly added to the network and in 1970 they started to work basing on the protocol **NCP** (*Network Control Protocol)*. In the following year one of the most important Internet programs, *e-mail*, was invented. During the International Conference on Computer Communication (*ICCC*) in the 1972, ARPAnet was for the first time publicly demonstrated. In the same year specification of *telnet* protocol was published. It allowed a user of one computer connected to the network for login to another host [144]. Next year, the first international connection between hosts from England and Norway took place. In the same year specification of the next protocol, **FTP** (*File Transfer Protocol*), was issued. It gave opportunity of sending files between two hosts [144]. An interesting fact is that in 1976, Queen of England Elizabeth II sent her e-mail for the first time. Three years later (1979) worldwide system of discussion groups (*newsgroups*) i.e. USENET was established. In 1982 **TCP** (*Transmission Control Protocol*) and **IP** (*Internet Protocol*) were introduced as the one protocol suite - **TCP/IP**. Basing on **IP** protocol, every host connected to the Internet has received its individual four part number (e.g. 171.211.575.7). On 1st January 1983, all ARPAnet hosts moved from NCP protocol to TCP/IP, which in this moment became the only valid one. In the next year **DNS** (*Domain Name System*) was introduced. It allowed for naming hosts basing on natural language, easier for usage than IP numbers (e.g. www.ae.wroc.pl). DNS translates domain name into the adequate IP number. In the same year first moderated discussion groups appeared on USENET. In 1988 **Internet Relay Chat** (*IRC*) protocol was introduced, which allowed for live discussion among many users. Two years later (1990) ARPAnet finished its existence. In the same year **Archie**, tool allowing for finding various files collected on anonymous FTP sites, was released. Also first commercial Internet Service Provider (world.std.com) started offering its service. Very plentiful in novelties was 1991. First, **WAIS** (*Wide Area Information Servers*) tool allowing for finding information collected in the Internet, because of their indexing, was released. Available became also **Gopher**, what gave users opportunity of access to information and its downloading from hosts around the world. In the same year was released the most important part of the Internet - the **World Wide Web**. It allows for access to information collected as a hypertext and its downloading to a client (more detailed it will be discussed in 2.3.4.). In 1992 **Internet Society** watching over the unconstrained development of the Internet, was established. In the same year **Veronica**, tool allowing for searching Gopher servers was released and World Bank created its Web site. Next years were a time of rapid expansion of the Internet. In 1993 White House and United Nations established their Web sites. During the next year also U.S. Senate came *on-line* and the first Internet bank, First Virtual, started its business activity. In 1995 three powerful American companies, Compuserve, America Online, Prodigy, offering traditional dial-up sys-

tems became Internet Service Providers. Further development and commercialization of the Internet has been continued [310].

2.3.3. The size of the Internet

Commonly known fact is that population of the Internet users includes millions of people worldwide. But providing with their exact quantity causes big difficulties. Relatively easy the number of Internet hosts can be determined. This data are available and they are continuously updated. Table 16 presents data from the beginning in 1969 until July 1998. Within the space of 29 years the number of hosts increased from 4 computers (!) to over 36 million. The dynamism of their growth between 1992 and 1998 is shown on Fig. 6.

Fig. 6: *Dynamism of Internet hosts growth (1992-1998)*



Source: [310]

Table 16. *The increase of Internet hosts (1969-1998)*

Date	Number of hosts
1969	4
04/1971	23
06/1974	62
03/1977	111
08/1981	213
05/1982	235
08/1983	562
10/1984	1,024
10/1985	1,961
11/1986	5,089
12/1987	28,174
10/1988	56,000
10/1989	159,000
10/1990	313,000
10/1991	617,000
10/1992	1,136,000
10/1993	2,056,000
10/1994	3,864,000
07/1995	8,200,000
07/1996	16,729,000
07/1997	26,053,000
07/1998	36,739,000

Source: [310]

Very divergent are estimations referring to total number of the Internet users, although the commonly known fact is that pace of their growth is quick[15]. Former Executive Director of the Internet Society, Tony Rutkowski suggests multiplying the number of hosts by 10 [188]. In July 1997 it would give more than 190 million Netizens. It seems that this method gives overstated results comparing to other ones. At the same time "The Economist" estimated the number of Internet users to 55 millions [15]. Nua Ltd., Irish consulting company, basing on analysis of surveys conducted by various organizations determined that at the end of 1997 over 100 million people around the world were *on-line* [183]. In December of 1998 they estimated this number to 151 million (see table 17) [203].

[15] In August 1998, "Iconocast" estimated that in U.S. the Internet gained new one user every 1,75 seconds [268].

Table 17. *The number of Internet users in various parts of the world*

Part of the world	Number of users (in million)
Africa	0.92
Asia/Pacific	25.57
Europe	32.38
Middle East	0.78
Canada & USA	87
South America	4.5
Total	**151**

Source: [203]

Additionally, Nua Ltd. estimates that at the end of 1999, the number of people *on-line* will exceed 200 million [185].

2.3.4. The World Wide Web as the most dynamically developing part of the Internet

2.3.4.1. General characterization of the WWW

Nowadays the most important and dynamically developing part of the Internet is **World Wide Web** initiated by Tim Berners-Lee. It is actually the first example of **hypermedia computer-mediated environment** (*CME*), which can be defined as:

"*a dynamic distributed network, potentially global in scope, together with associated hardware and software for accessing the network, which allows consumers and firms to*

1. *provide and interactively access hypermedia content (i.e. 'machine interaction'), and*
2. *communicate through the medium (i.e. 'person interaction')*" [131].

The concept of the WWW emerged in 1989 when Berners-Lee was working at European Particle Physics Laboratory (CERN) in Geneva (today he is a director of W3 Consortium). It is based on three key elements being the foundation of the Web:

- **HyperText Transfer Protocol** (*HTTP*) - protocol which allow for exchanging documents between computers regardless of platform they use,

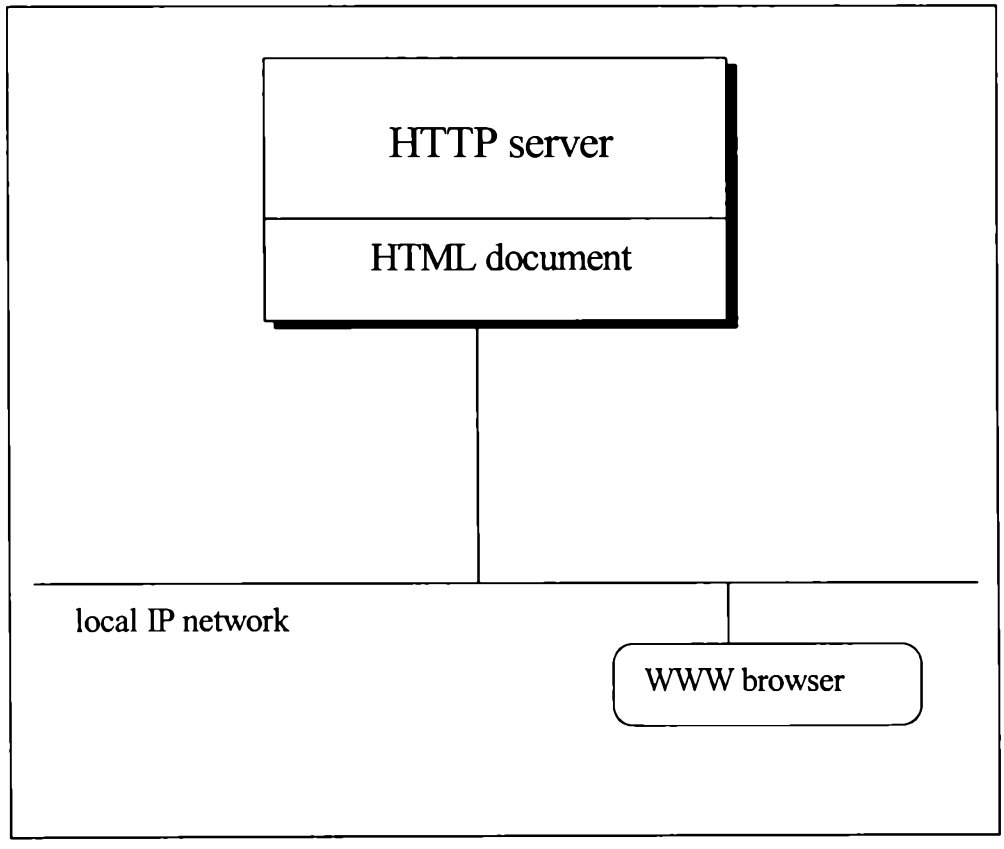
- **Uniform Resource Locator** (*URL*) - standard form of giving address to every document placed on the WWW, enabling its easy locating among millions of other ones and retrieving it,

- **HyperText Markup Language** (*HTML*) - language used for creating documents placed on the Web.

When all above mentioned elements were ready, in December 1990 Berners-Lee made them available to small group of colleagues from CERN and in the summer 1991 they were placed on the Internet [249], [293].

The model of WWW functioning is simple. A person interested in downloading a certain document, using his/her browser sends a request for it defined by HTTP protocol through TCP/IP network to Web server, which after receiving it transfers document back (see Fig. 7).

Fig. 7: *Model of the WWW functioning*



Source: [195]

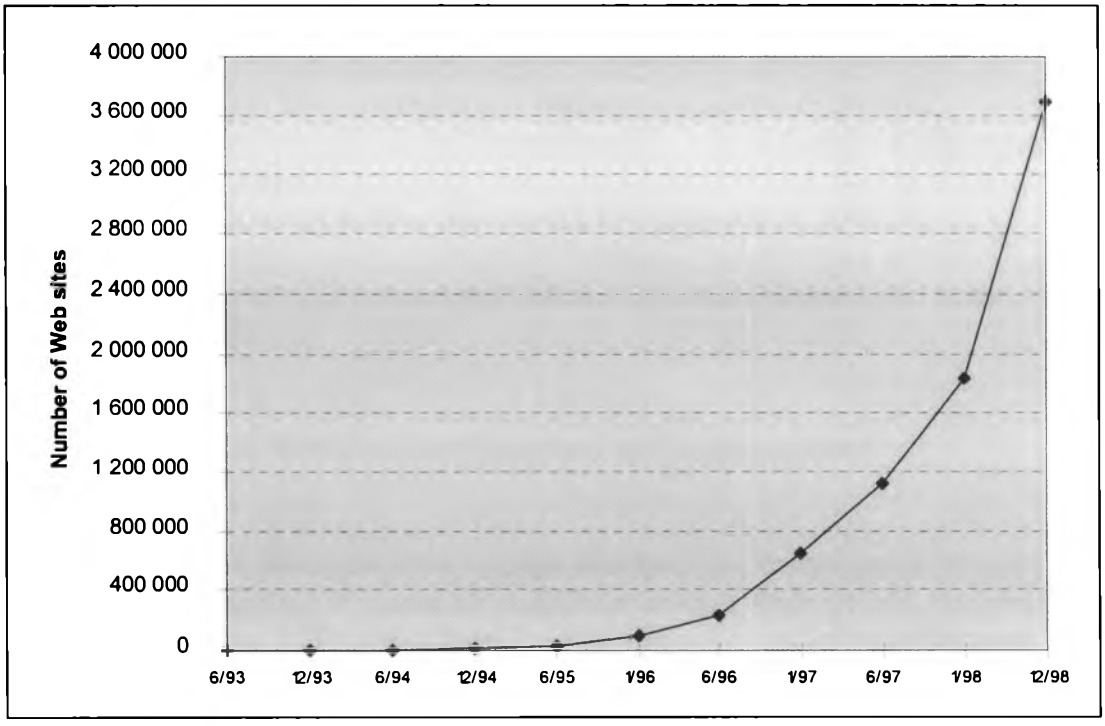
Despite the World Wide Web is the youngest part of the Internet its development is the most dynamic. The number of Web sites, both commercial and non-commercial ones grows every month at a rapid rate. In spite of fact that the WWW became a part of the Internet in 1991, the earliest data about the number of Web sites come from 1993, that is beginning of the WWW boom. At that time they were estimated to 130. During next five years their number increased by 28.378 times (!), reaching 3,689,227 in total on December 1998. Table 18 presents breakdown of Web sites number within the space of five years. Dynamism of growth is perfectly seen on Fig. 8.

Table 18. *Growth of Web sites number (1993-1998)*

Date	Number of WWW sites
July 1993	130
December 1993	623
June 1994	2,738
December 1994	10,022
June 1995	23,500
January 1996	100,000
June 1996	252,000
December 1996	603,367
January 1997	646,162
June 1997	1,117,259
December 1997	1,681,868
January 1998	1,834,710
June 1998	2,410,067
December 1998	3,689,227

Source: [310]

Fig. 8: *Dynamism of Web sites increase*



Source: [310]

2.3.4.2. Web site types

In spite of big diversity of existing WWW sites, there is a possibility of systematizing them. According to [132], six basic types of commercial Web sites can be defined:

- **Online Storefront**
  These kind of Web sites offer customers possibility of choosing a certain product from electronic catalog and its *on-line* purchase. Various products are offered in this way: software, books, CDs, computers, articles from magazines, airline tickets, even cars. They are usually ordered by filling out the *on-line* form or still often happens that customers can use toll-free numbers for this purpose.

- **Internet Presence**
  It is unquestionably the most popular form of the Internet utilization for business purpose. In this way companies try to provide their current customers and customers-to-be with profile of their business activity as well as offered products. Customers are very often directed to Web sites of this type by URLs placed on TV commercials or press advertisements where there is no possibility of providing them with detailed information, because of time or space limitation.
  This kind of WWW sites were additionally divided into three groups:

- **Flat Ads**
  Single Web pages without any hypermedia links

- **Image Sites**
  Web sites which the most important elements are images or pictures.

- **Information Sites**
  Web sites containing information about a company and its products.

  Currently, presented above categorization of *Internet Presence sites* seems to be rather pointless.

- **Content Sites**
  In this group of Web sites three categories can be distinguished:

  - **Fee-based**
    In this model consumers pay for access to a specific information or reports. Such approach is applied by some of magazines towards their *on-line* versions (e.g. "The Economist", "Business Week"). Also companies as Forrester Research, ActivMedia Research or Andersen Consulting claim fee for access to results of their various studies.

  - **Sponsored**
    In order to eliminate the necessity of paying fee by consumers for access to a specific information, some companies sell advertisers space on their WWW pages.

  - **Searchable Databases**
    In this model companies pay for placing their information in a database, which customers can access free of charge.

- **Mall Sites**
  They consist of group of *on-line* shops which offer various goods and services. Usually such storefronts are pay provider fee for the virtual real-estate.

- **Incentive Sites**
  They offer potential customers attractive for them content in order to encourage them to visit a specific Web site containing a commercial proposal which is the real goal of their action.

- **Search Agents** (*Search Engines*)
  The most popular Web sites which allow for finding other sites containing specific information. They are usually free of charge, basing on selling advertisers space on their WWW pages. Their meaning is particularly important, because of amount of existing Web sites and WWW pages.

2.3.5. General characterization of WWW and Internet users

Having some knowledge about the amount of Internet users, now we will try to focus on their demographics and attitude towards this new medium as well as their *on-line* behavior as consumers. This kind of information are very important for every kind of business activity conducted on electronic markets.

Studies of Internet and WWW users are conducted by many various organizations. One of the most widely known and considered as reliable are surveys run twice a year (spring and fall) by Georgia Institute of Technology called "*GVU's WWW User Survey*". Basing on their results (also other ones) we will give some information characterizing WWW and the whole Internet users.

As to general demographics, the average age of the Internet user is 35,2 years old and it has been permanently increasing [153]. At the same time the results of "*FIND/SVP's 1997 American Internet User Survey*" determined this age to 36,5 years. NetSmart specifies the average age of female Internet users to 41 years. Additionally study by Juppiter Communication concluded that teenagers represent 34% of the whole Internet community and survey conducted by Excite Inc. indicate that 14% of people being *on-line* are over 50 years old [199]. Referring to gender of the Internet users, most of them are male (66,59%), although there are meaningful differences between U.S. and Europe. Taking into consideration U.S. only, the proportions look as follows: 33,4% are women and 66,59% men. In Europe the domination of men is more obvious because they constitute as much as 85,36% of Internet users [153]. But most of organizations conducting surveys claim that proportions of both genders in *on-line* community will be equal in 2000 year [199]. Among all Internet users, 54,24% have completed a college or higher degree, but Europeans present higher educational level than Americans. Also women level of education is higher than men. The results of "*GVU's 7th WWW User Survey*" concluded that 32,09% of female Internet users completed college comparing to 27,92% of men. Referring to job of people being *on-line*, occupation of 30,24% of them is computer related, 24,48% are in education, 20,61% are professionals, 14,78% represent other jobs and 9,95% of them are managers. More of men (34,77%) than women (20,28%) work in computer related fields.

As race of Internet users is considered, most of them is white - 89,35%. Most of people (65,04 %) pay by themselves for access to the Internet, while in case of the rest they have paid it for by work. Also here there are differences between Europe and US. Americans more often (66,94%) than Europeans (47,50%) do it by themselves. As experience on the Internet is considered, 25,34% of respondents have used it for year, 43,99% between 1 and 3 years, 20,13% have been *on-line* for 6 years and 7,14% have been familiar with the Internet for more than 7 years. Also frequency of the Internet usage differs, because 85,16% use it every day, 41,69% do it 1 to 4 times a day, 41,69% more often and 14,84% with less frequency. Referring to time spent by people *on-line*, 22,19% of them browse the Web for over 20 hours a week, 28,92% do it for 10 to 20 hours, 17,08% spend there 7 to 9 hours, while 14,84% do it for 4 to 6 hours. Spending less than 5 hours per week was reported by only 14,88% of respondents. Interesting fact is that 35,17% of Internet users surfs the Web instead of watching TV ! About 98,36% of WWW users utilize also e-mail. Similar percent-

age (96,31%) use phone as well. Surprising can be the fact that only 71,19% of people being *on-line* use traditional mail service. It means that in the Internet community, e-mail became more popular than traditional mail.

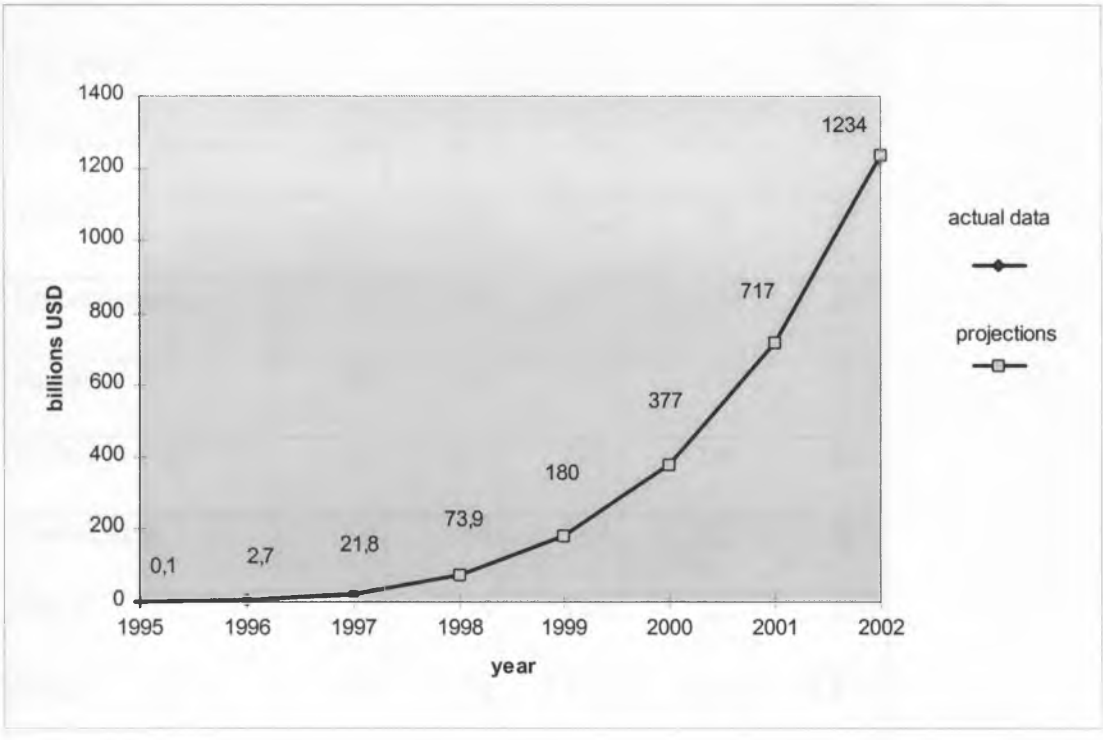
At the end let's focus on attitudes of the Internet users as customers. As *on-line* shopping is considered, 61,47% of users have done it at least once, but Americans more often (64,62%) than Europeans (50,47%). More than 40% of the Internet community spent over $100 shopping *on-line*. The most preferred method of sending credit card details are call or fax toll-free numbers and secure Web servers. It is reported the growth of acceptance for providing credit card information via the Web, while, what is interesting, Internet users are still afraid of sending them by e-mail [153].

2.3.6. Economical potential of the WWW and the Internet - today and perspectives for the future

There are many various sources of data and forecasts referring to all areas of business activity over the Internet. They provide with current information as well as projections for the next years relating to the Internet economy as a whole, but also to each segment: tourism, advertising, groceries, insurance etc. Publishing such forecasts some companies introduce new indexes used by them to describe the Internet marketplace. Characterizing the market for the Internet/Intranet products and services Zona Research, Inc. has introduced the term **Adjusted Gross Internet Product** (AGIP), defined as "*value of all Internet-related goods and services*". The company estimates that by the year 2000 it will reach $100 billion (in 1996 it was $34,97 billion). Beside AGIP, Zona Resarch, Inc. uses also the term **Gross Internet Product** (GIP) defined as "*the value of all Internet-related goods and services, plus the value of all goods and services sold via the Internet*" [164].

Forecasts referring to global Web revenues, generated by sales of products and services at commercial Web sites gives *Activ*Media, Inc. Basing on their 1998 study, company predicts that in year 2002 they will exceed $1,2 trillion (3,8% of total global trade). A year earlier projections were more optimistic, estimating this value to over $1,5 trillion . Also *Activ*Media's predictions for year 1997 ($24,4) have been already verified (see Fig. 9) [2], [3].

Fig. 9: *Global Web-Generated Revenues*



Source: [3]

In 1997, 30% of Web sites declared that they are profitable, while next 25% predicted profitability during the next year. As to the composition of commercial Web sites, it looked as follows:

- retailers - 23,5%,
- manufacturers - 17,5%,
- wholesalers and distributors - 8%,
- service - 41%,
- publishers, media, theater - 12,3%.

Globally in 1997, the number of commercial Web sites was estimated to 250.000 [2], [201].

Let's review other projections. According to Forrester Research in 2003 worldwide Internet commerce will be $3,2 trillion [106]. Company also predicts that in year 2000, *on-line* retailing revenues will reach about $6,6 billion. Breakdown by segments is shown in table 19.

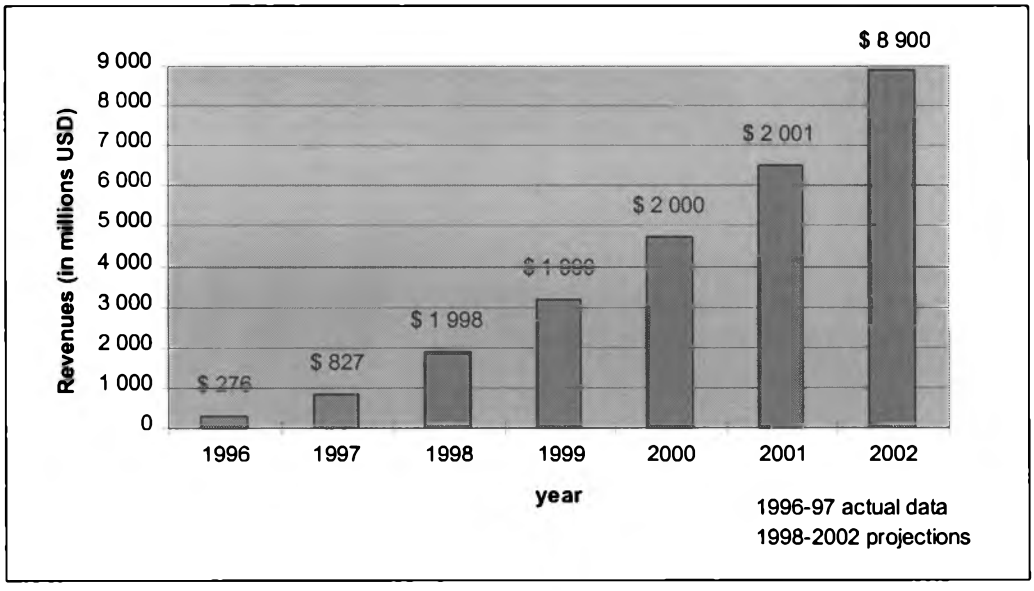
Table 19. *Forecasts of on-line retailing revenues (in millions USD)*

Segment	1996	1997	1998	1999	2000
Computer products	140	323	701	1.228	2.105
Travel	126	276	572	961	1.579
Entertainment	85	194	420	733	1.250
Apparel	46	89	163	234	322
Gifts/Flowers	45	103	222	386	658
Food/Drink	39	78	149	227	336
Other	37	75	144	221	329
Total	**518**	**1.138**	**2.371**	**3.990**	**6.579**

Source: Forrester Research Inc. in [64]

As it is shown in this breakdown, travel products are on the second position just behind computer products. In fact it turned out that just travel is the leading segment of *on-line* consumer market. Research conducted by for Travel Industry Association of America (TIA) by Jupiter Communications, revealed that in 1996 revenues generated by *on-line* sales of travel products reached $276 million and in 1997 they were tripled to $827 million (see Fig. 10).

Fig. 10: *On-line travel revenues*



Source: [225]

Let's review other revenues generated *on-line* by other segments of the consumer market.

Important segment of the Internet market becomes revenues generated by advertising. Although money company currently spent on the Internet advertising are relatively low[16], they have been permanently growing. According to Internet Advertising Bureau in the first half of 1997 advertising revenues reached $344 million, what meant a 322% increase comparing to the first half 1996. It exceeded the total 1996 revenues of $267 million. Similar situation was reported in 1998, when during the first half of year companies spent on the Internet advertising $774 million (see table 20) [170], [270]. It indicates significant growth of advertisers interest in the Internet and treating it as a important element of promotional campaigns.

[16] In 1998 expenditures of Procter & Gamble on the Internet advertising reached $3 million, comparing to $3 billion advertising budget [23]

Table 20. *Internet Advertising Revenues (in millions USD)*

Quarter	Year	Revenue
Q1	1996	30
Q2	1996	52
Q3	1996	76
Q4	1996	110
Q1	1997	130
Q2	1997	214
Q3	1997	227
Q4	1997	336
Q1	1998	351
Q2	1998	423
Q3	1998	491

Source: Internet Advertising Bureau in [270], [271]

As insurance market is considered, Forrester Research predicts that in 2001 insurance premiums of $1,1 billion will be generated *on-line* [201], [269].

There is also a permanent growth of *on-line* grocery shopping. According to 1997 projections of Anderson Consulting, during the next 10 years their sales over the Internet will reach $60 billion. Additionally, company predicts that during the next 7 to 10 years up to 20 million of households will shop *on-line* [200].

As sales of prerecorded music over the Internet is considered, Jupiter Communication expects that in the year 2002 it will reach $1,6 billion and it will represent 7,5% of the whole music market [201].

Facts which were given above are very selective, but it seems that they very clearly indicate that the Internet is not a fad. Nowadays, at the early stage of its development, it has already became a source of significant revenues for many industries and companies operating there, while its meaning will be quickly increasing during the next few years.

2.3.7. Factors slowing the Internet's development

Despite of possibilities which gives the Internet as well as potential of network economy, one should be aware about some problems which slow its development and commercialization. Undoubtedly the number one problem of the Internet is its far too slow connection speed. This observation has been confirmed by respondents of quoted earlier "*GVU's Seventh WWW User Survey*", since 66,31% of them considered insufficient access speeds as the biggest problem of the Internet [153]. Such a

situation causes that connections are too slow, particularly during the peak hours, what makes difficulties with downloading WWW pages and raises costs of the Internet usage. The inconvenience for the user increases in situation when pages contain a lot of graphics.

Next issue, deciding to a large extent about the Internet commercialization and which is not completely solved, is providing payment systems adequate for requirements of electronic market. They must be fast, reliable as well as ensuring security for both customers and vendors. Unconstrained flow of money over the Internet is a factor essential for its commercialization. For the moment credit cards are the most widely utilized for this purpose, although in situation when uniform standard of *on-line* payment has been still not finally implemented, telephones and faxes are used for sending required information. Also role of "secure servers" based on SSL protocol usage has been constantly growing.

Mentioned above security systems are the next Internet problem. Because of its open form, it is necessary to ensure the proper security level referring to data as well as information which have been transmitted. Complete certainty that no one who is not authorized will not be able to read a credit card number or important business information is a fundamental issue for the further Internet commercialization. According to the Ernst & Young report, 70% of people purchasing over the Internet feel insecure sending *on-line* their credit card number [88].

And one more significant factor restraining growth of the Internet and electronic commerce. This element is lack of common, easy access to the new electronic market. Currently in order to connect to the Internet, it is required usage of computers equipped with modem and special software. Such circumstances significantly narrow down the circle of Internet users to people who can operate computer as well as has income sufficient to buy a necessary equipment and can bear costs of monthly telecommunication charges. Situation like this can lead to a new kind of "discrimination" among people with lower income, who can be deprived of the access to the new electronic market [6]. So in order to allow for access to the Internet everyone willing to do it, not only selected group of people, implementation and dissemination of other than computer appliances is essential. They can be TV sets with special accessory or net-enabled phones. Such systems have been already functioning. An example can be WebTV which started in June 1995 and in April 1997 was bought by Microsoft. At the beginning of 1997 the number of their users was estimated to 50.000 [179]. Projections referring to the future of mentioned above appliances point to their dynamic growth in the next few years, what bodes well for the further electronic market development (see table 21).

Table 21. *Projections of Web appliances growth in U.S. (in millions)*

U.S. households with	1997	1998	1999	2000	2001
Net-enabled TV	0,1	0,4	0,9	3,2	8,1
Net-enabled phone	0,2	0,6	1,4	2,9	6
Either Net-enabled TV or phone	0,3	0,9	2,1	5,2	11,7
Both Net-enabled TV or phone	0	0,1	0,2	0,9	2,4

Source: Forrester Research in [313]

Two of mentioned above factors slowing the Internet's development i.e. payment and security systems will be in detail discussed in the next chapter.

3. Payment and security systems used over the Internet

3.1. General characterization of security systems

The most important aspect which is necessary to be solved for the quick development of electronic commerce is providing the Internet users, both consumers and vendors, with such security system or systems, which will guarantee that exchanged information will not be read or changed by anybody who is not its recipient. Without systems like that it is difficult to imagine that any private person or company will risk sending confidential information through open networks like the Internet. As long as companies used the Web only as a place for publishing their own "home pages", where there was no vulnerable information there was no need for any security systems. But when they started to treat the Web and the whole Internet as a marketing channel or a channel for information exchange between companies subsidiaries, it became obvious that further development is not possible without establishing proper security systems. They are necessary to guarantee privacy very widely, from e-mail massages to information important for electronic transactions. So its significance is really difficult to be overestimated.

Generally, to encrypt messages, two cryptosystems are used [314]. The first one is called **secret key cryptography** or **symmetric cryptography.** In this system a single key is used for the massage encryption and decryption. Thus, the sender and recipient of the message have to use the same key, what means that a key must be transmitted through the secure channel before encryption. Because of the necessity of secret key exchanging through a secure channel, sometimes with many recipients, this cryptosystem seems to be a very impractical one for the Internet usage. The second system, much more feasible, is called **public key cryptosystem** (PKCS) or **asymmetric cryptography**. In this system each user has two related complementary keys:

- public key,
- secret key (private key).

Each public key can be distributed via communication networks without any special protection. Everybody can use someone's public key to encrypt a message, but only a recipient can decrypt it, using its secret key. There is also a possibility for a message authentication, which can be achieved by means of **digital signature.** Signed message can be verified by anyone. The first step in creating digital signature is preparing **message digest**. It is created by passing the message through a one-way cryptography function (*hash function*). Such a function transforms a variable-size input into fixed-size string (e.g. 160-bit in SET). Hash function is called one-way, because it is impossible to invert it. Also, it is very important that it is computationally infeasible to create two identical message digests from original message. Message digest "represents" the whole message and is used to detect potential changes in it [244], [315]. To create digital signature, message digest is finally encrypted with sender's private key and is added to the encrypted message. Public key cryptography is also

used to create **digital envelope**. Digital envelope is used to "seal" a message in such a way that no one, but its recipient can open the digital envelope and read the message. In this method, the message to be sent, is encrypted with random generated secret key and then the secret key is encrypted with recipient public key. Recipient receives encrypted message and encrypted secret key [151].

There are also some problems with cryptosystems usage. Since cryptosystems can be used for many different purposes, also criminal ones, some countries introduced restrictions on its usage and export. Systems using " strong " encryption are, in some countries, under control. As a " strong " encryption system, in U.S. , are considered asymmetric algorithms at key sizes over 512 bits and symmetric algorithms at key size over 40 bits. The problem is that 40/512 cryptography is not considered to be too strong for a commercial use. The recommended one is at least 80/768 cryptography [243]. There are also countries, like Iran and France, where encryption usage is illegal [181].

3.2. Examples of security systems

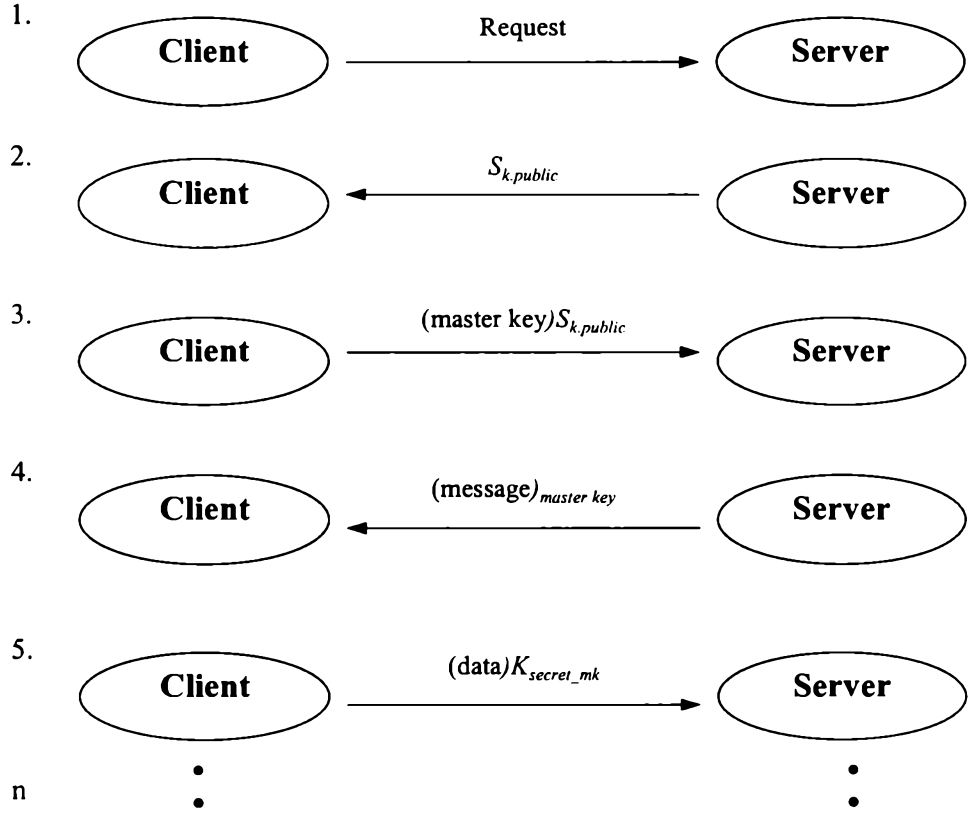
There are some implementations of both above mentioned cryptosystems. The best known worldwide example of the secret key cryptoysystem is **Data Encryption Standard** (DES), developed by IBM and approved by U.S. government in 1977 as official standard. DES has fixed key size of 56 bits and is used mainly by federal and financial institutions. Every five years DES has been recertified by U.S. government [18], [244].

As to public key cryptography, the best known standards are offered to developers of computer systems by RSA Data Security. PKCS standards introduced and developed by RSA are considered as the best one for providing Internet security [112]. Probably the widely known implementation of public-key technology, is created by Philip Zimmermann, **Pretty Good Privacy** (PGP). This system can be used to protect e-mails and data files with no need for secure channels for prior key exchange. Since public key encryption algorithm is comfortable for use, but much slower than secret key cryptography (DES is over 100 times faster than system developed by RSA), PGP combines both of them. Messages to be sent are first encrypted with conventional, temporary single key, which is next encrypted with recipient's public key (*digital envelope).* As a conventional key, PGP does not use DES, but different encryption algorithm called **International Data Encryption Standard** (IDEA). It uses longer, 128 bits key size, while its speed is similar to DES. Message digest is created with use of **MD5 Message Digest Algorithm**, developed in 1997 by Rivest from RSA Data Security [244]. Very important feature of Pretty Good Privacy is data compression which is made before encryption [314], [315].

There are also some protocols using public key cryptography for providing privacy over the Internet. One of the most widely known and used is **Secure Sockets Layer** (SSL) developed by Netscape Communications Corporation. This is a security protocol providing privacy for client/server applications, communicating over the Internet. It is an independent application and it can used together with other protocols as HTTP, FTP or Telnet. SSL provides security by encrypting the communication

channel between a client (e.g. Netscape Navigator) and a server. It allows to negotiate the keys used for encryption as well as for server and client (optional) authentication. The SSL protocol is composed of two layers. At the lowest level, layered on the top of transport protocol as TCP, is the **SSL Record Protocol**. On the top of the SSL Record layer operates **SSL Handshake Protocol**. This protocol is used for server/client authentication and establishing a protocol version: encryption algorithm and cryptographic keys before data are transmitted or received by an application protocol. In the SSL protocol, application data messages are carried by the Record Layer and are fragmented, compressed and encrypted. Let's take a look how the SSL works in practice (see Fig. 11).

Fig. 11: *The SSL protocol functioning*



Source: Own Source

Responding to the client's request, the server sends its public key together with its certificate and preferences referring to encryption. Receiving them, client generates special 48-bits secret key called **master key**. This key is next encrypted with server's public key and sent back. The server decrypts it and in order to authenticate itself sends a massage ciphered with the received master key. The next information transmitted between client and server are encrypted with secret keys derived from master

key. In the SSL protocol for key exchange, RSA cryptosystem is utilized. During the second phase for data encryption symmetric cryptography as RC2, RC4, IDEA, DES or triple-DES are used [108], [244]. It is worth mentioning that in June 1998, a researcher from Bell Labs found that is theoretically possible to decode an SSL session by sending a large number (about 1 million) of specially prepared messages [180].

Another protocol being used for providing security over the Internet is **Secure Hypertext Transfer Protocol** (S-HTTP). S-HTTP is a security-enhanced version of mentioned earlier HTTP protocol. It was originally developed by Enterprise Integration Technologies and commercially implemented by Terisa Systems, Inc. S-HTTP provides equal treatment to both the client and the server, although do not require establishing a public key from the latter one. In this protocol four modes are used for exchanging encrypting keys:

- method developed by RSA (public key cryptosystem),
- *out-band* (external key agreement),
- *in-band* (key sent in message during another session),
- the *Kerberos* method (special servers operating as "trusted third party" are used for secret key management and users authentication).

In S-HTTP for message encryption, the following cryptographic algorithms can be used: DES, triple-DES, DESX, IDEA, RC2 and CDMF. S-HTTP protocol and mentioned earlier SSL are not mutually exclusive. Both of them can co-exist in a complementary fashion by layering S-HTTP on top of SSL [103], although they use different encryption philosophies. The SSL encrypts the whole communication channel during data exchange, while S-HTTP ciphers separately every message [239], [244].

Another security protocol, **Secure Electronic Transaction** (SET), was jointly developed by competitors, Visa and MasterCard. SET protocol usage is limited to supporting the financial part of shopping. Its goal is providing a secure payment processing using bankcard products over open networks (like the Internet) and the private ones. Generally, the Secure Electronic Transaction protocol utilizes cryptography to:

- provide information security,
- ensure payment integrity,
- authenticate cardholder and merchant.

SET protocol uses both encryption methods: secret key cryptography and public key cryptography. In this protocol it is used a variety of digital signature called **dual signature**. A dual signature is generated by creating the message digest of two messages. In the next step two digests are linked together. Finally, the result message digest is computed and encrypted with the signer's private key [291].

Table 22. *Comparison of described security systems*

System name	Type of cryptography used		Purpose	Remarks
	Secret key	Public key		
DES	+	-	General use	-
IDEA	+	-	General use	-
SSL	+	+	General use	Protocol
S-HTTP	+	+	General use	Protocol
SET	+	+	Limited to payments	Protocol

Source: Own Source

Mentioned above methods for providing security do not comprise the whole subject matter, but they are only an epitome of some widely known implementations.

3.3. General characterization of payment systems

Apart from providing privacy and security there is one more issue which should be urgently solved in order to turn the World Wide Web and the whole Internet into a highly efficient electronic market. This element is reliable payment system or systems. Such a system should be [213] :

- scaleable,
- anonymous,
- secure.

The need for the system to be highly scaleable is very important, taking in consideration the fact that there are millions users of the Internet and their number is growing quickly and permanently. Anonymity of the system is also a very important feature, because the system must offer customers protection against attempts of information collection like amount of money they have spent, or types of goods they have purchased. Security of the payment system is its most important feature and this aspect was previously discussed.

There are about 50 proposals of Internet payment systems [218]. Some of them are being implemented, while other ones are only projects. Some concepts as First Bank of Internet (FBOI) have already finished their short life. Such a fact is nothing unusual, since payment systems as the whole Internet are very dynamic issue and are changing almost from day to day. In any case, convenient and highly secure payment systems are necessary for commercial development of the Internet.

All currently proposed Internet payment systems can be divided into four groups [60]:

- **Smart card based systems**
  Such cards use built-in microprocessor for storage data about amount of money gathered on it. In this method authentication is separated from payment process.

- **Credit card based systems**
  The core of such a system is secure and efficient method of credit card details transmission.

- **Digitized "e-cash" systems**
  Such a system payment is based on transmitting encoded digital tokens which represent equivalent of real money.

- **Payment clearing systems**
  In systems of this type, both buyer and seller use "the third party" for exchange information with each other. Instructions permitting for making payment are sent via this third party (*payment clearer*), which verifies them.

3.4. Examples of payment systems

The system called **Mondex** that has been developed by two British banks: National Westminster Bank and Midland Bank, is a very good example of the smart card based system. Mondex card is a ordinary plastic card with built-in microprocessor. Microprocessor has been programmed to serve as an "electronic purse". It can be loaded with money which is stored until the payment is made. Up to five currencies can be stored electronically on Mondex card. Money can be loaded onto the Mondex card at home at specially adapted phones or pay phones equipped with card readers which allow for making withdrawal from bank. Making direct bank deposits is possible as well. The Modex card allows for settling accounts between people. "The electronic wallet" developed by Mondex can be used for this purpose as it enables transfer of money from one card to another. It is also possible to make payment for shopping by means of retail terminals equipped with Mondex card reader. The most interesting for us is possibility of using Mondex card for making payment over the Internet. Special personal computer keyboards with an integrated card reader can be used for this purpose. First such a keyboard was presented by Hewlett-Packard in June 1997, at PC Expo in New York . Also, balance on the card can be easily checked. Mondex developed for this purpose an electronic key-tag equipped with card reader. There is also a security system on Mondex card. It enables its user to lock the card, using a personal code so that only the card's owner can use the money on it or check the transaction log. The first trial of Mondex card took place in 1992 in London. Starting from October 1996 a pilot program was launched in Hong Kong and by March 1997 about 40.000 cards was issued. Because of fact that card was

there still tested, the maximum value which could be stored on it was limited to 3000 Hong Kong Dollars [128], [157], [192].

Jointly prepared by competitors, Visa and MasterCard, payment system based on discussed earlier **SET** (Secure Electronic Transaction) protocol, can serve as probably the best example of a credit card based system. After a period of time during which Visa and MasterCard worked separately on their own payment systems, they finally decided to work together on creating single standard. At the beginning of 1996 also third leader of credit cards market, American Express, joined them as well. Also companies as IBM or Netscape Communications worked on standard developing.

System using SET protocol is not a first attempt of utilizing credit cards for payment making over the Internet. Many companies worldwide uses payment systems based on transmission of credit card details by means of phone or fax. Although sending such an information is a source of additional costs and is not specially comfortable for customers. Also e-mail and "secure servers" (supporting SSL) are used for this purpose. It is expected that SET protocol based system will change this situation, providing both consumers and vendors with good, secure credit card based payment system. The SET system was expected to be fully ready in the fourth quarter of 1996. Unfortunately, until the end of 1997 it was still not commonly used. In April 1997, IBM launched **Net.Commerce**, the first Internet merchant server with support for SET [141]. In July 1997, Bank of America and Alaska Airlines announced plans of a pilot project relating to utilization of SET protocol for payments over the Internet [142]. Also in July, Seoul Bank joined another SET pilot project conducted by Visa [143]. At the end of 1997, Visa, MasterCard, American Express and JCB Company established a group called SETCo, which goal is management the evolution as well as promotion of the SET specification. SETCo decided also to create additional organization (Industry Root Key Certificate Authority) which will manage the software necessary for verification of transactions [148]. In September 1998, also Microsoft decided to support SET standard [216].

Let's shortly review the payment processing in system based on the SET protocol. Before the initial purchase can be made, every cardholder must *on-line* register its card with a Certificate Authority. This process comprises filling out the registration form (received from CA) on a computer screen with basic information as: name, card account number, card expiration date, account billing address etc. Information given by customer is encrypted and then sent back to a Certificate Authority. In the next step the CA contacts bank or other financial institution, which issued a card in order to verify received information. When the process is completed, cardholder receives a digital certificate proving that his or her card is valid. Having such certificate, the customer can begin shopping. In the same way merchants, who want to conduct electronic commerce, have to register.

Let's look at the general overview of transaction based on the SET protocol usage. After choosing a product from electronic catalog and filling out the order form, a customer software sends a request to the merchant. Receiving it merchant assigns to the request an individual transaction number and along with its certificate transmits encrypted back. The customer software checks validity of certificate and

then creates two messages: Order Information and Payment Instructions. Both of them, along with cardholder certificate are encrypted transmitted to the merchant. Its software verifies the certificate and performs the authorization of payment at financial institution which issued customer's bankcard. After approval completing, the order is processed and confirmed.

SET payment system is composed of the following participants:

- **Cardholder**
  An authorized holder of a payment card issued by a bank or another financial organization.

- **Issuer**
  A bank or another financial organization which established an account for card holder and issued a payment card. It guarantees the payment of all approved transactions.

- **Merchant**
  Offers customers goods, services or information and accepts *on-line* payment for them.

- **Acquirer**
  A bank or another financial organization which established an account with a merchant and supports merchant, providing service necessary for processing payment card based transactions.

- **Payment Gateway**
  An appliance, in most cases operated by Acquirer, which processes all payment instructions and messages.

- **Brand**
  Payment cards associations, founded financial organizations. Their goal is protecting and advertising the payment card brands. They also create rules for payment cards acceptance and usage. Another their role is interaction with both merchants and cardholders [291].

Generally, the SET standard is regarded as a safer solution than commonly used payment system based on the SSL protocol [13], [295]. This last standard is considered as an interim solution [154]. However, critics of the SET system point to its slow performance, because the whole transaction can last up to 30 seconds. It is also underlined that setting up infrastructure necessary for SET system can cost banks about $1 million and additionally $3 to $5 for creating an account for each of customers [202].

As the digitized "e-cash" systems are concerned, one of the most widely known example is developed by DigiCash, system called Ecash. This system is composed of three elements:

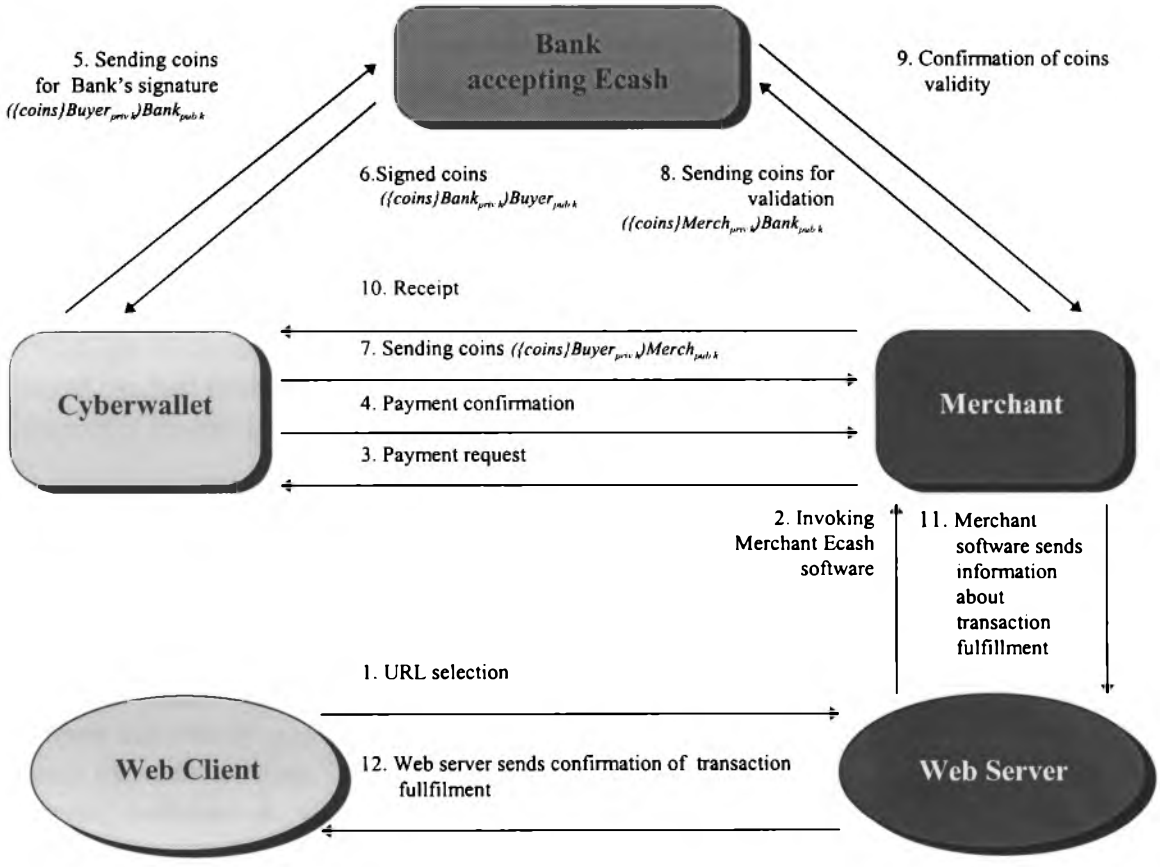
- **Banks**
  They validate existing coins, gather information about coins which have been already "used" and exchange real money for Ecash.

- **Buyers**
  They have accounts with a bank and can withdraw or deposit Ecash coins there.

- **Merchants**
  They accept Ecash coins as a payment for goods or services.

Both buyers and merchants who want to use Ecash system must use a special software. The buyers' one is called a **cyberwallet** and it is necessary for withdrawing and depositing coins from a bank and for paying or receiving coins from merchant. In order to guarantee the security of transactions, Ecash uses RSA public-key cryptography. The whole process of shopping with Ecash system is showed on Fig. 12.

Fig. 12: *Shopping with Ecash system*



Source: based on [213]

1. Customer selects an URL representing that item he/she wants to buy and sends message requesting the URL to the merchant's Web server.
2. It invokes the merchant's Ecash software.
3. The merchant's software contacts with buyer's cyberwallet asking for a payment.
4. After receiving the request, a buyer is asked about payment confirmation.
5. When confirmation is made, cyberwallet generates random 100 bit serial numbers for coins representing necessary amount of money. Such a long numbers guarantee that no one will ever able to generate the same one. Next serial numbers are blinded by multiplying them by a random factor. After completion of this procedure, coins are sent to the bank, earlier signed with buyer's private key and encrypted with the bank's public key.
6. Bank checks signature, debits buyer's account, signs the coins with its private key and encrypted with buyer's public key sends back.
7. Buyer's software decrypts received message and removes "blind". Next coins are encrypted with merchant's public key and sent to the merchant.
8. After receiving coins merchant's software contacts bank to verify their validity and check if they have not been spent earlier. In order to do it, merchant packages the coins, signs them with his/her private key, encrypts with the bank's public key and finally sends it to the bank.
9. To validate the coins bank checks the serial number in the database of all the serial numbers ever spent and returned to the bank. When validation is completed, the value of the coins is credited to the merchant's account.
   Since coins are good for one transaction only, they are "destroyed" and their serial number is added to the database of spent coins. The merchant receives message about successful deposit.
10. Buyer's cyberwallet receives signed receipt.
11. Information about successful transaction fulfillment is sent by Ecash software to the Web server.
12. Web server transmits information about transaction to the Web client. Also ordered product is sent to the buyer. In case when it is article or software, buyer can receive it *on-line* [213].

Very important feature of Ecash is providing with full anonymity of transaction and its security. Because of "blinding" serial number of coins, bank is not able to control the transaction and gather information about them (see pp. 5-7). The only, but very important problem can be in the future possible size of the databases of spent coins, especially when a large number of people start using this system.

There is one more Internet payment system to be discussed. The most commonly quoted example of payment clearing system is the First Virtual Internet Payment System. This is system of high simplicity, which requires no special hardware, software or encryption. In order to start shopping, buyer must register his/her credit card with the First Virtual to receive individual number called Virtual PIN (account ID). Process of registering is made over the telephone. When the customer wants to pay for a goods or service he or she sends the seller Virtual PIN instead of a credit card number. It eliminates the risk of spotting it by anybody who is not

authorized. After receiving it, seller sends a message to the First Virtual containing buyer's Virtual PIN and an amount to be paid.

Table 23. *Requirements according to usage of the First Virtual Internet Payment System*

Buyer	Seller
Must have an e-mail address	Must have a bank account that accepts direct deposit
Must have valid Visa or MasterCard credit card	Must send a check to First Virtual for the $10,00

Source: [104]

Next, the First Virtual which plays the role of "trusted third party", sends a buyer an e-mail requesting confirmation of purchase. After receiving it, customer's credit card is charged by the First Virtual, while both buyer and seller are notified about it via e-mail [104].

Table 24. *Comparison of described the Internet payment methods.*

Payment system name	Type of payment system	In use	Project	Remarks
Mondex	smart card	-	+	System was expected to be implemented at the beginning of 1997. At the end of 1998, still in testing phase.
System based on the **SET** protocol	credit card	-	+	System was expected to be ready in the forth quarter of 1996. At the end of 1998, still in testing phase.
Ecash (DigiCash)	electronic cash	+	-	-
First Virtual Internet Payment	clearing system	+	-	-

Source: Own Source

Described above payment systems are not the only ones. There are other concepts as e.g. electronic checks. It's worth underlining that according to opinion of some authors, who seem to be right, not any special payment systems (e.g. e-cash) are necessary to be introduced for the further development of electronic commerce, since existing systems (based on credit card utilization) are sufficient (see [249]). Also some banks (e.g. Mercantile Bank from U.S.) come to the same conclusion, finishing Ecash pilot projects[17] [66]. It is mainly a result of radical changes in customers attitude towards credit cards usage over the Internet, caused mainly low level of frauds. Credit card fraud which take place on the Internet, are reported to be less than 1%, what is much lower than *off-line* [89].

[17] Three European banks, Credit Suisse, Deutsche Bank and the Bank of Austria, continue Ecash projects.

4. Possibilities of the Internet's exploitation for business purpose

4.1. The main areas of the Internet's usage in company's performance

The Internet and particularly the World Wide Web provide organizations with many opportunities of far more efficient, effective or even innovative performance. In fact all areas of their functioning can be improved by means of the Internet utilization. It requires implementation deep changes in so far used strategy, redesign of the organizational structures as well as carrying out employees' training. Ten basic elements of the business value of electronic commerce and more generally the Internet for organizations have been identified in [27]. They have been divided into three groups depending on their impact on a company (see table 25).

Table 25. *The components of the business value of electronic commerce and the Internet*

Improvement of organizations performance	Organization's transformation	Redefining organizational performance
• product promotion, • new sales channel, • direct savings, • time to market, • customer service, • building a brand or corporate image.	• new technologies learning and experimenting with new organizational structures, • customer relationships.	• new product capabilities, • new business models.

Source: based on [27]

As most of mentioned above elements will be discussed in detail in the chapter 5, below we will review them very generally only.

Referring to **product promotion**, particularly the WWW provides organizations with many opportunities in that regard. The basic features of *on-line* promotion comprise: reaching customers with information about products in an easy way, permanent availability, relatively low costs, attractive multimedial form of advertisements or possibilities of information customization, based on customer's profile.

Utilization of the Internet as **new sales channel**, it is mainly opportunity of reaching customers in a direct way with both tangible and intangible products, possi-

bility of their customization or enriching them with additional information. In many cases there is also a possibility of completion the whole transaction *on-line*.

Direct savings relate to possibility of automation of many elements of business processes (e.g. usage of intelligent agents for customer service). They also result from elimination of intermediaries, reducing promotional costs over the Internet, diminishing costs of marketing research, lowering expenditures of employees recruitment. Utilization of the Internet and intranets means also lower costs of information flow being a result of the common usage of e-mail instead of phones or faxes, but also possibility of organizing the Internet-based teleconferences, utilizing public telecommunication infrastructure.

Reduction of **time to market** is another business value of the Internet usage. It relates mainly to intangible products as software or information, but not only, since many kind of services can be easily and quickly delivered to the market as well. Also referring to tangible products, the Internet allows for significant reduction of overall time to market, lowering times necessary for completing processes as procurement, production or designing [302].

As far as **customer service** is concerned, the Internet development provides companies with new unusual opportunities of its betterment and expanding its scope. "Around the clock" customer support, without engagement of human factor, is not a problem. The basic role play WWW pages, e-mail and other, based on it tools.

Because of easy access to consumers living worldwide, the Internet gives possibilities of building and strengthen **brand or corporate image**. Particularly important are WWW pages, but also other Internet tools are very useful for this purpose. In a sense, the Internet forces organizations to **learn new technologies**, but also gives them opportunity to **experiment with new organizational structures** in order to adjust them to the requirements of rapidly changing business environment. Referring to those issues, it is worth to mention an Intranet or virtual organization, which will be discussed in the next subsections. Also process orientation and related to it business process reengineering are the results of new organizational approach.

The Internet allows also organizations for establishing a quite new **relationship with customers**. This new approach means mainly abandoning of so far used philosophy in which customer was treated as an element of more or less homogenous group and replacing it by personal relationship, based on utilization of information about each one needs as well as preferences, gathered in databases.

The Internet provides also with **new product capabilities**. It relates to opportunities of providing consumers with new products, specific for the Internet, but mainly to possibility of easy products customization, comprising tangible and intangible goods as well as all kind of services.

Possibility of **new business models** application it is a very important element resulting from utilization of the Internet and electronic commerce. It mainly relates to opportunities of direct access to consumers, and what very often results in possibilities of intermediaries elimination, in the form they currently exist on the marketplace. Mentioned earlier virtual organizations are also the manifestation of new business model approach.

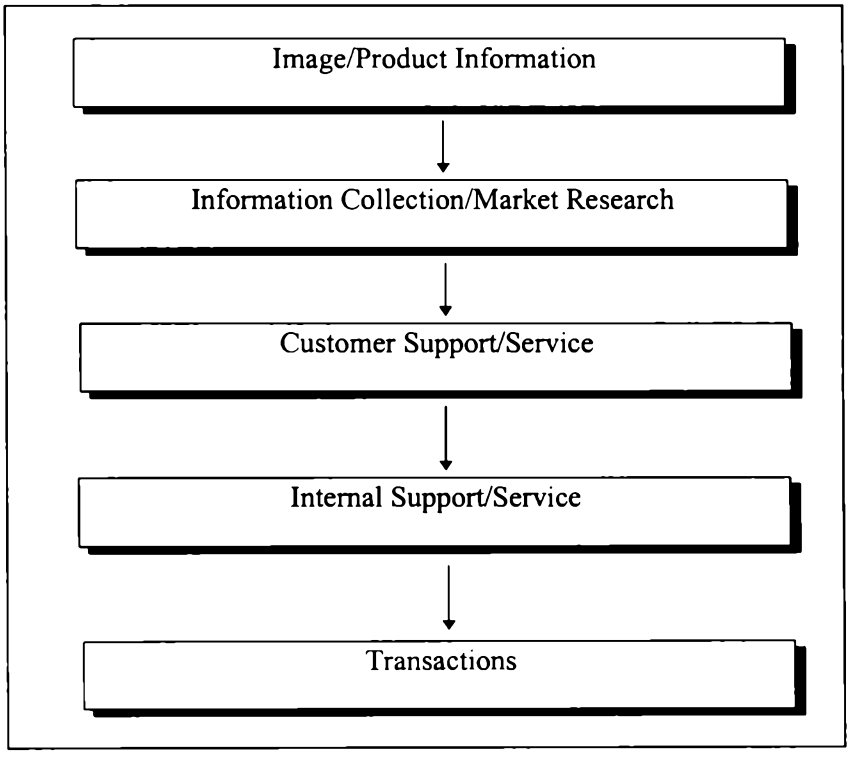
4.2. Business models exploited by organizations over the Internet

Conducting various forms of business activity over the Internet, companies generally utilize two business models [155]:

- information,
- transaction.

In the information model companies use own WWW pages mainly to provide customers with less or more detailed information about their business activity as well as offered products and services. It becomes more and more common practice that TV or press advertisements which can't provide customers with full information about specific product or service, direct them to specific WWW pages containing details they are interested in. In case when information they find is insufficient, they can easily contact company by means of e-mail and receive additional explanations. This type of business model is the most common in the current state of electronic markets development, and such a way of the Internet utilization is characteristic mainly for large and known organizations, which basic business activity takes place off-line. It is observed that companies that started with Web sites based on information model with a passage of time expand their capabilities, evaluating to offering *on-line* transactions (see Fig. 13).

Fig. 13: *Information-to-transaction evolutionary path*

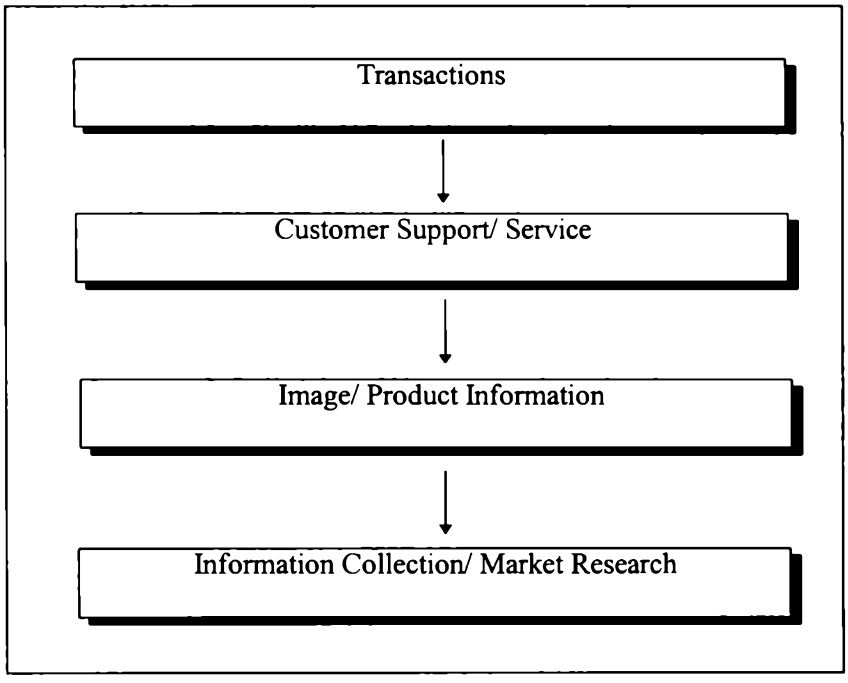


Source: [155]

The second, transaction model is mainly preferred by small companies which conduct their business activity purely on the Internet. They take advantage of fact that because of the Internet there are low barriers of entry to the global electronic market, so even small firms at low start-up costs can compete on equal terms with the largest and most famous organizations. In this moment it is worth to focus on one extremely important aspect which relates to transaction model. Namely, in situation when establishing the Internet presence is easy (computer, modem and software), but when at the same time it is also extremely difficult to verify if specific Web site belongs to real company or to group of frauds, trusted, worldwide-known brand names really matter [249]. This observation is fully confirmed by results Ernst & Young survey. As the most critical factors which impact on consumers purchasing decisions were found: knowing product brand name (69%) and familiarity with retailer (64%) [88].

It's obvious that transaction model is also applied by large organizations, which conduct their basic business activity in real world and followed evolutionary path starting from solely information model. Companies that started with *on-line* transactions, usually successively develop their Web sites by embedding new capabilities (see Fig. 14).

Fig. 14: *Transaction-to-information evolutionary path*



Source: [155]

There are various motivations for adopting by companies transaction model and involving in electronic commerce. As retailers are considered, the most important goals are presented in table 26.

Table 26. *Basic goals of retailers for electronic commerce*

Goals for electronic commerce	Percentage
Market expansion	69%
Customer retention	61%
Differentiation	58%
Cost reduction	46%
Competitive positioning	42%

Source: [88]

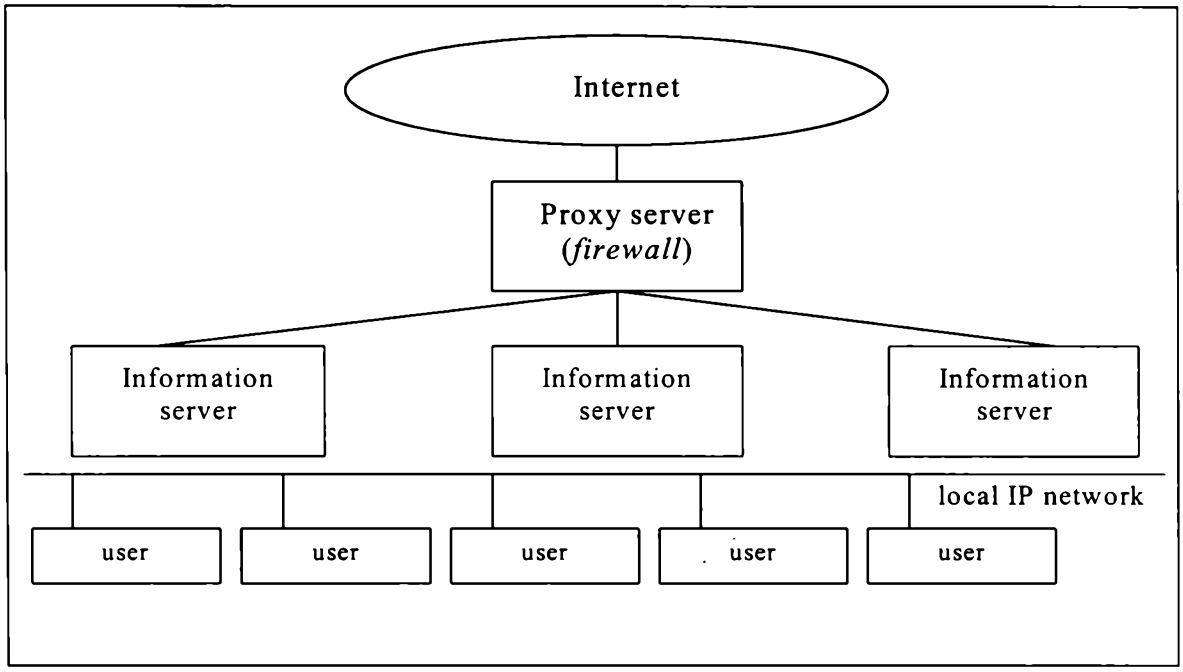
As it is clearly seen, market expansion is the basic goal for 69% of retailers, deciding about their involvement in electronic commerce. Because of this, one issue related to it, is worth to be underlined. It seems that such companies' attitude results from quite common conviction that because of the Internet it is possible, at low costs, easy access to functioning for 24 hours global marketplace, where wait 150 million[18] ready for shopping potential customers. It is very illusory opinion. Electronic market is really global and open "round-the-clock", but mentioned above 150 million people surf through thousands of existing Web sites, containing a lot of interesting offers. So, in order to attract only a part of them to own WWW pages and next convince to purchase product or service, company's offer has to be really interesting as well as valuable for customer [184]. It must contain something what L. Chase describes as *cyberhook* [44].

4.3. Intranet

Looking at the huge development and success of the Internet, many companies realized that the same technology could be implemented inside their boundaries in order to support internal activities (see Fig. 15). Such private network, based on TCP/IP protocol, established inside a company and using the same kind of software as the Internet is called an **Intranet**. It can be isolated from the Internet or connected in a controlled way (through a *firewall*) [195].

[18] At the end of December 1998

Fig. 15: *The Intranet model*



Source: [195]

There are three basic features of an Intranet:

- application of the Internet technologies,
- usage mostly for company's internal access,
- utilization mainly for firm's interior procedures and processes.

It turned out that Web technology is a powerful and inexpensive alternative to other forms of communication inside the company. It has all advantages of Internet technology, but lacks its most important disadvantages. Since Intranet operates on internal network (LAN or WAN), there is no problem with data security, because such a network is separated from the Internet by firewalls. Also speed of data exchange is much higher because of broad bandwidth. The last important feature is full control over the network what guarantees its reliability.

Rate of an Intranet increase is really impressive. Some consultants predict that soon it will be ten times bigger than the Internet [46]. Also predictions related to money spent by companies on Intranet development clearly point out that it is not a fad, but that they see it as important element of companies in the very close future (see table 27).

Table 27: *Intranet Market*

Product segment:	1996	1997
Hardware	$1,50 billion	$2,43 billion
Software	$1,08 billion	$2,10 billion
Development, integration, programming	$660 million	$1,79 billion
Training	$460 million	$1,22 billion
Maintenance, administration	$410 million	$835 million
Total	**$4,11 billion**	**$8,46 billion**

Source: CAP Ventures, April 1997 in [312]

Almost all industries have been already involved in an Intranet usage, although percentage of involvement is different (see table 28).

Table 28. *Breakdown of sites with Intranets*

Industry Sector	Percent (%) with Intranets
Government	6
Manufacturing	13
Medical	1
Services	32
Education	15
Wholesale/Retail	10
Agricultural/Mining/Construction	8
Transportation/Utilities	8
Financial/Insurance/Real Estate	7

Source: Computer Intelligence Projected Database, February 1997 in [311]

What makes an Intranet so interesting to many companies around the world? Probably the most important is fact that an Intranet uses inexpensive software, mainly shareware or freeware, with an intuitive graphical user interface. There are many other reasons and they will be described below.

Most companies have problems with processing and exchanging information, documents management etc. which occur because of:

- various file formats used,
- expensive and frequently upgraded publishing and viewing tools,
- producing a lot of printing documents, very often not used,
- out-of-date information gathered in obsolete systems,
- difficulties of access to most important business information,
- duplication of information "flowing" across company's network.

Most of above mentioned problems can be easily solved by implementing Web technology inside a company. This technology is based on client-server applications and has many advantages. The most important are as follows:

- **Cross-platform connectivity**
  All types of browsers i.e. UNIX, Mac and PC can access necessary information.

- **Global access**
  Documents can be requested from any network which uses TCP/IP protocol. It can be private one as LAN or global as the Internet.

- **Ease of use**
  Necessary files can accessed by clicking hypertext link.

- **Flexibility**
  There is no problem with accessing various server types as Web, Usenet, gopher, ftp, and others. Web servers provide also interface to other applications as databases.

- **Open systems**
  Any software which follows TCP/IP protocol can be used.

Described above advantages of Web technology used on internal networks has big potential which can be used in many ways. The most important of them are:

- **Management systems**
  An Intranet can be easily used for supporting management process since it allows for example to access necessary data, creating and viewing progress reports, preparing necessary charts, publishing and distributing meeting minutes etc.

- **Collaborative Workgroups/Interdepartmental Communication**
  An Intranet can be used for exchanging ideas, sketches and other materials with other departments. Creating "home pages" for each department allows other employees for easy access to such information as: department mission, its staff, current projects etc.

- **On-line References**
  Publishing *on-line* materials as work instructions, information about products, customers, suppliers, company policies, telephone directories, procedures etc. company diminishes amount of printed documents used and makes them easily accessed as well as keep them up to date.

- **Interactive Communication**
  An Intranet allows for easy automatic gathering of different kind of information from employees by filling *on-line* fill-out forms and storing results in databases.

- **Training**
  Web technology permits for easy *on-line* employees training as e.g. seminars with multimedia presentation which can be led by Human Resources.

- **Customer Support**
  An Intranet gives company representatives easy access to all necessary information, which can be used in customer support process [245].

Web technology is also a very good tool for creating, in the longer perspective, the virtual office. Although creating entirely paperless office is not feasible, but very important goals can be achieved. Web technology allows for:

- significant cost reduction because of diminishing expenses linked with printing and copying various documents,

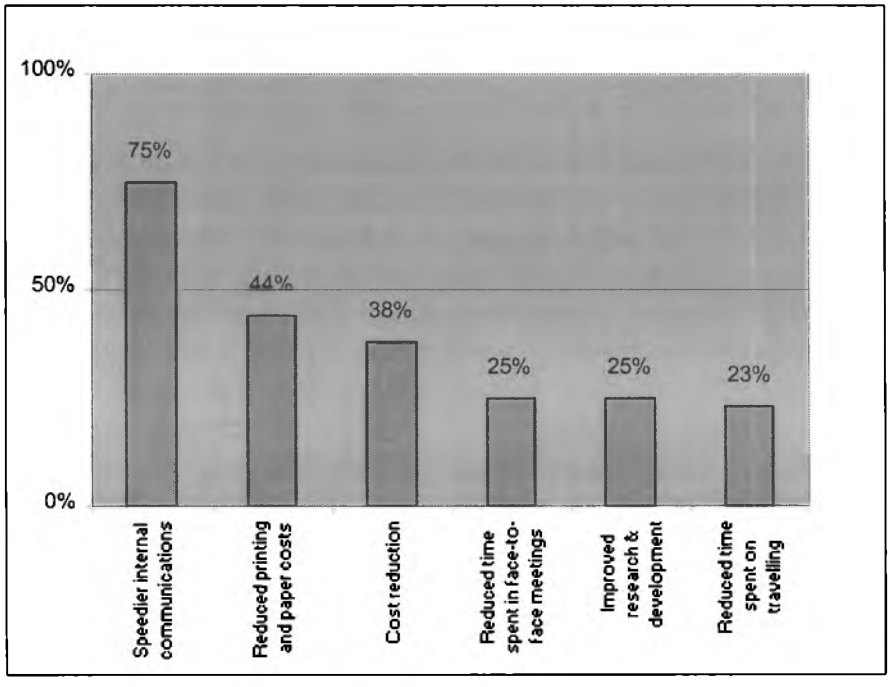
- significant reduction of stored files and space required for it,

- improved employees productivity, because of easier and quicker access to necessary information,

- improved control over stored information, because of its single-point of storage and access [245], [308].

Above, we have described potential advantages of intranets usage by companies. Let's take a look how assess achieved benefits from Intranets, organizations that have already established them. According to study conducted by The Harris Research Centre in September 1997 among 101 UK companies, as the most important achievement 75% of respondents recognized speeder internal communications. Next significant benefits comprise: reducing printing and paper costs (44%) as well as cost reduction (38%) (see Fig. 16).

Fig. 16: *Benefits achieved from Intranet*



Source: [162]

Described above ideas have been implemented in many companies including the biggest ones as: Ford Motor Co., Visa International, Turner Broadcasting, Federal Express, AT&T, Digital Equipment Corporation, Boeing Co. and many more.

Boeing Co. started thinking about implementing Web technology into its internal networks very early, in 1993. In 1995, corporation had 300 servers being used by 20.000 employees. It was expected that by the end of 1996 at least 80 % of all 96.000 U.S. Boeing employees will have access to company's intranet. Although it is difficult to quantify a return on investment referring to an intranet, it was obvious that comparing to other systems, system based on Web technology can be characterized as low cost and highly flexible. Since applied technology matures, Boeing is continuously looking for expanding its usage [191]. Also Digital Equipment Corporation expands its Intranet in a very impressive way. At the end of 1996 company had 1.300 Web servers containing 900.000 URLs and about 45.000 Web users [149]. Comparing to these numbers data from Federal Express are not very impressive right now. In the 1996 company had 60 Web sites but company intends to equip their 30.000 employees with Web browsers to let them access new sites which will be established in company's headquarters. Very impressive is Intranet in Silicon Graphics Inc., where 7.200 employees can access 144.000 Web pages gathered on 800 internal Web sites [58]. Also Europeans companies perceive benefits of Intranets' usage. Olivetti Ricerca which is the independent research department of the Olivetti Group, found the Intranet as very useful for its 600 engineers working in seven laboratories, scattered around Italy. They use it for exchanging ideas, experimenting with new systems and finding required information [252].

All above presented facts and figures clearly point out the importance and potential which contains an Intranet.

4.4. Virtual organization

Before we will concentrate on issues relating directly to utilization of the Internet for marketing activities, one more extremely important aspect is worth to be briefly discussed. This issue is mentioned earlier role of the Internet in creating new forms of organizational performance, which example can be virtual organizations. Application of virtuality concept to companies seems to be of big importance in the situation of rapid changes taking place in contemporary organizations' business environment which require from them great flexibility and ability for quick response to customers expectations.

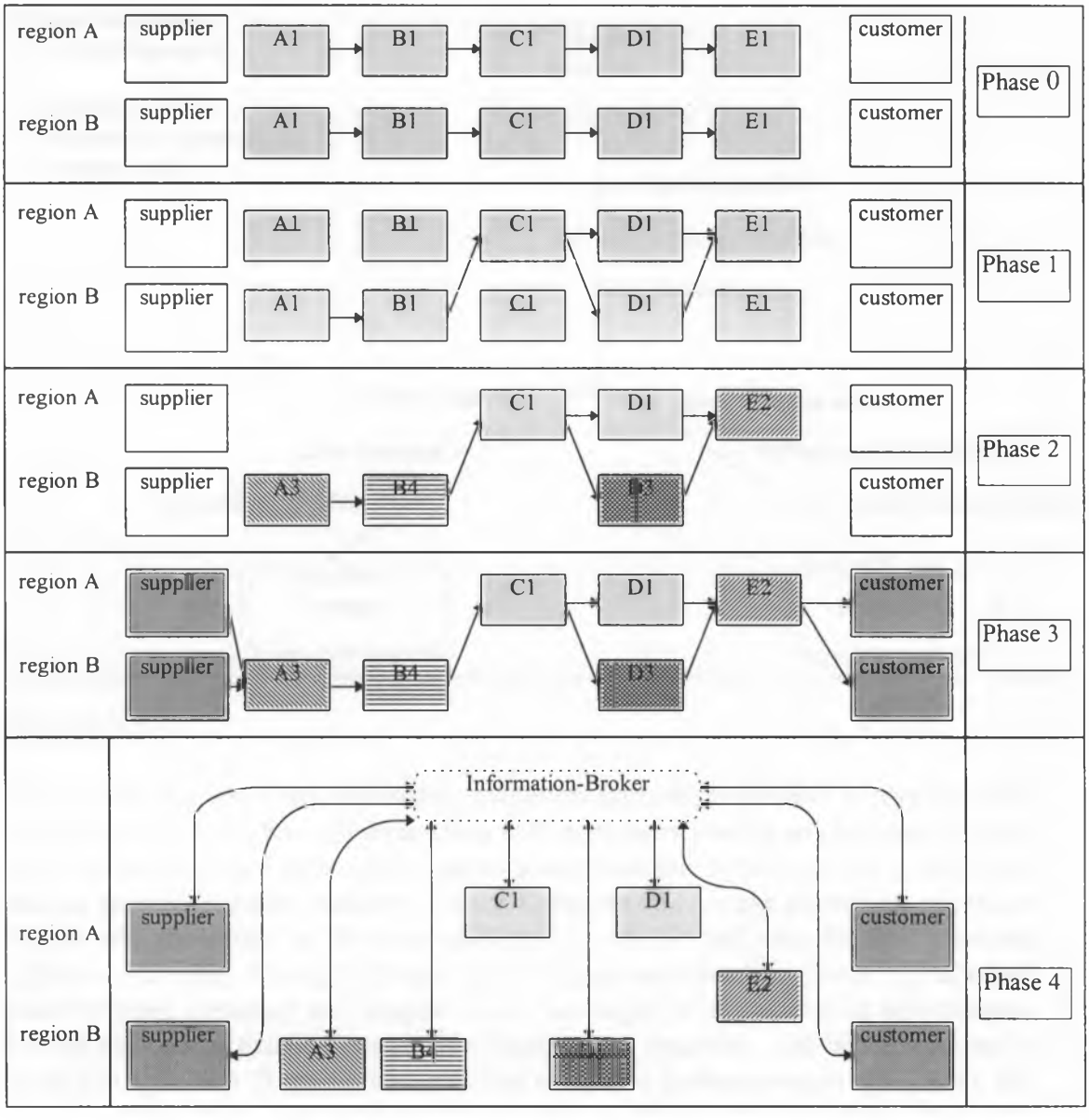
The key goal of the virtual organization (VO) is achieving maximal agility by delivering the highest quality product or service to specified place, at the shortest possible time [177]. The reason of usage the term "virtual organization" (*virtual corporation, virtual enterprise*) is fact that it utilizes knowledge or resources from outside as its own to deliver goods or services to the marketplace [253]. According to Arnold virtual organization can be defined as " *network of independent real world companies combining their skills and resources to achieve common goals, linked information technology in order to coordinate their activities and to avoid any hierarchy or vertical integration* " [289].
Two additional features are characterize virtual organization :

- time limit of its existence[19] (caused by fulfillment of business purpose),
- appearing for external observer as a unitary company.

On the way towards virtual organization five phases of company's structural changes take place (see Fig. 17). Phase 0 shows vertically integrated company with reduced number of business units because of concentration separate activities in various geographical regions. Company moves to phase 1 by concentrating some of its business activities in one place. Evolution to the phase 2 takes place when some outsourcing decisions are made and in this moment network of companies delivering goods or services to the marketplace is created. This phase requires usage of information technology as e.g. EDI. In the phase 3 involving customers and/or suppliers into the value adding process takes place. Reaching final phase 4, company can reduce its activities to the coordination function and behaves as "information broker". It worth underlining that there is a certain risk which emerges at this moment. Company who got rid of its core competencies won't be able to proper differentiation. So, because of this in some cases it is better for company not to discard of the most important competencies, leaving "brokerage" for less important activities.

[19] According to some authors virtual organizations can also exist on a long-lasting base [32]

Fig. 17: *Evolution towards the virtual organization*



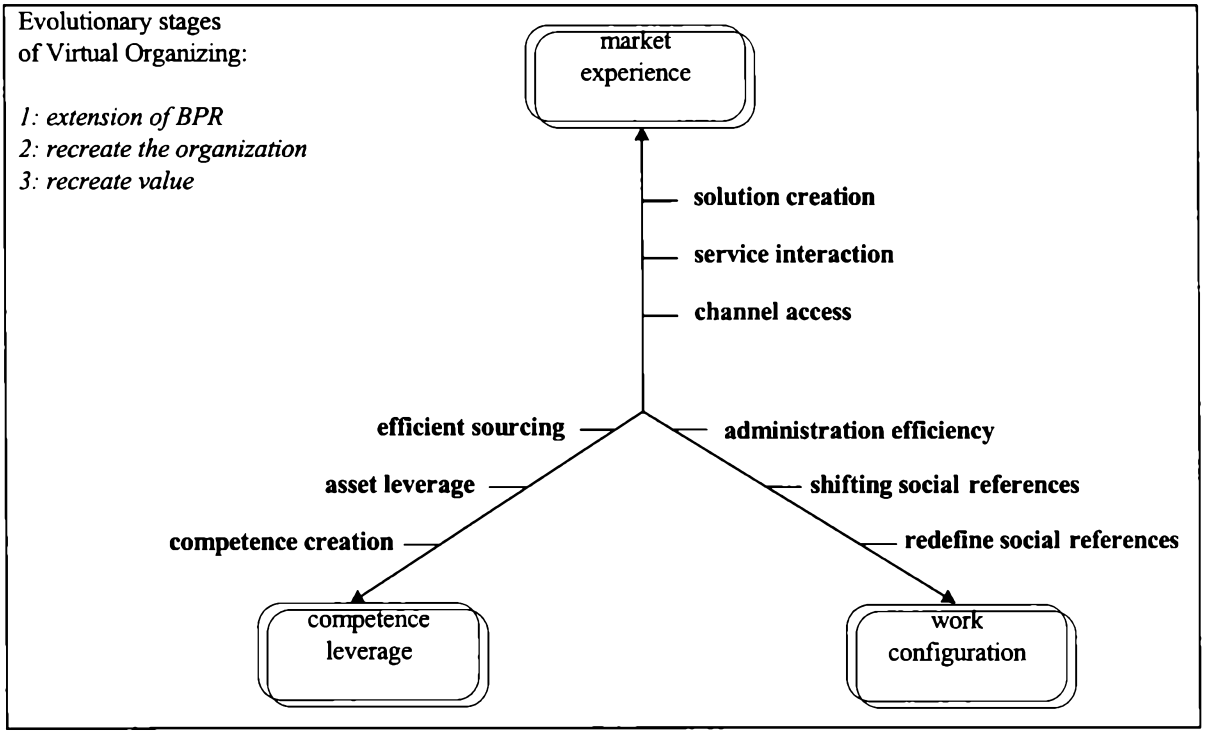
Source: [253]

Apart from the structural aspect of virtual organization, presented above, there are also a functional ones. Venkatraman states that company passes through three stages of virtualness. Evolution through these stages takes place in three dimensions (see Fig. 18):

- market experience,
- work configuration,
- competence leverage.

The goal is achieving resources, market and process efficiency.

Fig. 18: *Virtual Organizing: three dimensions and three stages*



Source: [253]

On the market experience dimension, evolution starts from *channel access* (sales of goods and services), through interaction with customers leading to proactive product development (*service interaction*) and to active customer's involvement in the value adding process (*solution creation*) finally. Competence leverage dimension evolution begins with the choice of the best suppliers of materials and semi-finished products (*efficient sourcing*), through stronger capital engagement resulting in redistribution of tasks between customer and supplier (*asset leverage*) to acquisition of new competencies because of existing partnership (*competence creation*). The last dimension is work configuration. It starts from efficient processes (*administration efficiency*). Involving information and communication systems allows for employees empowerment and enhancement of their independence (*shifting social references*). Further employees evolution into the legal independence can lead to establishing their position as an independent expert, cooperating with company (*redefine social references*). In this stage of evolution there is no place for corporation hierarchical system. Generally greater virtualness, in described dimensions, can be obtained by:

- concentration on most important competencies,
- Business Process Reengineering, ,
- outsourcing.

Achieving greater virtualness is not feasible without strong support of information technology e.g. EDI, teleworking. WANs etc. As it was mentioned earlier,

particularly important is the role of the Internet. Without its usage, cooperation in project planning and controlling, project teams coordination or documents exchange would be too expensive, since proprietary networks would have to be used instead [253], [305].

4.5. Internet's exploitation in various areas of companies' performance - current state and perspectives for the future

As we have shown earlier, there are numerous potential opportunities of the Internet utilization in various areas of organizations performance. The important issue is, if companies have been already exploiting them and to what extent. The results of surveys as well as studies conducted by various people and institutions dealing with this issue can provide with some answers.

In 1997, American Management Association with cooperation of Tierney & Partners, conducted in 656 companies survey devoted to the utilization of the Internet for the business purpose in U.S. Let's review some key findings. It turned out that about 90% of surveyed companies had been already using the Internet. Of course, the extent of this usage is different, however organizations predict that it will significantly grow the next two years (see table 29).

Table 29. *Intensity of the Internet usage by companies*

Organizational use of the Internet	Today	In 24 months	Growth
Heavy	6%	39%	602%
Moderate	19%	43%	122%
Occasional	32%	10%	-70%
Minimal	33%	2%	-94%
No usage	9%	1%	-93%

Source: [9]

The crucial issue is organization's evaluation of the Internet's importance for its performance. The study concluded that 62% of respondents consider it as critical or at least useful information technology. Only 4% of them regard the Internet as a "hype" and 1% as not a useful (see table 30).

Table 30. *The Internet and its significance for companies*

Importance of the Internet to organizations	% surveyed organizations
Critical information technology	13
Another useful information technology	49
Not a useful information technology	1
Too early to say	29
Mostly hype	4
Don't know/ not sure	3

Source: [9]

Since most of American companies have been already aware of the Internet's importance and use it, lets review its utilization for the specific business activities. According to the study results, the Internet is most often used for information retrieval (59%) and as source technical support (44%). Also very significant is its utilization in marketing process (40%) - table 31.

Table 31. *Organizational use of the Internet for specific activities*

Type of activity	Today	In 2 years	Percentage of growth in 2 years
Communicating financial information	13%	36%	187%
Delivering customer support/ services	22%	71%	215%
Direct sales to customers	11%	44%	309%
Distribution channel for products/ services	14%	50%	251%
Distribution of corporate news	30%	67%	123%
Electronic bulletin boards	25%	58%	136%
Electronic data interchange (EDI)	18%	58%	228%
Electronic publication	16%	43%	175%
Employees training/ continuing education	8%	41%	402%
Information retrieval	59%	81%	37%
Marketing	40%	75%	89%
Obtaining technical support	44%	68%	55%
Public relations	29%	61%	109%
Purchasing products and/ or services	15%	49%	215%
Real-time conversation	8%	23%	200%
Recruiting	25%	51%	104%
Telecommunicating	13%	41%	230%

Source: [9]

At the end of this review let's focus for a moment at departmental utilization of the Internet among American companies. As it could be expected, the leader in heavy and moderate use is information systems & technology department, while second one is sales & marketing one (see table 32) [9].

Table 32. *Departmental use of the Internet*

Department	Heavy	Moderate	Light	None	No such function
Administrative services	2%	11%	43%	35%	5%
Finance	2%	10%	44%	38%	3%
Information systems & technology	23%	36%	28%	8%	3%
Manufacturing (% of manufacturing organizations only)	1%	5%	34%	53%	0%
Marketing & sales	10%	27%	36%	17%	8%
Purchasing	2%	8%	30%	46%	9%
Public relations/ communications	8%	19%	29%	27%	14%
Transportation/ Shipping	1%	3%	16%	49%	27%

Source: [9]

This is how presents current and expected use of the Internet among American organizations. It has been already quite significant, despite of mentioned earlier inconveniences and deficiencies. Such situation shouldn't be surprising, because American companies have been trying to use the Internet for the business purpose in the very early stages of its development and undoubtedly they are leaders.

Much worst presents utilization of the Internet among prominent British companies. The report "*The UK Internet Survey February 1998*" prepared by Fletcher Research, reveals that despite most of them feel they should have own Web site, they don't have clear strategy. As the result of that, 65% of Web sites contain annual re-

ports and other companies' information. Only 35% of surveyed companies tried to generate any revenue by means of their WWW pages [22] (see table 33).

Table 33. *Web sites usage by UK companies*

The way of Web site utilization	Percentage of sites
Publishing reports and other corporate information	30%
Utilization as marketing tools (mainly advertisements)	35%
Generating revenues (including products sale)	35%

Source: [105]

Sources of income for mentioned above 35% Web sites which generate revenues are as follows:

- advertising - 52%,
- *on-line* sale - 45%,
- hosting - 19%,
- subscriptions - 8%.

The most important conclusion of the report is that many of British companies "*are playing a waiting game*" referring to the Internet. They simply wait for the first move of their competitor, considering that there is no reason for earlier involvement in electronic commerce. Additionally, there is a significant percentage of large organizations that don't understand the Internet and its potential [22].

There are also available results of survey referring to use of the Internet by Central European public listed companies (PLCs). First such a study was conducted by Quade at the end of 1996 and beginning 1997, among organizations from Poland, Hungary, Slovenia, Czech and Slovak Republics, while results of the research were published in report "*Using the Internet to Improve Investor Relations: the case of Central European Public Companies*" in May 1997. The most important conclusion is that Central European organizations haven't yet included the Internet into their business strategies and haven't made any changes in their structures in order to adjust them to functioning in new realities. It results from the fact that senior managers haven't detailed knowledge about the Internet technologies (the next conclusion from the report). What is interesting, most of surveyed companies had ambitious plans referring to the utilization of Internet, but only few of them had necessary skills and

resources. The most important limitations comprise staff and telecommunication issues as well as languages problems. What can be also interesting, most of surveyed companies had very unrealistic expectations referring to costs, which must incurred because of involvement in electronic commerce [187].

Conclusions presented above are not very optimistic for Central European public listed companies. They confirm the commonly known fact that companies from this part of Europe, despite of generally dynamic growth of the Internet, still lag far behind American organizations referring to the Internet's utilization. A certain consolation, although not an excuse, can be situation of British firms.

5. Exploitation of the Internet in marketing process

5.1. General overview

The number of companies which have been including the Internet into their marketing strategy increases from day to day. It seems that because of their motivations they can be divided into two groups. First one, comprises companies which have perceived obvious advantages as well as new opportunities which result from the Internet use in marketing process and try to make the most of it. Companies that belong to the second group have decided to involve the Internet into their business strategy as a result of specific "vogue" which became a fact in the last few years and also observing that their competitors have already done it or have such planes.

The way organizations use the Internet for marketing purposes, depends mainly on preferred business model (see 4.2.). Those of them that lean toward information model, utilize the Internet for promotional activities conducted mostly through own WWW pages. On the other hand, companies which prefer transaction model and because of this involved in electronic commerce, treat the electronic marketing widely, utilizing it in more complete way. It's worth mentioning that few characteristics are common for significant part of marketers, regardless group they companies belong: lack of good idea towards to the Internet utilization in marketing process, incomprehension of its specificity resulting in inability of establishing successful business strategy. It is necessary to emphasize that in order to exploit successfully in marketing process the opportunities, which arise because of the Internet development, it is first necessary to understand this new environment, became familiar with rules and habits which exist there, learn to use the new marketing tools and then start preparing strategy of its utilization as well as try to implement it. Otherwise, the achievements can be very disappointing what have already faced many organizations worldwide, including the largest and most famous ones. Their basic problem was shallow understanding of this new medium specificity and usage there traditional marketing paradigms which do not apply to electronic environment. Companies very often do not realize that electronic market is quite different from traditional one: more dynamic, very interactive with strong position of consumers who have easy access to plenty sources of information allowing them to compare the prices of goods and services, conditions of sale and decide what they want to watch and how long. So, marketing activities should be adjusted to those new conditions.

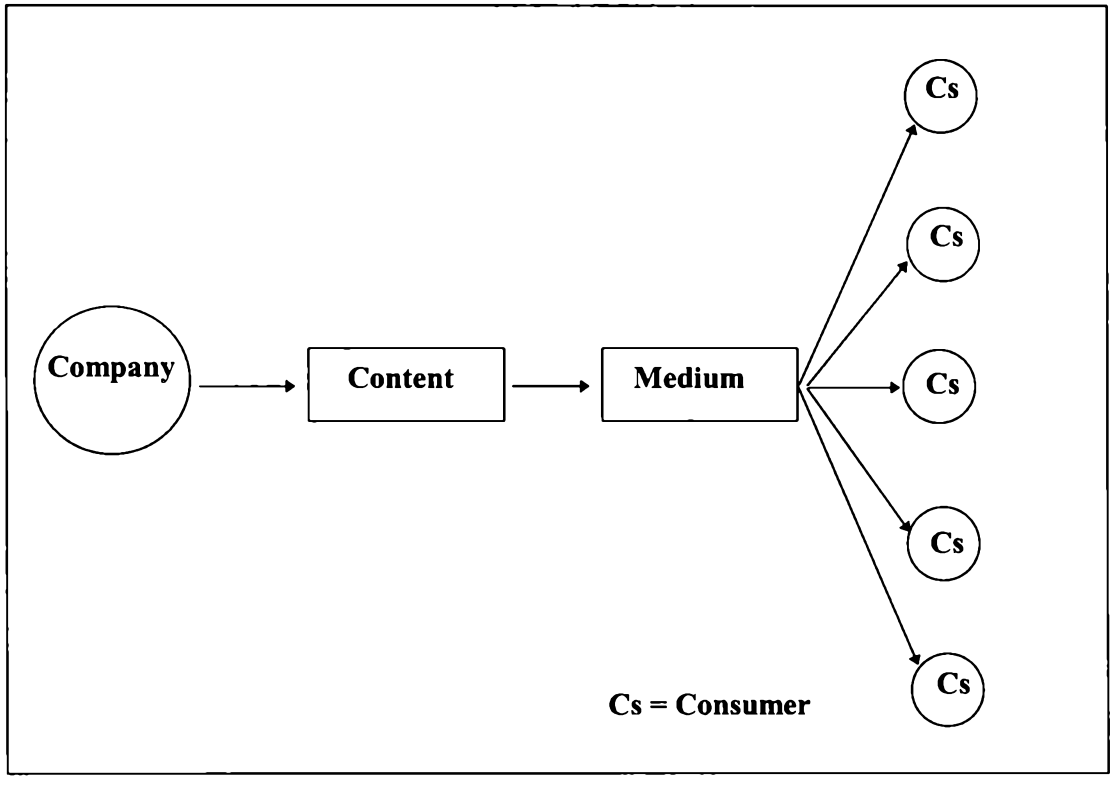
One issue is unquestionable. Because of the Internet, organizations receive set of quite new marketing tools and are provided with many new opportunities of performance. The most important challenge is to utilize them creatively.

5.2. Changes in communication model

Marketing through the computer mediated environment (CME), which the Internet is currently the best example, differs from the traditional marketing techniques in quite a few manners. Its most obvious characteristic is the way the company communicates with its potential customers. Namely, the traditional marketing exploits

mainly **one-to-many** communication model, in which company transmits a content through a medium to a large group of consumers (see Fig. 19).

Fig. 19: *One-to-many marketing communications model for traditional media*

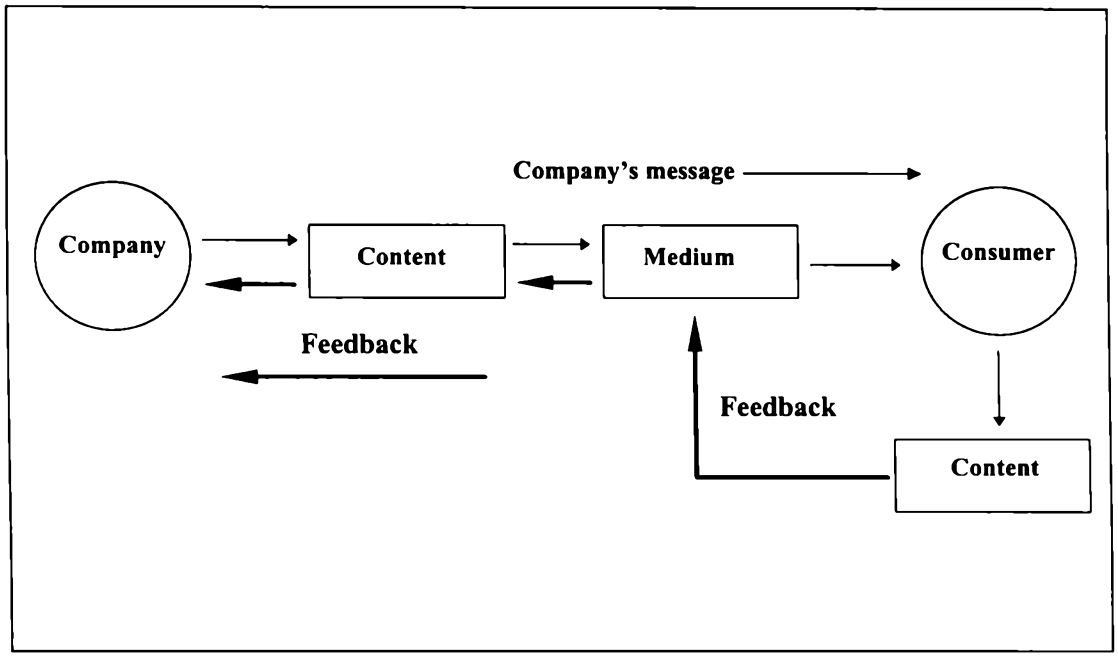


Source: [131]

In this model, there is no interaction between consumers and companies, meaning that the marketer has no obvious way to find out whether his/her message has communicated the same image he/she had in mind when conceiving the message. This model has been used in the traditional media, such as the newspapers, radio, television, etc., but it is not very useful neither over the Internet nor the WWW, which are not mass media rather interactive ones. Although it happens that one-to-many communication model is also used over the Internet, two other communication models are widespread there.

First of them is the **one-to-one** communication model, which is base of the most popular Internet marketing tool i.e. e-mail. It allows for sending the content through the medium from sender to receiver, and provides an easy way for acquiring feedback (see Fig. 20).

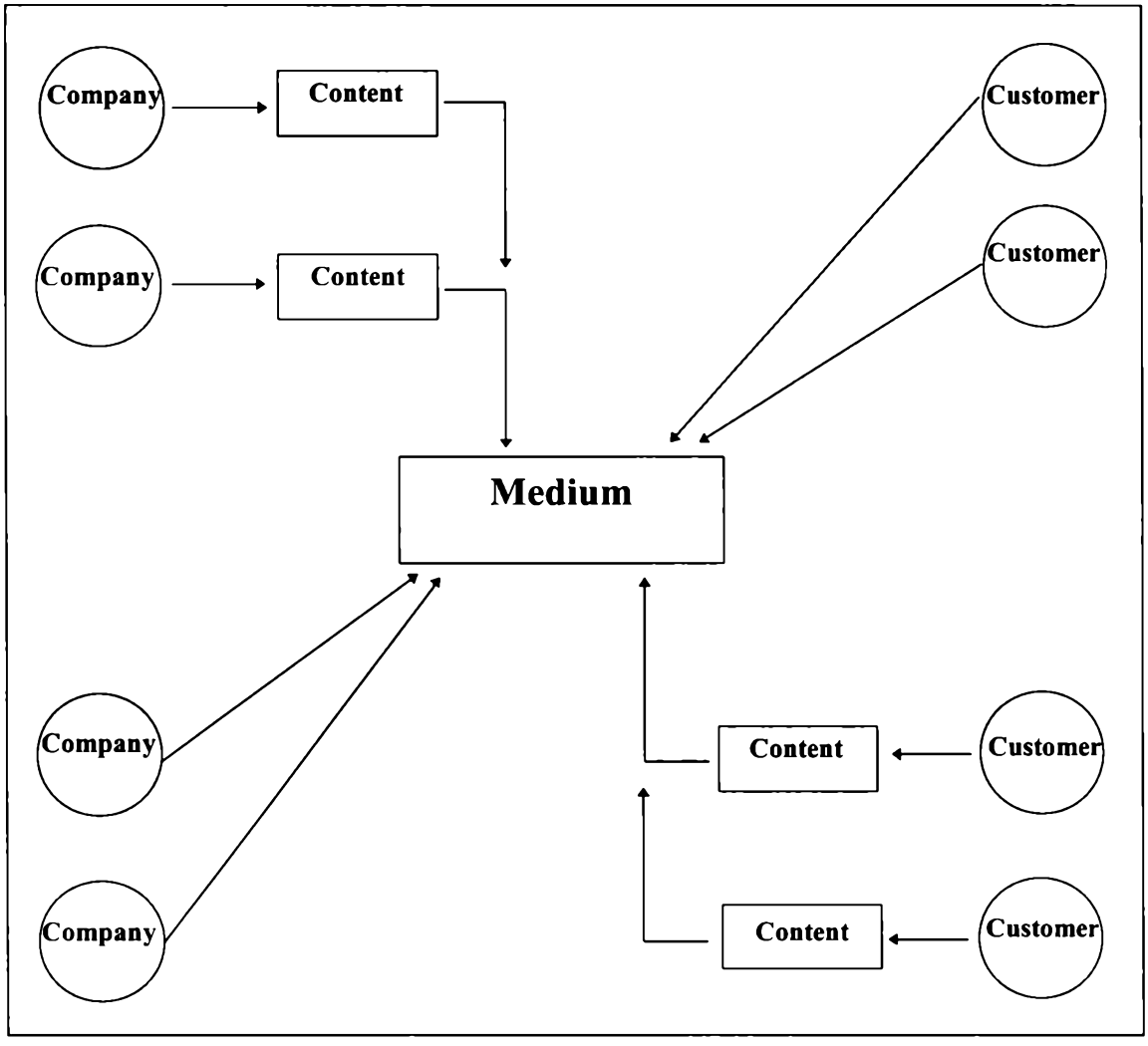
Fig. 20: *One-to-one marketing communications model for interactive media*



Source: [131]

The second model is called **many-to-many**. It brings about two types of interactivity: the interaction between the company and the customer through the medium, but also the interaction of customer with the medium itself (see Fig. 21).

Fig. 21: *Many-to-many marketing communications model for interactive media*



Source: [131]

So not only can the firm (the advertiser) provide content to the consumers through the medium, but also the consumers themselves. In this communication model, primary relationships are not between sender and receiver, but interaction with the medium itself becomes primary [131].

5.3. New marketing tools

Apart from new communication models, the Internet provides organizations with new, important tools which can be effectively used for conducting marketing activities. The oldest and the most important one is the electronic mail (e-mail). It can be defined as a computer-based text system allowing for message transmission from one computer to another. E-mail is a very effective, and what is also important, a cheap marketing tool, which provides opportunity for building close relationship

between the customer and the company. The studies concluded that it is currently the basic marketing tool used over the Internet [129], [130].

It is possible to classify e-mails from marketer point of view. According to [224], electronic mail for commercial purposes can be divided into three groups:

- **mass commercial e-mail**
  Such e-mails are sent, in the same form, to the big group of recipients on the Internet. They contain the same not personalized message. Very often they are called *bulk e-mail, spam* or *junk mail.* E-mails of this type are example of use over the Internet traditional marketing communications model.

- **segmented commercial e-mail**
  Such e-mails are sent to the specific groups of people, who have been aggregated as a result of conducted earlier segmentation based on their similar interests. Also this type of electronic mail is an example of usage mass communication model and application traditional marketing approach.

- **individualized commercial e-mail**
  E-mails of this type contain information which is customized to the individual needs of recipient. Such a electronic mail is based on one-to-one communications model which is the base of new marketing approach.

Electronic mail also serve as a basis for creating other tools, such as:

- electronic newsletters,
- mailing lists,
- newsgroups,
- autoresponders.

First of them, the electronic newsletters, can be described as electronic magazines sent to the electronic mailboxes of all the subscribed people. They can be delivered daily, weekly or monthly (or in other periods of time). Many companies, appreciating the role of this form of communication with customers, have already created own newsletters in order to provide them with information about their products, services or other issues. Most of them are freely distributed to the consumers, although there are also fee-based ones available only to subscribers or people who have bought specific product or service[20].

The second tool of electronic marketing, based on usage of e-mail are **mailing lists**. They allow group of subscribed people to discuss and exchange opinions about certain issue by sending message to the address of specific list. Next, message is automatically redistributed to the e-mailboxes of all subscribers. There are two kinds of mailing lists:

[20] For example Wilson Internet Service offers free newsletter "Web Marketing Today", but also issues fee-based "Web Commerce Today".

- moderated,
- unmoderated.

In moderated mailing lists, the list owner reviews all sent messages and blocks those which do not conform to scope of topics discussed in the list or contained advertisements. In unmoderated lists, message sent by one member of the list is automatically redistributed to the rest ones. In the July 1997, there were 71.618 mailing lists around the world [310].

Very similar tool to mailing lists are the **newsgroups** (Usenet), which also allow people to exchange opinions on a certain topic. The only difference is that messages from the other people are not delivered to the personal electronic mailbox. In order to collect them or send own one to the rest of group members, one should have a special program, called the "newsreader" (e.g. Free Agent).

The next tool based on e-mail are **autoresponders** called "e-mail on demand". They are the mail servers which automatically respond to the e-mail containing certain command. Autoresponders, which are similar to fax-on-demand, can be very effective in providing customers with certain standard information for 24 hours, requiring no human involvement. They can obtain in this way catalogs, prize lists, booklets, various information etc.

Another powerful marketing tool are World Wide Web pages. They enable companies to present thoroughly their products and provide all the additional information one wants to make accessible to the customers. Customer can easily review detailed content presented in the attractive multimedial form, which usually includes text and pictures, but can be enriched with sound, digital video, three-dimensional animations, and many other interactive elements. They also contain hypertext links allowing for quick "surfing" from one page to another one as well as from one Web site to another one. So, WWW pages provides markets with many opportunities of creative performance. It should be mentioned that also people who have no direct access to the World Wide Web can review contained there information using for this purpose e-mail. Namely, it is possible to download WWW pages by sending e-mails containing simple commands to the specific Internet servers as Agora [235].

At the end, one more tool which is not very popular yet, but it is worth mentioning. This tool is the Internet fax. It allows, with special free software available on the Internet, for sending faxes from any Windows application (Word, Excel). They are forwarded to ordinary fax machines and sender receives confirmation of their delivery by e-mail. An example of such a tool can be **Faxlauncher** which allows cutting fax costs by 60 - 80%. Using it, forwarding one page of any document sent from any country in the world to U.S. costs 15 cents [138].

Below, table 34 presents selected Internet tools, along with exploited by them communications model.

Table 34. *Internet marketing tools and communication model*

Type of the marketing tool	Communication model	Content	Media feedback symmetry
e-mail	on-to-one	text	yes
e-mail (*cc: list*)	one-to-few	text	yes
mailing lists	many-to-many	text	yes
Usenet newsgroups	many-to-many	text	yes
WWW	many-to-many	text, image, video, sound	yes

Source: based on [131]

5.4. The Internet and marketing research

The Internet is very convenient place for conducting marketing research, where both kind of data, primary and secondary, can be collected. Awareness of this fact grows among the marketers, so increasing number of companies use it for their purposes. The basic form of collecting primary data, are various surveys conducted through Web sites (as in case of GVU - see 2.3.5.) or sent by e-mail to the specific mailing lists or newsgroups. In the first case, forms with questions are filled out *online*, while in the latter one, they are sent back by e-mail. It also happens that organization conducting research, sends to the mailing lists or newsgroups only announcement about the survey, pointing out the specific URL (very often incentive is mentioned there). Sometimes survey forms are sent directly to consumers by e-mail, but in this case arises problem of their agreement to receive such messages (i.e. spamming) [52].

The Internet surveys have many advantages over the surveys conducted in traditional way (by telephone, mail or personal interviews). Currently, the only their disadvantage is lack of common access to the Internet, but it is expected that it will be diminishing in the next years. The most important advantages of conducting surveys over the Internet comparing to traditional ones are [63], [256], [307]:

- **reduced time results of obtaining survey results**
  Compared with conventional ways of conducting marketing research (e.g. mail surveys), e-mail or Web surveys give opportunity of collecting necessary data in significantly shorter time. It relates mainly to opportunity of faster reaching respondents, but also it is indicated that significant part of survey questionnaires are returned overnight.

- **lower costs of collecting data**
  There is no doubt that costs of e-mail or Web surveys are much smaller. Conventional surveys generate many expenditures, which are eliminated when research is conducted over the Internet (phone costs, expenses for postage, paper costs, interviewers salary, costs of manual data entry). Of course primary costs of survey, related to preparing questionnaires or interpreting results are not reduced.

- **higher response rates**
  Characteristic feature of the Internet surveys is that response rate is much higher comparing to traditional ones. It is a result of fact that using keyboard and mouse for completing questionnaire is much more convenient that conventional means. Also sending them back is in case of the Internet more comfortable comparing to e.g. mail survey. As to convenience of respondents, questionnaires delivered by e-mail directly to their e-mailbox have advantage over the Web surveys, because the latter ones require more activity of respondents.

- **more convenience for respondents**
  This feature directly relates to the previous one. Filling out a questionnaire using for this purpose keyboard or mouse (particularly in case of questions which require ticking the right answer) is more pleasant, absorbs less time and attention. Because of this it is feasible to complete a questionnaire and send it back in only few minutes, what is very important for people who are busy.

- **less opportunity for error**
  Since responses are directly collected in databases, there is no need for manual data entry, which can be a source of errors. In case of e-mail or Web surveys, data input is done by respondent.

- **faster follow-up to respondents**
  Important characteristic of the Internet surveys is opportunity of providing respondent with acknowledgements or other kind of response almost directly after receiving a completed questionnaire. Such a feedback can be additionally customized according to received answers.

Of course questionnaires sent to consumers are not the only way of collecting primary data. The most commonly used way of gathering information about customers, their preferences and expectations are various forms placed on WWW pages. Customers are very often asked to disclose some basic data about themselves (mainly

demographics) when they want to download a specific report, article or want to subscribe to a mailing list. Such *on-line* forms with database capability allow companies to create files which can be easily downloaded and imported to commonly used databases.

Another source of gathering primary data are **logfiles**. They are files from Web servers which contain some limited data about people who have visited a certain Web site, pages they were interested in etc. Such files can be also easily downloaded and analyzed by means of special programs, which generate reports presenting data in form of tables and graphs (this issue will be discussed in more detailed way in chapter 6).

It is worth underlining that in order to encourage people to fill out the forms or questionnaires, various incentives are offered. Such ways of compensation are essential, because otherwise consumers won't be interested in disclosing information about themselves and their preferences [249]. The incentives can be gadgets, T-shirts, discounts for purchasing products or services, money (e.g. as in case of GVU surveys) or computer equipment. For example, CIC Research, which conducts the "*Net Traveler Survey*", each month draws a "Zip drive" (a computer mass storage unit) for one person who filled out the survey.

There is also on the Internet many sources secondary data. A lot of them are freely available (e.g. results of GVU surveys), but some information and reports can be accessed on a fee-basis. Companies such as: Forrester Research, Jupiter Communication, Killen & Associates, ActivMedia or Nielsen Media Research sell the results of their surveys, providing only short press releases without any charge. Other companies, such as CyberAtlas, Nua Ltd or ZDNet offer for free a lot of interesting information about various industries and their trends, based mainly on results of researches conducted by the mentioned earlier organizations. Also specialist discussion groups, mailing lists or electronic newsletters can be an interesting source of secondary data [300].

One more issue is worth to be mentioned. It is a possibility of easy monitoring competitors by means of the Internet. Very helpful for this purpose can be reviewing specialist mailing lists or newsgroups and visiting competitors Web sites. But it is necessary to be aware that "transparency" of companies performance over the Internet relates to every organization so implementation of any innovation is immediately perceived by others, so advantage which arises with novelty can last for a very short period of time.

5.5. Influence of the Internet on elements of marketing-mix

5.5.1. Product

As products we will understand tangible and intangible goods as well as any kind of services offered on electronic markets. Reviewing offers of thousands of the Web sites it can be easy noticed that all kind of products and services are sold there. The *on-line* offer comprises books, CDs, air tickets, computers, software, electronic equipment, flowers, food, apparel, articles from newspapers and magazines, cars or

even houses. Also banking or insurance services are widely represented in the WWW. The Internet allows also companies to offer products, which are specific for CME and exploit all the possibilities available in this environment. An example of them can be virtual Christmas cards, but there are also more serious and important ones as e-loans (see [214]), electronic air tickets ("e-tickets") or *on-line* access to the biggest database containing words and phrases of English language (see 5.9.). Products which are currently the most commonly bought over the Internet are showed in table 35.

Table 35. *Products, the most commonly purchased on-line*

Product	Percentage of households that have bought products *on-line*
Computer-related products	40%
Books	20%
Travel	16%
Clothing	10%
Recorded music	6%
Subscriptions	6%
Gifts	5%
Investments	4%

Source: [88]

In this moment there are two important questions. What makes products offered through the Internet attractive for customers and what new possibilities arise in relation to this element of the marketing-mix ? Unquestionably the most important feature distinguishing products offered on electronic markets is possibility of enriching them with information. Also separation of products and information about them can be clearly observed *on-line*. So detailed information relating to the products being sold, create additional value which can be offered by companies through the Internet and the WWW. Because of this, organization have possibilities of customers education, familiarizing them with particular product or service what can result in attracting them and retaining for longer. Operating over the Internet companies actually have unlimited space at their disposal and all kind of means: text, image, sound, video. On the other hand, customers receive access to products richer in information

than on traditional marketplace what allows them to make much better choice and leads to increased satisfaction[21]. Therefore, information-rich products have the biggest chance for success on electronic markets. The best evidence is case of the famous Internet bookshop - Amazon.com. It's very rich offer, 3 million volumes, is a big advantage, but not the most important one. The basic advantage is abundance of information about books offered through their Web site, which can be freely accessed by everyone interested in it. The same is with Virtual Vineyards, the Web site which offers excellent vines. Also in this case, not only a product decides about the success, because there are many shops which offer good vines. Apart from excellent products, Virtual Vineyards attracts consumers offering them rich source of information about vines: opinions, recommendations and their categorization etc. It is something that customers don't get in most of traditional shops [290]. Also Bank of America adds extra value to offered products. Apart from providing customers with detailed information about them on its Web site, bank places there calculators which allow them to estimate *on-line* monthly payment of loan, its duration time or interest rate.

Beside enriching products with information, the Internet allows also for their easy customization to the individual requirements of the consumers. It is very important feature, because it gives customer opportunity of purchasing not a standard product, as it takes place in most cases on traditional marketplace, but such an item which exactly meets his or her needs. Nowadays, many companies offer such a opportunity towards their products. Customers purchasing PCs through Dell Computer Corporation Web site can choose every element of their computer (memory, hard disk, processor etc.) according to their individual requirement [74]. Similar feature offers the biggest competitor, Compaq. In both cases the whole process of choosing computer's elements is very simple. In clothing industry, starting from 1995, Levi Strauss producer of jeans, has offered women living in U.S. opportunity of pants customization. Jeans are created basing on data comprising customer individual measurement as well as chosen fashion and sent by modem directly from the shop to factory. Up to week time custom made jeans are sent to customer. From November 1998, company expanded their The Personal Pair program offering individualized jeans to both men and women [157], [186], [223]. In tourism industry many companies offer customers possibility of composing the individual vacation package basing on offered accommodation, transportation or leisure. Very interesting is the example of American Express Travel which helps customers in cruise planning and creating own travel package, by means of program called Cruise Assist [8], [222]. On music market, companies as The Music Connection and Custom Revolutions allow for customization of CDs. Namely, basing on customers' choice, they prepare individualized CDs, which can contain songs taken from various albums [62], [240].

Also referring to groceries, the Internet offers possibility of customization. It does not relate to products, which are rather difficult to be customized, but to customer's individual preferences. Company which offer such a possibility is NetGrocer. Visiting company's Web site for the first time customer creates own profile containing information about the preferences towards products and their quantities.

[21] Survey "Internet Shopping" by Ernst & Young clearly shows that information intensiveness is one more important features of products currently sold *on-line* [88].

During the next visit he or she is provided with the list of proposed purchases. The profile is permanently updated basing on shopping made by customer's recently. Company exploits fact that 85% of grocery purchases are repeatable [242].

The Internet allows also customers for participation in products testing and development. The perfect illustration of such opportunities is program "Test Drive" introduced by Digital Equipment Corporation, related to the supercomputer Alpha. Everyone interested could test this it by means of telnet. There was also possibility of uploading own software using FTP [61].

At the end, lets summarize the basic features characterizing products which currently sell best over the Internet. The most important attributes comprise [88]:

- high relative value,
- non perishable,
- information intensive,
- high tech.

5.5.2. Price

The basic feature related to the price of products offered through the Internet and more generally on electronic markets is their complete transparency. As distinct from traditional marketplace, customers can easily control and compare prices of specific good or service. They can do it personally, what is time consuming activity, or they can use some specialized Web sites. Such WWW sites allow customers to search for the products matching their preferences and having the lowest price. One of the first such intelligent agents allowing for comparison shopping has been experimental Bargain Finder. It gives customers opportunity to find the Internet shop which offers specific CD at the lowest price [19]. Travel Information Software System (TISS) searches through its huge database for the cheapest air ticket for chosen by customer route [286]. In case of Amazon.com customer looking for the specific book receives the list containing all available editions with their prices. There are also Web sites offering opportunity of comparison shopping towards various products. Examples of such sites can be mySimon or Bottom Dollar. They allow customers to search for best prices of various products which are divided into categories: books, electronics, magazines, toys, fashion, hardware, sporting goods etc. [29], [194].

The next important feature which relates to prices of products offered *on-line* is possibility of their prompt individualization according to the choice made by customer. As it was mentioned earlier Dell Computer Corporation allows customers to compose *on-line* computer according to their needs. Replacing one element (e.g. hard disk) with another, customer is immediately informed how changes the price of the computer comparing to the standard one. Similarly, customer buying a book at Amazon.com is informed about their final price including the costs of packaging and shipment to the country of destination.

Because of fact that electronic commerce allows companies to remove significant part of retail operating costs[22], prices of products and services offered via the Internet should be much lower comparing to these offered on the marketplace. Unfortunately, as states the chief executive of CUC International Walter Forbes, in most cases price benefits in relation to products sold *on-line* are currently rather small [199]. This observation is confirmed by quoted earlier Ernst & Young report (see table 35).

Table 36. *Web Pricing Schemes*

Lower on the Web	4%
Lower during active promotions	17%
Same in both channels	79%

Source: [88]

Nevertheless, there are some examples of products which can be bought *on-line* much cheaper than on traditional marketplace. Quoted above TISS gives customers possibility of buying air tickets at prices discounted from 20% to 70% comparing to those available through traditional channels. European Travel Network offers hotels rooms reservation with discount up to 50% [90]. Prices of books sold by Amazon.com are 20% to 40% lower comparing to the list prices. Despite the costs of packaging and shipment, CDs bought in CDNow are cheaper than in most European music shops [137]. Very curious is fact that there are also products which are more expensive when bought on-line. This remark relates to the train tickets sold by PKP (Polish State Owned Railways) through their Web site. Customer buying ticket in this way pays higher price comparing to purchase made personally at the railway station, because extra money (about 1.5 USD) is charged for *on-line* service [229].

5.5.3. Promotion

Utilization of the Internet in companies' promotional system was one of the first forms of its usage for marketing purpose. There have been many reasons:

- lack of geographical limitations,
- easy feedback,

[22] The value of it, is estimated to 30% [137]

- possibility of reaching customers for 24 hours, seven days a week (*7x24 availability*)
- low costs,
- possibility of quick information update.

Still the most important limitation is the number of people who have access to the Internet, but this situation has been quickly changing.

As it is commonly known, the promotional system comprises five basic elements [111]:

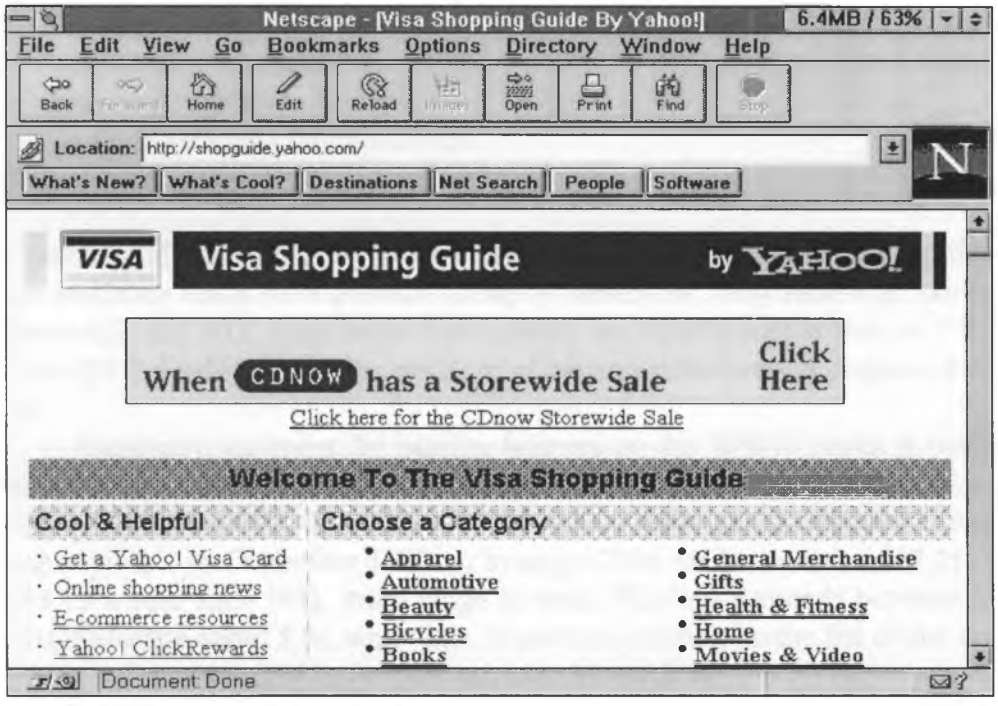
- advertising,
- sales promotion,
- personal selling,
- publicity,
- public relations.

They compose promotional-mix and the Internet can be utilized in each of mentioned above elements.

5.5.3.1. Advertising

The basic advertising medium on the Internet are WWW pages and its most popular form are small graphics placed there, called **banners** (see Fig. 22).

Fig. 22: *Banner of CDNow placed on one of Yahoo! pages*



Source: [309]

Banners have various sizes, although in 1997, industry standards were:

- 468 x 60 pixels
- 234 x 60 pixels.

A year later, 468 x 60 was the most commonly accepted size [65]. Banners are usually limited to 7K to 10K [303]. They can be animated or stationary, but the first ones are considered as about 25% more effective [28]. They link with the advertiser's Web site, so customers clicking on it are moved there and can get more detailed information about company's offer. It's obvious that advertisers are mostly interested in placing their banners only on sites with high traffic. In November 1997, the first fifteen included (in order): Yahoo, Netscape, Microsoft, Excite, Webcrawler, AOL.com, Infoseek, GeoCities, MSN, Lycos, CNET, Alta Vista, Zdnet, Hotmail, CNN and WhoWhere/Angelfire [49].

It is necessary to underline that even most successful Web sites can't compete with popular TV channels as regards the number of people gathered simultaneously. The reason is quite obvious. There are thousands of interesting Web sites on the Internet, so people "surfing" there are simply dispersed [249].

Let's take a look at effectiveness of the Internet advertising. Potter claims that the use of Web sites for advertising purpose results in "*10 times as many units [sold] with 1/10 of the advertising budget*" [231]. The results of study conducted in June 1997 for The Internet Advertising Bureau, indicated that banners are very effective

form of advertising. According to that survey, single banner exposure increases [140]:

- advertisement awareness,
- brand awareness,
- product attribute communication,
- purchase intent.

Another study conducted by NetRatings, revealed that banners meaningfully enhance the audience reach of a product [274]. A survey of 7000 American consumers by Ipsos-ASI and AOL concluded that banners are equally memorable as TV commercials [207]. Undoubtedly, the problem of banners effectiveness requires further studies.

Generally, payment for placing banners on the WWW pages is based on two schemes. In most cases they are sold on CPM (*cost per thousands*) basis as traditional advertisements. It means that advertiser pays certain price for thousand of impressions. In December 1997 an average CPM for banner was $37,21, falling to $35,13 a year later [65]. Price range is wide. Playboy demands between $7,50 and $10, Netscape about $20, while Hot Wired (19 position on the list of the most popular Web sites according to [49]) as much as $150 [249].

Some advertisers consider advertisement as effective only in case when customer seeing banner decides to click on it and is moved to their Web sites. In this case companies pay only for the number of "click-throughs" instead of "page views". Basing on this payment scheme Procter & Gamble (one of the biggest American advertisers) entered into agreement with the most popular and attractive for advertisers Web sites - Yahoo [249]. According to quoted above IAB survey, "clicks-through" doesn't have any impact on advertising awareness. Also results of NetRatings study confirm that there is no correlation between "click-through" rate and banner effectiveness. Currently average CTR (*click-through rate*) is 1%, what means that only ten people for thousand watching banner click on it [304]. About 86% of respondents of IAB study considers CPM as proper form of payment for placing banners [140].

Strategy which is very unfair towards to WWW pages owners and irritating for visitors, began to apply WebTV. Namely, this company which offers access to the Web through the TV sets, inserts their advertisements between pages on the Web site. So, user skipping from one page to another is forced first to watch ad inserted by WebTV and only after its vanishing he/she can see requested WWW page. Company uses this strategy without anybody's permission and doesn't pay anything to Web sites owners. What is interesting, WebTV considers this practice, which is called "interstitials" or "intermercials", as legal and fair [146].

One more issue which can influence the Web advertising in the future, is worth mentioning. So far, reaching an advertisement required activity of user, because the basic technique utilized over the Web was "pull". In this model, user was "surfing" through the WWW, downloading to his/her computer interesting pages, together with contained there ads. Of course user decided if specific banner is worth clicking or

not. In 1997, "push" technology, commonly used in mass-marketing became widespread on the Web. It was connected with emergence of fourth generation Web browsers (Netscape Communicator, Internet Explorer 4.0) which offered opportunity of "subscribing" to various information channels, automatically downloaded in specified by user periods of time. Together with required information, user also receives banners, which are "pushed" to his/her computer [82], [101], [147]. It's worth to add that after initial fascination of "push" technology, enthusiasm of the Internet community has quickly diminished [183].

One more issue influences on utilization of the WWW pages for advertising. Namely, important question is if users watching Web pages, turn "auto load images" option off, in their browsers and download text only (in order to speed the whole process) or not. It's obvious that when the first situation takes place, banners are not displayed. Fortunately for advertisers, 86,41% of users "surf" through the Web downloading interesting for them pages together with graphics [153].

Although banners are currently the most popular form of advertising on the Web, Dennis F. Beausejour, Vice President-Advertising of Procter & Gamble (one of the biggest world advertisers) claims that in the close future other forms of ads, beyond banners, should be used and P&G works on their development [23]. An example of such attempts are *on-line* coupons placed on banners. Clicking on the banner, customer can download and print a coupon in order to them use it in physical shop [204].

There are also other forms of the Internet advertising, beyond the Web. Numerous newsletters devoted to various issues gives possibility of placing there ads (see Fig. 23).

Fig. 23: *A part of newsletter "Business This Week" issued by The Economist, containing advertisement of Oracle*

```
**********************************************************************
****
Welcome to Business This Week
A summary of the world's main business events from The Economist
Also available at http://www.economist.com

**********************************************************************
**
                    Advertisement

  Oracle, the company that introduced Network Computing, invites you to
learn how to make computing easy, accessible, powerful and inexpensive.
                  http://nc.oracle.com

                        Oracle.
        Enabling the Information Age through Network Computing.
**********************************************************************
**
   MAINSTREAM

  + Ambitious COMPAQ, the world's leading maker of personal computers, will
    become one of the biggest all-round providers of computer products with
    the $9.6 billion purchase of DIGITAL EQUIPMENT, a well-regarded --
    though troubled -- computer firm whose main business is providing
    computer services to businesses.


  + The effect of Microsoft's onslaught on the browser market was revealed
    in a larger-than-expected net loss for NETSCAPE of $88.3m in the fourth
    quarter, down from a profit of $8.2m a year earlier. To keep its ever-
    shrinking lead in the business, the software firm recently decided to
    give away its browser.
```

Source: [276]

Although their attractiveness is not as big as banners (only text can be used) they can be very effective and cheap form of advertising, because of their costs and number of recipients. For example "Web Marketing Today" has been "pushed" to e-mailboxes of more than 58.500 (February 1999) subscribers around the world, while "Iconocast" at the same time was received by more than 33.000 people.

There is also a possibility of sending advertisements directly to customers by e-mail, what seems to be quite commonly accepted form of advertising, despite of

"spamming" problem which can arise in this case. According to "Sixth Internet User Survey" conducted by Nikkei Multimedia in May and June 1998, the majority of respondents (50,5%) expressed opinion that e-mail advertising is more adequate in providing information about products than banners (43,6% of people expressed opposite opinion) [196].

General structure of consumer related *on-line* advertising, in second and third quarter 1998 presents below table 37.

Table 37. *Breakdown of consumer advertising*

Consumer Categories	Q3 1998	Q2 1998
Retail	34%	33%
Automotive	7%	19%
Mail order	11%	10%
Toys	9%	10%
Other	29%	28%

Source: IAB in [271]

5.5.3.2. Sales promotion

Also this element of promotional-mix is widely used over the Internet. Let's quote some examples. Commonly used practice by software companies is selling their programs on the "try before you buy" basis, allowing their customers for downloading limited version of them or full ones, but functioning only for limited period of time. Another philosophy applies Netscape Communications Corporation. Company makes their famous Web browsers available free of charge to everybody who uses them for non-profit purpose, charging only for commercial usage[23].

Commonly used form of sales promotion referring to books, is possibility of downloading a part of it. In this way M. Hammer, co-originator of business process reengineering concept, allows for *on-line* access to the tenth chapter of his latest book "Beyond Reengineering" (see [118]). More active form of sales promotion of their latest book "The One-to-One Fieldbook" carried out founders of one-to-one marketing concept - Peppers and Rogers. In the middle of January 1999, sending to all subscribers their weekly newsletter "Inside 1to1", they attached to it a file con-

[23] In 1997 Netscape tried to charge everybody for using their browsers, regardless the purpose of usage, but quickly abandoned this policy.

taining a table of contents and first chapter of mentioned above book. Similarly, companies conducting various surveys (e.g. ActivMedia) offer through their Web sites selected parts of their final reports, demanding payment for full versions. Publishers of fee-based electronic newsletters often provide customers with free trial issues. Also companies sponsoring newsletters, very often offer their subscribers discounts for own products.

5.5.3.3. Publicity

The Internet gives also opportunities of free dissemination information about company and its products i.e. publicity. Even ordinary e-mail can be useful for this purpose, because it allows for delivery of basic data about a firm by means "signature" i.e. short text placed at the end of the message. Signatures usually contain information as company's name, profile of business activity, phone and fax numbers, Web site and e-mail addresses. There are various opinions about the acceptable number of lines which can be contained in "signature" and in practice their sizes significantly differs (see Fig. 24).

Fig. 24: *An example of e-mail containing long "signature"*

Date: Tue, 18 Nov 1997 00:04:52 -0500
From: Layna Fischer <layna@waria.com>
To: bpr-l@duticai.twi.tudelft.nl
Subject: Business Process Analysis Workshop
Message-ID: <347121F3.5629FD20@waria.com>

Hi Fellow BPRs

This note is in response to Frequently Asked Questions over the past couple of weeks:

1. EDUCATION & TRAINING: Sorry, but the Business Process Analysis Workshop by Brian Dickinson, Dec 3-5 in Washington DC is definitely the last one this year and through Winter. We might have another one on the West Coast late spring, but no plans are set at this time. There are some seats left for the December workshop, I suggest you reserve yours asap. Brian is our most popular course leader. And yes, you can obtain certification in the form of CEUs (Continuing Educations Units). The Course Outline is at http://www.waria.com/bpa.html

2. AWARDS: Although we haven't yet posted to our web site the criteria for the next North America Excellence Awards submissions, this is a confirmation that vendors should already be working with their customers to get the case studies written. I apologize for the delay--Connie Moore, Giga's chief judge--is on a month's medical leave of absence. As a courtesy, I'm awaiting her input in bringing the Rules and Guidelines up to date which is why we lack finite details at this time.
These prestigious awards -- now in their ninth year -- are used to recognize organizations that have demonstrably excelled in implementing innovative BPR, Knowledge Management and workflow solutions to meet strategic business objectives. The guidelines from the recent European Awards are at http://www.waria.com/announce.html. This will give you some idea of how to frame your submission. The North America (USA, Canada, Mexico) guidelines will be posted soon.

Please bear with us.... The deadline for submissions will be around February 6.

Thank you!

Kind regards

Layna
--
==========
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Just published!"Excellence in Practice-Innovation and Excellence in Workflow and Imaging." What makes a winner? Case studies of the winners and finalists of the 1996 Giga Excellence Awards. US$50.00. See URL above for TOC and first chapter.
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Source: [35]
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Most of discussion groups and mailing lists don't accept any promotional materials (although there are some exceptions). But there is a possibility of disseminating information about the company and their business activity by means of mentioned earlier "signatures" attached to e-mails sent to a specific mailing list or discussion group. This is allowed and commonly used practice.

5.5.3.4. Public relations

The next element of the promotional-mix in which the Internet is widely utilized is public relations. Commonly used form of it is placing by organizations on own Web sites press releases about important issues related to their business activity. It can be information prepared by own staff as well as quotations from publications about company written by others or messages from satisfied customers. Very often companies forward announcements about their new press releases to specialist discussion groups or mailing lists. Another alternative is engaging organizations as Internet News Bureau or PR Newswire, which specialize in contacts with both kind of media - traditional and *on-line* [304].

Internet tools, which are very useful for influencing consumers' opinion toward organizations, are own mailing lists or discussion groups. Topics, which are discussed there, mainly do not relate directly to company's business activity, but rather to issues specific organization is an expert. Very important is to concentrate on subjects, which can attract as big audience as possible, otherwise existence of group doesn't have any sense. In this case important is the role of moderator. It's worth to underline that mailing lists or discussion groups can be "double-edged" tool, because dissatisfied or frustrated customers can post there their negative opinions about company distorting its image. The most commonly known example is case of Intel and their troubles with Pentium processor. Of course organizations don't have any control of publicly expressed over the Internet opinions about them which can harm their reputation. The only thing company can do in such situation is posting a message containing clarification to specific group or list.

Also very significant role in promoting companies and their products play electronic newsletters. They can be focused on information about company and their products, but very often organizations decide to publish newsletters, which provide subscribers with more general information and various valuable for them data related to area of their business activity. One of the best examples of usage newsletters for public relations purpose is Irish consulting company Nua Ltd., which deals with helping organization in creating and implementing successful Internet strategies. Company offers few, very interesting newsletters, which are released basing on the principle "making free information pay". The newsletters which have been issued by Nua Ltd. comprise "The Clickonomist", "New Thinking", "Nua: What's New", "Making it Work" and the most famous "Nua Internet Surveys". This last one is delivered every week to more than 130.000 (January 1999) people worldwide and has been already quoted by as widely known publications as ABC News, Wall Street Journal or CNN Online. According to Nua Internet Survey, first returns have been noticed eighteen months after its launching in 1996. Other interesting examples of

newsletters comprise "Web Marketing Today" issued monthly by Wilson Internet Service, company specialized in the Internet marketing and "APQC CenterView", released by American Productivity & Quality Center. Also TV stations have already appreciated the role and importance of this form of communicating with their audience. Once a month, NBC sends to subscribers "NBC Peacock", a newsletter containing reviews of the most interesting programs, interviews or very attractive competitions.

Important form of public relations utilized over the Internet is sponsorship. One of its most popular forms is sponsorship of electronic newsletters. Many of them are partly or completely sponsored by one or few companies. Usually such newsletter contains the list of sponsors together with short information about them (see Fig. 25).

Fig. 25: *A part of electronic newsletter "Tidbits" containing the list of sponsors*

TidBITS#462/11-Jan-99
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What's your favorite flavor? At last week's Macworld Expo in San Francisco, Apple surprised us with a handful of iCandy, speed-bumped iMacs in five fruity colors. However, the excitement didn't end there as Apple introduced a significantly changed Power Macintosh G3 and new displays. In this issue, we have the hard numbers behind the new Macs, plus impressions and observations from one of the more successful Macworld Expos in recent history.

Topics:
MailBITS/11-Jan-99
New iMacs, New G3s, and Mac OS X Server
Macworld Expo SF '99 Keynote Notes
Macworld Expo SF '99 and the Macintosh Ecosystem

<http://www.tidbits.com/tb-issues/TidBITS-462.html>
<ftp://ftp.tidbits.com/pub/tidbits/issues/1999/TidBITS#462_11-Jan-99.etx>

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Source: [281]

There are also possibilities of some mailing lists sponsorship, what can be quite effective method. In case of certain travel company sponsoring "Internet Sales" (list devoted to the Internet sales and marketing) it resulted in $34.000 sales increase [147]. Mailing lists accepting sponsorship are gathered in [30].

Another commonly used approach is sponsorship of a Web site or specific part of it. An example can be *on-line* resource called "What Is ?" containing frequently asked questions about the Internet and Internet marketing. It has been established by "Iconocast" on its Web site and it is sponsored by Virtual Vineyards as well as other

organizations [135]. There are also examples of quite big money spent on sponsorship over the Internet. An illustration can be case of WebMD, which agreed to pay Lycos more than $53 million for 3 year sponsorship of healthcare content. Generally The Internet Advertising Bureau estimates that currently expenses for *on-line* sponsorship consist 30% of the whole Internet advertising expanditures [273].

5.5.3.5. Personal sale

Because of its interactive nature, the Internet gives significant opportunities of establishing personal relationship between buyer and seller. Particular role plays e-mail which allows for quick solving problems customer may face during the transaction as well as providing him/her with additional customized information about products, prices or forms of payment. The result of such a individualized sale is increased customers' loyalty who know that they can any time get in touch with specific person requesting assistance or explanation. One of the best examples is famous Amazon.com. Although their sales process is completely automated, it happens that customer has some problems or doubts referring to any of the steps. In this case he/she can contact with personnel who in quick and competent way provides him/her with necessary advice related to specific order.

5.5.4. Channels of distribution

The World Wide Web (because mainly this part of the Internet is used for commercial purpose) possesses characteristics of direct and indirect distribution channel, but predominant is usage it as direct one [45]. There are many reasons of it. Global structure of the Internet and WWW allows companies for easy, direct access to consumers worldwide, without necessity of usage intermediaries. Important characteristic of this distribution channel is also its 7 x 24 availability.

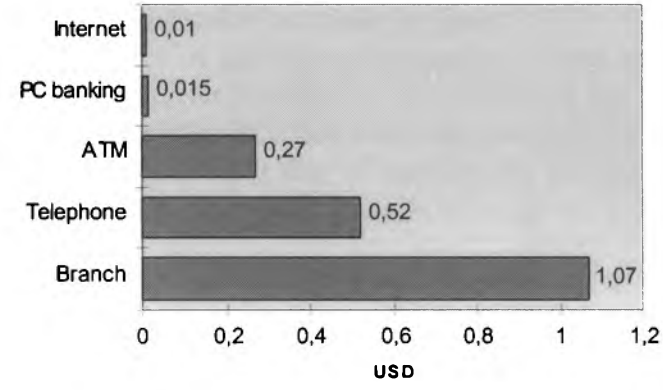
Although the results of research conducted by [45] point out that the Internet will be rather used as a distribution channel of services, the sale of tangible goods increases dynamically. Mentioned earlier Dell Computers Corporation used to sell consumers directly through its Web site products of value 5 million USD per day, although it reported that in November and December 1997 during few days the sale reached $6 million [126], [183]. In February 1999 company made its biggest single *on-line* sale, selling to Norwest Mortgage notebooks worth $7 million [85]. In the same month ActivMedia reported that Dell's daily sale via its Web site reached $14 million, what gives totally about $5 billion a year [272]. Company plans to extend its *on-line* offer in 1999, launching store the Gigabuys.com. It will sell about 30.000 various electronic products (chips, printers etc.) [86]. Revenues of Amazon.com, the biggest Internet bookseller, reached in 1997 $147 million, while for the 1998, it soared to $610 million [174], [241], [272]. As the *on-line* cars sale is considered, American experts estimate that in 1997 sale of 2% of 15 million new cars of total value $ 6 billion was the result of usage Web sites as Auto-by-Tel [16].

Very important feature of the Internet as a distribution channel is possibility of cutting cycle time necessary for completing the whole transaction and quicker goods

delivery. Many organizations worldwide use this new opportunity. Customers purchasing specific software *on-line* are able to receive it in a few or few dozen minutes (depending on connection speed), downloading it directly from software company's Web site to their computers. Also publishers can quickly reach customers with their products. Such an opportunity is utilized by Harvard Business Review, which offers their articles in two forms: as traditional paper ones or as PDF (*Portable Document File*) files. The last ones can be easily downloaded *on-line*, what allows customer, regardless his/her the place of living, to receive required article in a few minutes. Also "e-tickets", offered by increasing number of airlines, can be "received" by customer immediately after making payment.

The next important feature of the Internet as a distribution channel is possibility of significant costs reduction. It is possible because of intermediaries elimination, automation of many activities, reduction the number of necessary employees, smaller "brick and mortar" costs. Forrester Research estimates that costs of processing transactions over the Internet are two-third lower than in case of telephone usage, what leads to a 4 percent higher profit margin [199]. Similar assessment gives IBM's General Manager of Enterprise Web Management - Richard Anderson. According to him, transactions conducted *on-line* are 70% to 90% more cost effective comparing to traditional ones, engaging people [199]. In retail banking cost of single transaction conducted in traditional way (i.e. the branch bank) is $1.07. When the Internet is used for this purpose, such cost is only $0.01 (see Fig. 26).

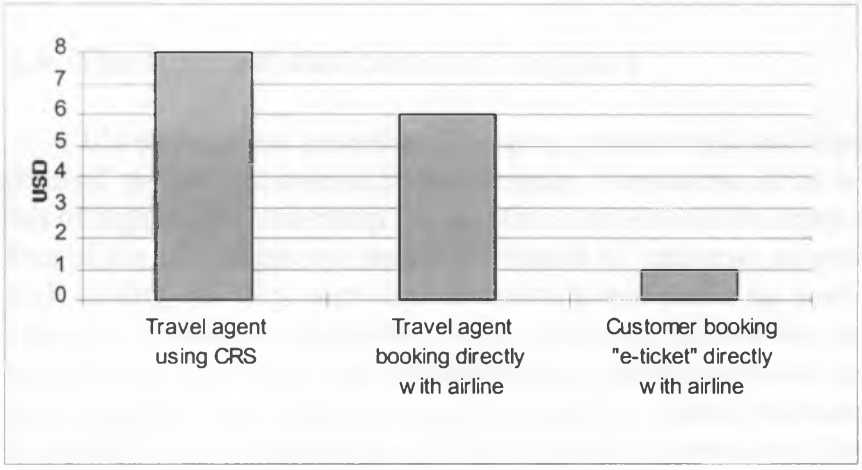
Fig. 26 *Comparison of single operation cost in banking*



Source: Booz-Allen & Hamiltion in [56]

Lower cost of the Internet as distribution channel caused a conflict between airlines and travel agencies. For example, Northwest Airlines decided to pay 5% commission (instead 10%) to those travel agents that sell their tickets *on-line*, motivating it their lower costs [166]. In fact the differences can be significant (see Fig. 27).

Fig. 27: *Comparison of airline ticket processing costs*



Source: Air Travel Association of America in [56]

One more issue requires mentioning. It is a problem of physical distribution of goods from seller to buyer. In case of mentioned earlier intangible goods as software, articles or "e-tickets", delivery can be made *on-line*, what allows also for elimination of significant part of expenditures. In such situation there are no costs of packaging, shipment, printing, diskette or CD-ROMs usage etc. When tangible goods are delivered, usually companies as UPS or Federal Express are used. But in this case packaging and shipment expenditures can consist up to 30% of the final price [160]. Mentioned above companies also add new values to their service e.g. allowing for tracking packages over the Internet and other ones. In case of *on-line* sale of cars, they are delivered to customer by dealer.

Despite of all those advantages of direct sale over the Internet, currently not many manufactures utilize it. It is estimated that only less than 1% of retail sales is made through the Internet. There are many reasons of this situation, but it seems that the most important is fear of endangering relationships with distributors and dealers. Generally there are four strategies of usage the Internet as a sales channel [304]:

- sell products directly through the Web, but without any discounts,
- sell products directly through the Web at market prices,
- sell products directly through the Web, paying commission to the salesforce for sales occurred in their area,
- do not sell products directly through the Web and display only information about them.

At the end, let's mention about the new role of intermediaries, which are often eliminated from channels of distribution, because of growing popularity of direct sale over the Internet. According to many opinions they will gradually disappear. But they can play on electronic markets another significant role. Because of information overload (320 million WWW pages in 1998, while predicted 800 million in 2000) which causes that cost of information finding can be relatively high, it gives interme-

diaries new possibilities. They can play on the marketplace role of "information brokers", gathering various data and delivering them to both buyers and sellers [247].

5.6. The Internet and customer support

It's obvious that positive customer experience not only depends on quality and price of the product offered by the company. In situation of the marketplace of '90s, full of high quality and cheap goods, other elements decide about company's success. One of the most important ones is excellence of customer support and service. Their high quality is very important in creating and diffusing good company's image leading to increased customers loyalty. Commonly known fact is that attracting new customers is five times more expensive than retention present ones. Traditional customer support system based on usage phone, fax, printed materials or traditional mail is expensive, time consuming and what's most important not flexible enough. Utilization of the Internet for this purpose, allows for significant improvement of its effectiveness, making it more convenient and meaningful lowering its costs by reducing number of necessary stuff. Very important characteristic of *on-line* customer support is its 7 x 24 availability.

The basic element of customer support are WWW pages, which offer permanent access to various updates, documentation, detailed information about offered products, available services, or methods of payment. An essential element of most Web sites are pages containing FAQ (*Frequently Asked Questions*), which is a set of most commonly asked questions or problems and answers to them. Such lists are continuously updated with new issues, as they arise. Also autoresponders are very effective in providing customers with standardized information. Very valuable from customer point of view can also be established by company mailing lists and newsgroups. They allow customers for information exchange and obtaining support from other group members in solving various problems. Of course an essential element of customer support and service is e-mail. It allows for quick, low-cost personal contact with company's personnel in case when more detailed information or assistance is required. Nowadays there are many examples of the successful Internet utilization for customer support purpose. On the business-to-consumer segment, Amazon.com is considered as one the best cases. Also customer support of the biggest Internet shop with CD records, CDNow, represents the highest level of such a service. Apart from other possibilities, customers can obtain there quick information about specific artist or album. A person called Feedback Manager provides quick assistance even in situation when customer knows only artist's name along with few words from the song and is looking for the title. On the business-to-business segment mentioned earlier Dell Computer Corporation enables their customers for access via its Web site to the same information and support tools as their technical staff uses. They can download software they need, review troubleshooting tips and technical information. Referring to software only, Dell estimates that their ordering and sending them in traditional way would cost company weekly $150.000, while cost of one call with technical support request is about $15. Generally it is assessed that company saves several million dollars offering technical support and customer service via the Internet [56],

[175]. Also Cisco offers wide scope of customer support through its Web site called Cisco Connection Online. Customers can download software, documentation or other information and receive technical assistance. Company estimates that every month amount of software downloaded by customers and partners exceeds 70.000 and 20.000 cases are supported *on-line* [48]. Savings being the result of utilization the Internet for customer service are assessed to $125 million [56]. Sun Microsystems using its Web site for automating answers to customers' frequently asked questions was able to save over $4 million [157].

5.7. Etiquette of leading marketing activities over the Internet

Conducting marketing activity on the Internet it is necessary to be aware about existence there specific principles, which has been developed and strengthen during the years of its growth. In spite of fact that those rules are usually unwritten, they are strictly abided by the Internet community and not compiling with them can lead to serious problems. This set of principles describing acceptable use of the Internet is called **netiquette**. Rules of network "etiquette" apply to utilization of all tools used by marketers on the Internet.

One of the basic rules abiding over the Internet is lack of acceptance for sending, often to hundreds of people, unsolicitated e-mails containing advertisements. Such a practice is called **spamming**. Of course the situation looks quite different in case when someone visiting specific Web site gives his/her assent to receive specific information. It is also not acceptable to send this kind of materials to mailing lists or discussion groups (although as it was mentioned earlier, there are some exceptions). Despite mailing lists owners often install filters which block unsolicited e-mails, very often it happens that they get through causing discontent of list members. In extreme situations it can lead to taking legal actions. In November 1997, a spammer was sentenced to pay $19.000 by court from Texas [183]. Also in December 1998, America Online won three lawsuit against spammers and has sued five other ones [110]. In another lawsuit in Israel, the Tel Aviv Magistrate Court prohibited spammer from connecting to the Internet for two months [206]. Apart form legal actions against people sending unsolicitated e-mails, there are other restrictions on the Internet. They comprise, for example, various "black lists" containing names of people or organizations forwarding spam e-mails to discussion groups, mailing lists, companies or private users.

As mailing lists are considered, it is worth mentioning that user should be aware that every list has two addresses. First one is designated for subscribing and unsubscribing from the list, while the second one is used for sending messages to the rest of members. Using inappropriate address leads to situation when hundreds of angry list members will receive requests about subscribing or unsubscribing. It is also advisable to observe for some period of time habits, which prevalent on the specific list, before sending first messages to their members.

The next important issue, which one should be aware is fact that discussion groups, mailing lists or Web sites are public forum and opinions or comments published there are often archived. Because of this, it is necessary to be very careful in

spreading opinions presenting private persons or organizations in unfavorable light, otherwise such a behavior can lead to unpleasant situations. For example, company Presstek took legal action against three discussion group members, accusing them of defamation [31].

Let's mention about few more principles of netiquette. Sending e-mails it is very important that their size shouldn't too big. Commonly accepted rule is not exceeding 50 kB. Forwarding e-mails it is also necessary to remember that costs related to it are also incurred by recipient, who pays fee for connection required to download the message. One of the general accepted rules comprise also including subject line in the message and limitation the signature size to 4 - 7 lines [117].

5.8. Implication of new environment possibilities

The impact of information technology, particularly the Internet and WWW, on marketing process is very broad and leads to deep changes in its performance. Because of this, it becomes necessary to revise many of so far used paradigms and develop new approach to relationship between marketer and consumer.

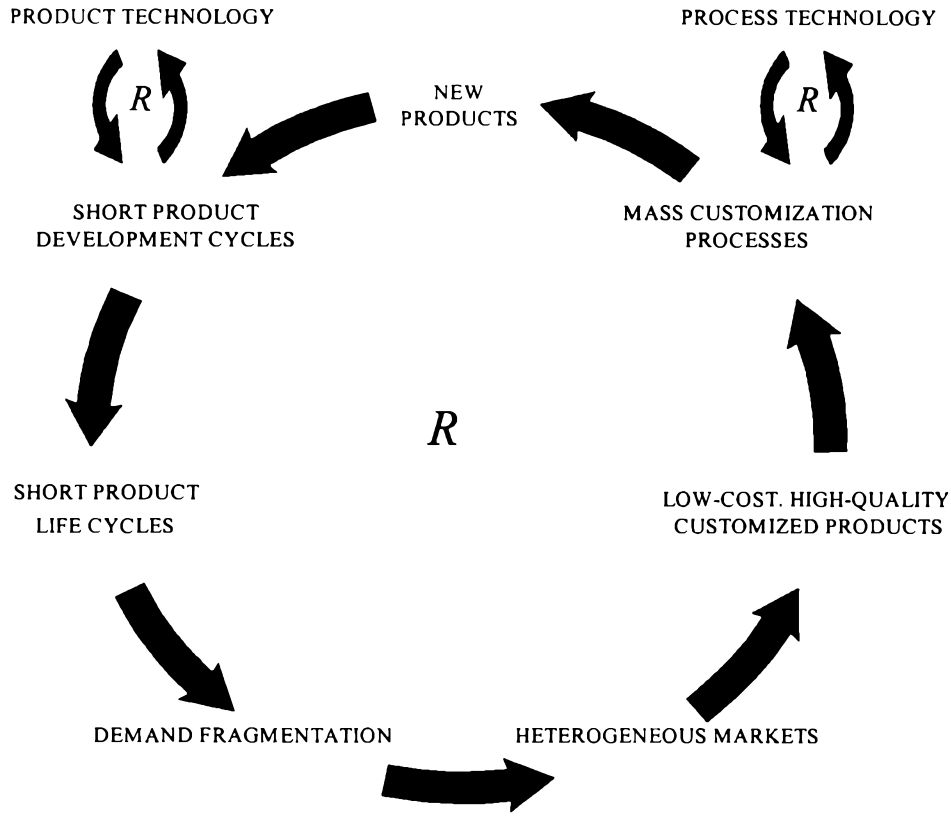
In traditional marketing, consumers are divided into more or less homogeneous groups during the segmentation process and then marketers try to sell them products meeting their certain average requirements which they earlier tried to predict. The goal of such marketing approach is selling as many products as possible to as many customers as it is feasible. The measure of success are market share and the quantity of products which have been sold [220].

Because of their interactive nature, the Internet and the WWW, allow or even in a sense force changes in marketer-consumer relationships, what requires implementation quite new marketing paradigms. The basic rule becomes that contacts between marketer and consumer are not one fold, but long lasting. Consumer is not any longer a passive recipient of information forwarded to him/her, but becomes actively and continuously involved in marketing process [186]. Instead of dividing customers into segments, as it takes place in mass marketing, individual information about each of them, his/her preferences and attitudes are collected in vast databases. In such marketing approach, far more important becomes psychographics instead traditionally used demographics [157]. Basing on gathered and permanently updated information about customers, feasible becomes **mass customization** defined as "*producing individually customized goods or services at the cost of standardized mass produced goods*" [38]. It can be accomplished by means of the following, not mutually exclusive, methods [226]:

- customizing services around mass-produced products and services,
- creating standardized, but customizable products and services,
- providing point of sale and delivery customization,
- providing instant response throughout the value chain,
- creating modularize components which allow for customization of final products and services.

Below, fig. 28 presents functioning of the mass customization system.

Fig. 28: *System of mass customization*



Source: [226]

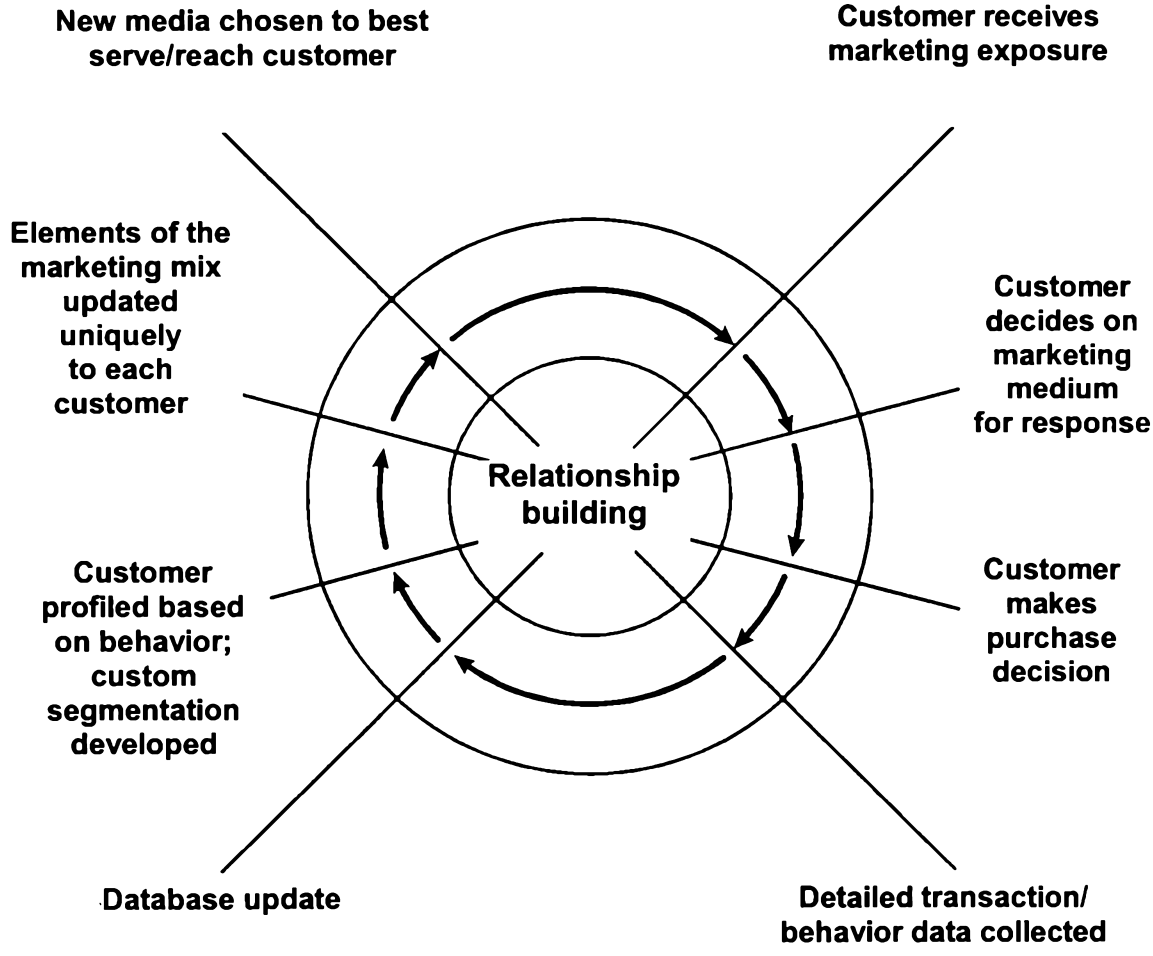
Mass customization of products and services is one of the paradigms of **one-to-one marketing** concept, which represents the new approach to marketing process. This concept was developed at the beginning of 90's by Peppers and Rogers. The key paradigm of this approach is "*close collaboration with customers*", but only "*one customer at the time*" [220]. The goal is establishing "*learning relationship*" between producer and consumer [227]. Since marketer's goal becomes as long as possible collaboration with customer, his or her task is not one-time sale of specific product, but rather providing customer with as many products as possible during as long time as possible. This new situation requires application of new metrics. It is advised that instead of traditional measure of success i.e. "*market share*", "*share of customer*" should be used. The one-to-one marketing concept assumes also "*differentiation of customers*", not only products as it takes place in mass-marketing. It is also suggested the necessity of establishing in organizations "*customer managers*" instead of commonly utilized product managers Their goal should be providing customers with

products which meet their requirements instead of finding customers for products as it takes place in mass marketing approach [220], [221], [227].

It is worth to underline that implementation of one-to-one marketing concept and establishing close relationship with customers is not an easy or short-lived task. So there are many examples of unsuccessful attempts [77], [182]. But in situation of increasing competition and diminishing level of customers loyalty, building mentioned above long lasting relationship between company and their customers seems to be an key issue. It's worth mentioning that some elements of one-to-one marketing concept appeared earlier. For example Glazer in [113] indicated that in information intensive environment, which the Internet is currently the best example, companies would concentrate on maximizing transactions with the same customers or that customers would participate in designing and creating products or services.

Referring to presented above new marketing approach, consulting company Gartner Group suggests new marketing cycle (see Fig. 29).

Fig. 29: *The new marketing cycle*



Source: Gartner Group in [157]

Let's take a closer look at it. The cycle begins when customer receives marketing exposure. The Internet or traditional media can be used to reach him/her. If customer is interested, he or she contacts with company choosing such medium which is the most convenient (e.g. e-mail) and deciding about the moment of contact and its form. After reviewing offer, customer decides to make purchase decision. In this moment customer behavioral data as well as information about transaction are gathered and databases are updated in real-time. Basing on collected information new customer profile is created or previous one is updated. According to gathered data, unique marketing-mix created and the best medium for reaching him/her is chosen. Important feature of the new marketing cycle that it is repeated as often as it is necessary, even every day. The comparison of traditional and new marketing approach has been shown in table 38.

Table 38. *Comparison of traditional and new marketing approach*

Marketing Area	Traditional Marketing	Technology-Enabled Marketing	Implications
Segmentation	Demographics	Behavioral	Use of databases
Advertising	Push	Pull	Interactivity
Promotion	Mass	Tailored	Reemergence
Pricing	Set by Firm	Set by Customer	Tailored Pricing
Sales management	Data with Sales	Data Shared	Mktg. and Sales Are Partners
Distribution channels	Intermediaries	Direct	Multichannel
New products	Constrained	Customer Driven	Mkt. Expansion
Areas of control	Share, Profit	Retention, Value	New Metrics

Source: Gartner Group in [157]

Application of described above new marketing paradigms, doesn't mean that traditional marketing will be abandoned. Some companies will probably still use it, other ones will try to utilize both marketing approaches, while firms which conduct their business activity solely on the Internet will base their performance mainly on principles of one-to-one marketing, because traditional one is not useful on electronic markets.

5.9. Utilization of electronic marketing in practice - examples

In spite of fact that we still have to do with infant phase of the Internet usage for commercial purpose, there are many interesting and profitable Web sites. Choosing those of them which are worth to be presented in more detailed way is very difficult and always other not less interesting examples can be found. Described below examples have been selected in such a way which allows for presentation the most interesting cases of the Internet utilization from various industries.

This review will be started with company which is probably the best example of understanding electronic market specificity and practical utilization of this knowledge. This firm is founded in July 1995 **Amazon.com**, digital bookstore which "*out of nowhere,(...) turned an industry up-side-down, using blitzkrieg tactics*" [94].

Fig. 30: *Amazon.com - the biggest Internet bookstore*

Source: [7]

In fact, appearing on the Internet four years ago, Amazon.com became almost from day to day, the biggest bookshop in the world. Its offer comprises 3 million volumes and significant part of them are sold at reduced prices. In case of more than 400.000 books the discount is between 20% and 40%, although there are items which are sold at almost 100% price reduction (for 1 cent). Also the number of customers is very impressive. At the end of 1998 it reached 6,2 million comparing to 1,5 million in 1997.

As to shopping at Amazon.com, after making choice, customer places selected book in virtual shopping cart and decides about such elements as wrapping or type shipment. After completing all steps he or she is informed about the final price

(which takes into consideration the country of destination) and in case when price is too high, every element of order can be changed. Payments for books can be made by means of credit card or check. In case of credit cards, information about them can be sent *on-line* (in encrypted form) or passed by phone or fax. Amazon.com also offers its customers possibility of automatic books ordering called "1-Click". After making at least one purchase, all information about transaction (shipping address, payment and shipping method) are remembered and can be automatically used without necessity of repeated filling out the order form as in case of standard order. Of course customer have possibility of changing this information when necessary.

The biggest in the world choice of books and their low prices are not the only elements deciding about the exceptionality of Amazon.com. The most important is establishing in the industry quite new forms of business performance.

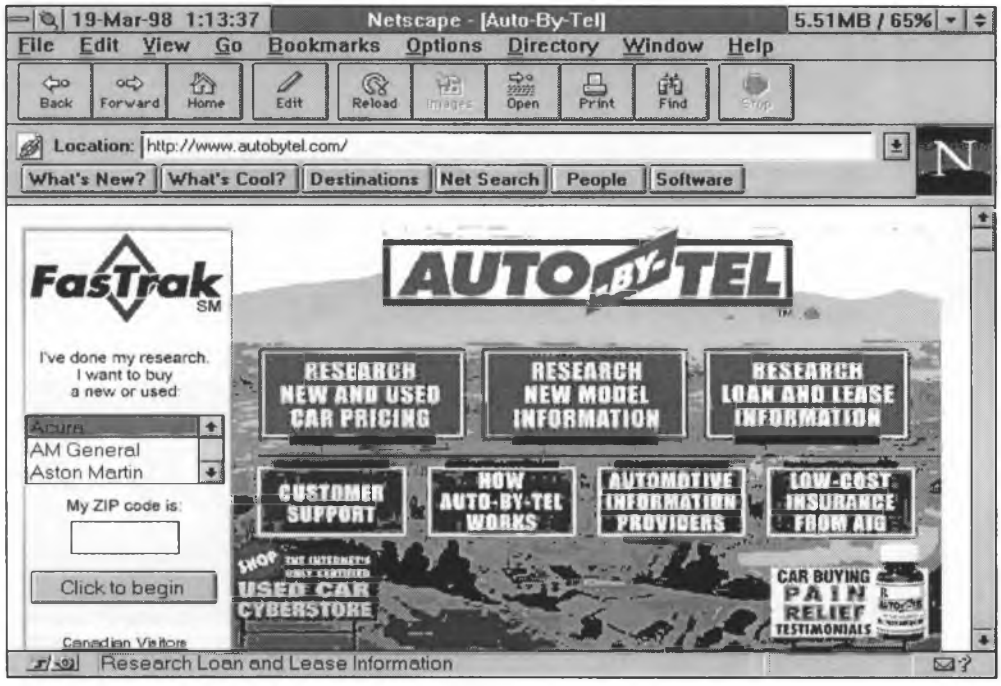
Company offers plentiful set of information related to every book. Apart from basic date like author, title, publication date, publisher etc., customer is automatically informed about three other books, which were usually bought by people who also purchased item he/she has chosen. Additionally customer have access to opinions about the specific book. They come from Amazon.com, publisher as well as from other readers who have opportunity of sending they comments together with rating (0-10). Customers have access to many other information. Amazon.com offers specialist books reviews as "New York Times Book Review", bestseller lists and various awards lists. There is also customizable "Recommendation Center" which suggests customers books according to area of their interest, favorite authors or basing on their previous shopping at Amazon.com. Customers can be also provided by e-mail with individual information about released new books from categories of their choice. What is very important, all those detailed information are available free of charge to everybody who is interested in them. Additionally there is also the "Gift Center", which offers various small gifts (T-shirts, mouse pads etc.). In 1998 company extended their offer by CDs and videos.

Since company's performance is very interesting and successfully utilizes the opportunities which arises on electronic markets, its worth to take a closer look at it. The most important fact is that Amazon.com offering customers 3 million books in fact doesn't have any. Company's offer it is mostly unusual set of information about books. Books are requested from publishers as orders from customers are placed and most of them are available in 24 hours. Almost from the beginning of its existence, company started building system of thousands cooperating with it virtual bookstores, called Amazon.com Associate. They are Web sites, which linking with Amazon.com offer their customers books related to specific subjects, receiving 8% commission. Also its worth to pay attention on complex, but very effective system of customer support. Apart from information available on WWW pages, customers can also contact company by means various e-mail addresses, depending on type of assistance they need (difficulties with finding specific book, technical support, mistakes in directories, feedback, suggestions, press releases etc.). Support is also available by phone or fax. At the end it is necessary to mention one more very important issue. The most significant difference between Amazon.com and traditional bookstores is unusual amount of information about their customers, which is stored in databases.

Company knows many details about them: first as well as last name, credit card number, address and what is most important, Amazon.com is familiar with their preferences. In traditional bookstore a customer is almost always anonymous [7], [241], [272].

In quite different industry has been operating over the Internet, since June 1995, company called **Auto-by-Tel**.

Fig. 31: *The Web site of Auto-by-Tel*



Source: [17]

It is a network of more than 2.700 accredited dealers from U.S. and it allows customers to purchase over Internet various models of cars at competitive prices. The offer comprises both new and used vehicles. Customers have also opportunity of applying *on-line* for low-cost financing rates and leasing. Cooperating with Auto-by-Tel the largest American insurance organization, American International Group (AIG), also offers vehicle insurance on easy terms.

Let's take a look at performance of Auto-by-Tel. Visiting company's Web site customer can review prices of various cars, new and used ones. Additionally consumer has easy access to other information about models which are interesting for him/her. After making decision customer chooses vehicle's manufacture and enters own zip code. Pressing *Begin* button he or she submits above mentioned information and initiates process (lasting about 5 minutes) during which consumer is asked to provide some additional data about himself/herself and the car he/she wants to buy. All those data are transmitted to the nearest accredited dealer, who provides customer with offer within 24 hours. Consumer can also submit a finance or lease request, which is processed at the same day. In case when customer accepts dealer's offer,

they arrange date of car delivery and all necessary documents are prepared. It is estimated that so far about 1 million people from U.S. and Canada made use of service offered by Auto-by-Tel and over $500 million monthly car sale was a result of usage their Web site. It is necessary to underline that service of Auto-by-Tel is free of charge for customers, while dealers are charged between $500 and $2500 depending on brand they sell, location or size of area they are responsible [16], [17].

Also the next company, **RelianceDirect** (previously **InsureDirect**), operates in automotive industry. It offers their customers through its Web site opportunity of *on-line* auto insurance in a convenient way and at competitive prices.

Fig. 32: *RelianceDirect - on-line auto insurance*

Source: [238]

The whole process is highly individualized. It starts from providing system with required information about car, mileage, mileage per year, vehicle user etc. On the next day customer receives by e-mail insurance quote. If consumer needs any additional information before contract signing he or she can contact company by e-mail or phone [238]. Offer of RelianceDirect seems to be very attractive comparing to other insurance organizations. In case quoted in [79], annual premium proposed by RelianceDirect was $2900, while another company requested $4300 for insurance policy with similar coverage.

Although banking industry treated for a long time the Internet very distrustfully (see [301]), there are banks that started their *on-line* activity very early. One of the pioneers is American **Security First Network Bank** (SFNB). It was first bank worldwide established especially for providing customers with *on-line* service [56].

Fig. 33: *SFNB - the first Internet bank*

Source: [251]

This bank located in Atlanta, offers *on-line* their products and service for 24 hours, 7 days a week. SFNB describes it as *"a higher form of banking"* and their offer comprises:

- basing and interest checking accounts including electronic bill payments,
- savings accounts,
- Certificates of Deposit (CD)
- Visa Cards (Classic and Gold).

Additionally SFNB provides their customers with service from MACRO*WORLD Research corporation. It allows consumers for access to numerous financial information as:

- news about companies and their business activity,
- trending charts as well as market and investment indices,
- information about over 16000 stocks,
- ratings from top analysts,
- customized portfolios, update everyday by e-mail.

Security First Network Bank assures that their security system is completely safe although it operates in open network. In order to support this claim bank created system called SFNB-NoRisk Guarantee (SFNB-NRG), which states that 100% founds will be reimbursed in case when money was removed from customer's ac-

count without his or her authorization and it was caused by faulty SFNB's security system or human/system error caused by SFNB. Above mentioned products and services are currently available only to U.S. residents [251].

In a very innovative and interesting way utilizes the Internet **Federal Express**.

Fig. 34: *The Web site of Federal Express*

Source: [98]

Company is the biggest in the world express transportation company, delivering everyday more than 2,5 million packages in 210 countries. In order to cope with such an amount of parcels, Federal Express operates more than 560 aircrafts, 37.000 vehicles and employs about 124.000 people. Usage the Internet for improving and extending the scope of services is really impressive. Company implemented deep redesign of their business processes, based on utilization of the Web. For its achievements in this area company received CommerceNet "Very Innovative Practice Award for 1996", in category: "Customer Service, Best New Business Model" [55].

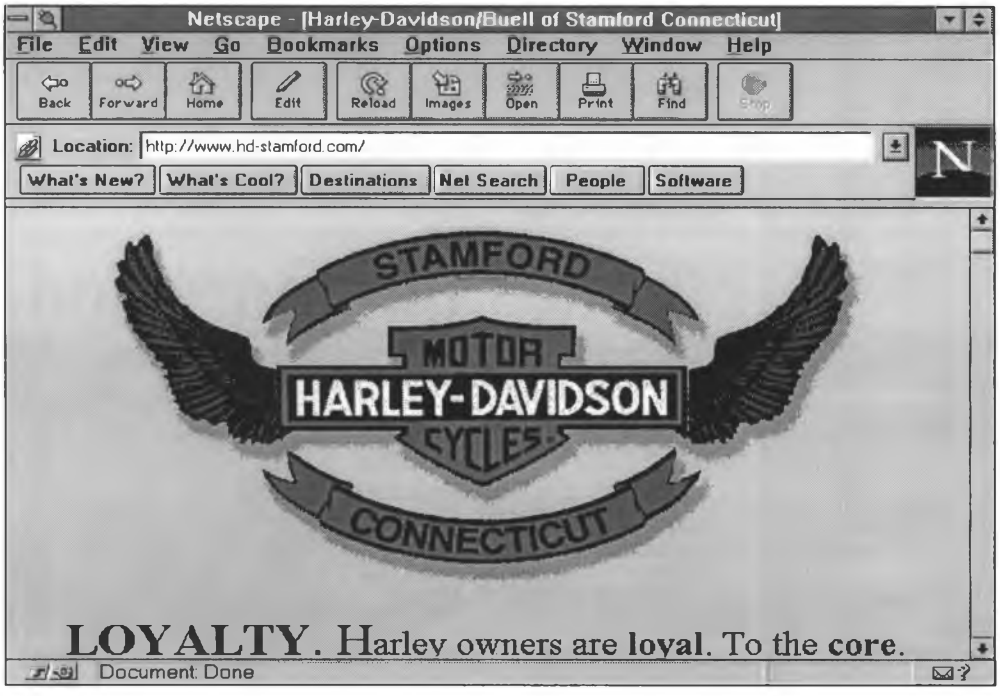
Basic Internet service, which is offered by Federal Express from November 1994, is possibility of tracking by customers the way of packages they have sent. Previously a customer who wanted to receive any information about his/her parcel had to call an operator and ask him or her about it. Currently customer links with the Web page, enters package tracking number and immediately receives information where in the world his/her parcel is at the moment. Federal Express estimates that this new way of work saves about $3 to $5 per phone call and annual savings of this system usage are assessed to $2 million [48], [58]. Packages tracking was the first step company made for the Internet utilization in their business activity. The next one Federal Express made in July 1996 releasing FedEx interNetShip service. It was the

first available on the Internet automated shipping transaction, which allowed for sending packages from 38 countries to more than 170 countries worldwide. To start using this service a customer must register with FedEx in order to obtain two necessary numbers. First one he/she must get is FedEx account number, which is essential also for other services. In order to receive it customer *on-line* provides system with his/her personal data and credit card number. Next, in order to obtain FedEx interShip User ID, he/she inputs name, account number and pickup address. After finishing this one-fold process, customer completes *on-line* shipping information. Next, program generates a unique bar-coded label (Air Waybill), which the customer prints on his/her laser printer and attaches to the parcel. The last step is *on-line* arranging for courier to pickup the parcel. This option is currently available only in U.S., Canada and Puerto Rico, while in other countries it is necessary to call customer representative. It's worth to add that consumers can easily obtain information about current FedEx rates, using *on-line* Rate Finder [96], [97]. In 1998, FedEx estimated that value of *on-line* orders was over $1.5 million [48].

In October 1996 Federal Express informed about releasing the next Internet-based service. Initially it was called FedEx BusinessLink and next it was changed to FedEx Virtual Order. This service is aimed at companies of any size that want sell their products on electronic market, but do not have necessary infrastructure. With support of FedEx they can operate on global market without any additional investments in customer service or warehousing. The only element which is required is own Web site. Using delivered by FedEx software called VirtualOrder Publisher, company creates own *on-line* catalog, which resides on FedEx secure server and is integrated with firm's Web site. Buyers from the whole world can search through this catalog and place their orders. Every order receives individual number and is sent to customers Web site for confirmation. When it is completed, system generates shipping label and the only thing company have to do is packing ordered item as well as placing prepared label on it. In case when company uses fully integrated system, information about order can be transmitted to the warehouse for automatic inventory updates. Finally, package is picked-up by FedEx representative, while both customer and company can track its status [95].

Harley-Davidson/Buell of Stomford is a Connecticut dealer of famous Harley-Davidson Motor Company.

Fig. 35: *Harley-Davidson/Buell of Stomford*



Source: [124]

It is a quite small company employing fifteen people with gross annual sale between $3 million and $4 million. With support of Tenagra Corporation, Harley-Davidson/Buell of Stomford established the Web site in order to create international presence which would lead directly to concrete sales. It was specially important because of their lack of distribution channels and large advertising budgets. Not less important motivation for establishing own Web site was attempt to create close relationship between a company and Harley enthusiasts worldwide. So this site contains service information, a calendar of various Harley-Davidson events, Racer's Corner as well as T-shirt contest rewarding those of Harley users who send the best own picture. Commercial part of the Web site promotes Harley-Davidson and Buell motorcycles, offers direct sales of spare parts, collectibles, clothing and other accessories. The average gross sale generated through their Web site is estimated to over $1000 a week. The credit card is a basic payment method. Although company's Web site is on insecure server, customers generally don't afraid to use credit cards. Consumers have also possibility of registering their address and billing information, while they can place orders by e-mail, authenticated with a password. Customers calling from U.S. can also place their orders using a toll-free number. Harley-Davidson/Buell of Stamford seems to be a very good example showing that electronic marketing can be very useful for small companies, enabling them to compete with big corporations even with much smaller budgets [124], [168].

An interesting example of the Web sites, which allows for comparison shopping is **Bottomdollar.com**.

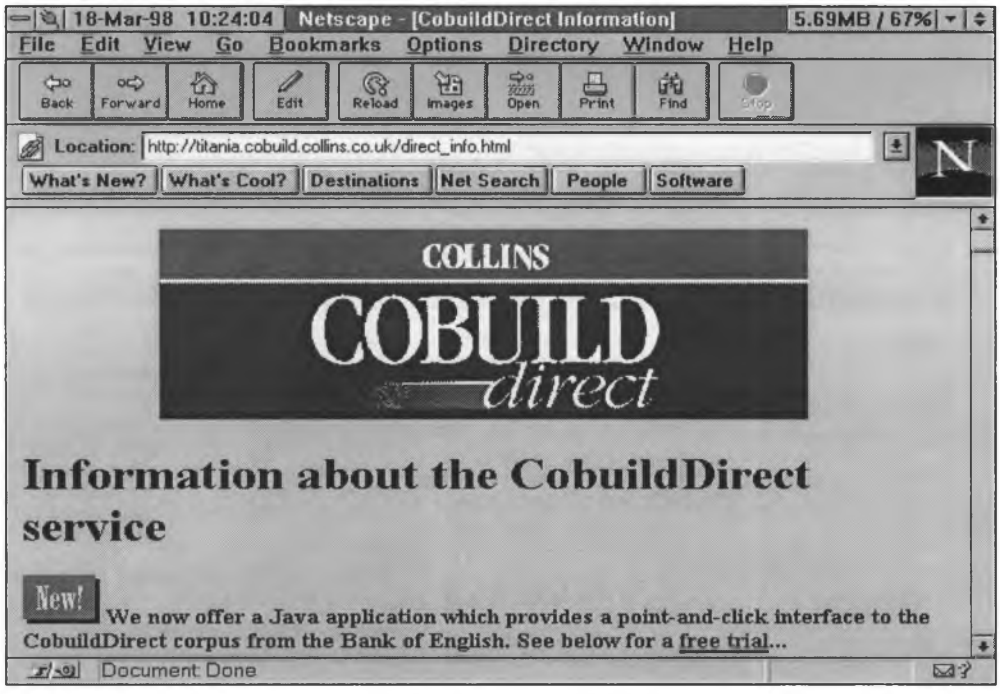
Fig. 36: *The Web site of Bottomdollar.com*

Source: [29]

One of the first such sites was Bargain Finder, an experimental service introduced by Anderson Consulting as a part of the Smart Store Virtual initiative investigating an electronic commerce. It allowed for finding the cheapest pop or rock CDs from nine virtual retailers. Bottomdollar.com enables customers to compare prices of much more products. Their Web site contains 13 channels comprising: books, electronics, flowers, fragrances, hardware, magazines, movies, music, software, sporting goods, toys/baby products, video/PC games, other. Some of channels are also divided into topics (in case of software and hardware there are 13 various topics). Usage of Bottomdollar.com Web site is very easy. Customer selects channel he/she is interested in and inputs data about specific product (e.g. in case of CDs it is information about artist's name and album's title). System searches various *on-line* merchants and displays information about best available prices on specific product. Bottomdollar.com issues also own electronic newsletter which allows customers to receive information about various interesting offers and bargains. It seems that importance of such Web sites, offering similar services will be growing with electronic commerce development and rapid increase of commercial Web sites [29].

Very specific kind of service offers famous English publisher Cobuild, which is a part of the School of English at Birmingham University. Cobuild is widely known mainly for its very good dictionaries. Their *on-line* service called **CobuildDirect** seems to be specially useful for teachers of English, students, researchers of English language, translators, editors or authors.

Fig. 37: *The Web site of CobuildDirect*



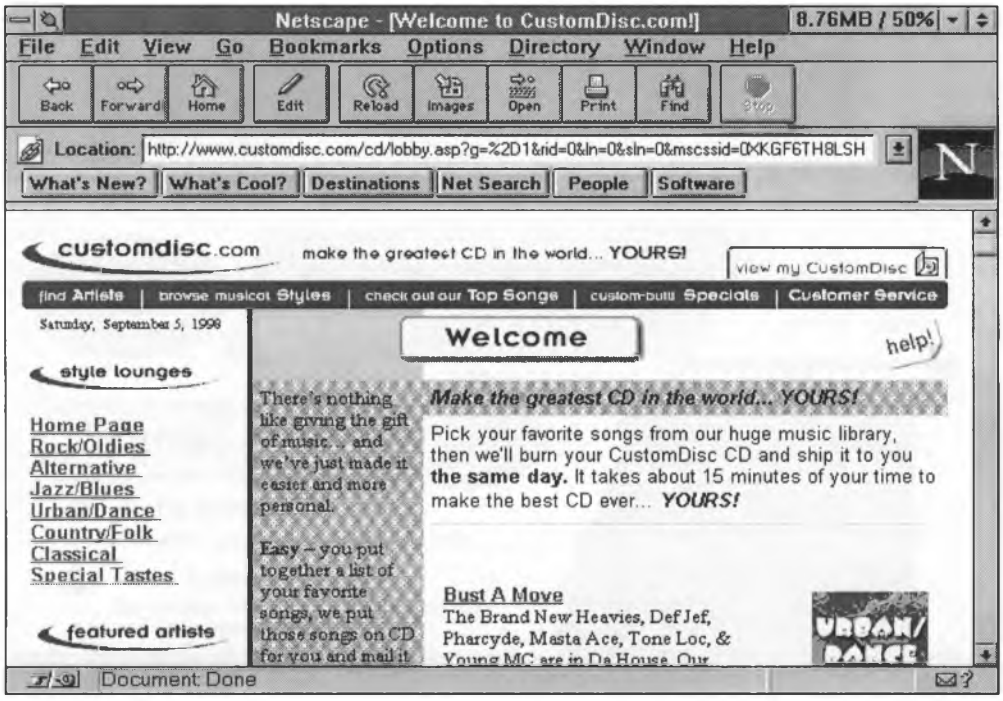
Source: [51]

CobuildDirect is a paid service which allows customers to access the huge database containing fifty million word corpus selected from numerous sources, chosen from the Bank of English. They come from transcribed speeches, radio broadcasts, books, newspapers, magazines, personal letters, advertisements, leaflets, brochures etc.

In order to use CobuildDirect service, customer's computer must be able to make telnet and FTP connection. He/she must also pay six-month or full-year subscription (respectively 300 and 500 pounds). There are two forms of payment for a service: credit card and on invoice. As far as payment by credit card is concerned its details can be sent to Cobuild Ltd. by post, phone or fax. After registering and paying subscription, customers receives ID which allows him or her to log in at one of Unix servers and use database. There is also available a mail service for people who don't have access to the Internet. It seems that CobuildDirect service shows that the Internet is a very good place for any kind of electronic commerce, even very specialized one [51].

Another interesting Web site is **CustomDisc.com**, which offers customers customized CDs.

Fig. 38: *CustomDisc.com - customized CDs on-line*



Source: [62]

They can select songs from more than 100.000 titles licensed by company. Customers can choose as many songs as they want, but their total time can not exceed 70 minutes. Before making choice consumers can listen to songs excerpts. Fully customized disc is not expensive. Initial price is $5,99 and it comprises blank CD, case as well as printing costs. Additionally customer is charged for each song (most of them are $0,99). The average price of customized CD containing 10 songs is about $15,99 plus shipping costs. In case when customers are not satisfied with disc quality, they can return it within six months [62].

One of the most famous Web sites operating in tourism industry is **Internet Travel Network**. Company has been functioning from May 1995 and was the first firm offering travel products/services via the Web [56]. At the beginning of 1999 the number of their registered users exceeded 5 million [145].

Fig. 39: *ITN - the first company offering travel services over the Internet*

Source: [145]

Company prepares their offer for three groups of customers: corporate travel managers, travel agencies and individual travelers. The basic scope of ITN's service comprises booking of air, car, hotel and vacation tours. All information about availability of air tickets, hotel rooms, cars in rental companies as well as their prices can be accessed in real-time. Individual customers can use all options free of charge after registering. As to booking of air tickets, ITN has direct access to main reservation systems (CRS) as Apollo, System One, Worldspan, Galileo, Sabre and Amadeus. Company sells tickets of more than 300 air carriers at lowest prices. When reservation of hotel rooms is considered, customer can make it at one of 33.000 various hotels worldwide. Referring to renting cars, ITN co-operates with 50 car rental companies. Additionally customer have access to various travel resources. Purchasing air ticket via ITN's Web site customer can use one of two options. One possibility is *on-line* payment after making reservation or alternatively he/she can do it at one of 3.000 co-operating travel agencies. ITN claims to be the only Internet company offering such opportunities.

As travel agencies are considered, ITN offers those of them, which have access to CRS possibility of making *on-line* bookings. In case when agency has own Web site such a function can be added to their WWW pages. Otherwise ITN offers possibility of establishing on own server a Web site under organizations own name and with unique URL, equipped with *on-line* booking possibilities. Similar type of service is offered to corporate travel departments of various corporations, organizing trips for their employees. ITN co-operates, for example, with World Bank and Texas Instruments [145].

Another organization successfully offering *on-line* travel services is **Preview Travel**. It was established in May 1996 and currently it belongs to 50 largest American travel agencies.

Fig. 40: *Preview Travel - one of the most successful Web sites*

Source: [233]

In 1998, their gross bookings was $200,1 million and the number of register subscribers was over 6 million. Preview Travel is one of the most awarded travel Web sites. In January 1998 company was selected by prestigious Business Week as one of "Web Sites to Watch in 1998". A year earlier it also received few awards like "Best of the Web" from HomePC and Gold Award in Lowell Thomas Travel Journalism Competition for Best Electronic MultimediaPresentation.

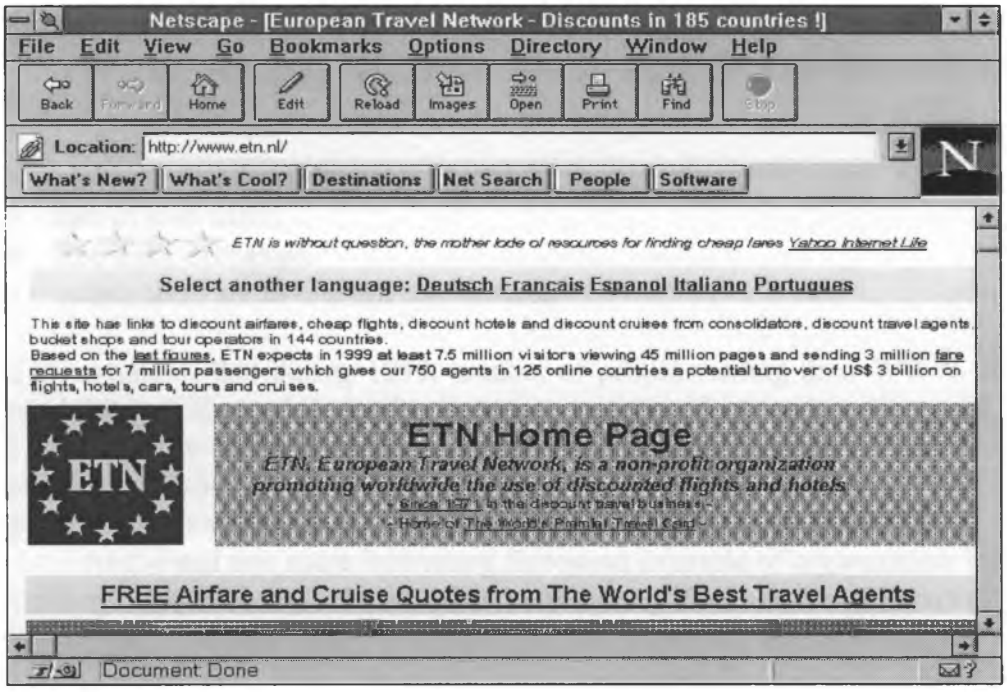
Preview Travel offers their service for individual and small-business travelers. Company allows their customers to book air tickets on more than 500 airlines by means of Apollo reservation system. In finding best fares very useful if option called Farefinder. Payments for air tickets can by made by means of one of four credit cards Visa, MasterCard, American Express and Discover. In order to deter false booking customers must provide system with credit card details during making reservation. A card is charged just after entering all required information. Credit card details are not collected by Preview Travel, but passed to specific airline. Tickets are sent to customers by U.S. mail without any extra charges. Currently Preview Travel issues air tickets only to people living in U.S., Canada and Puerto Rico. Company offers also e-tickets, but they are not available in every case. Customers can also make a room reservation in one of 13.000 hotels around the world and reserve a rental car from the main agencies. Also in this case it is essential to enter *on-line* credit cards details.

Additionally Preview Travel offers their customers cruises to many destinations worldwide and vacation packages. Company's WWW pages offer a lot of information useful for travelers, including Business Travel Center containing travel tips for business travelers. Every customer have to register, providing system with some basic information about himself/herself and his/her preferences. They are used to create personal profile, utilized during next bookings [233].

At the end of March 1998 Preview Travel signed an agreement with Lycos, the leading navigation Web site. As a result of this two year, $4,25 million agreement, Preview Travel became the exclusive travel reservation provider on Lycos' Travel Web Guide and Travel Network [12].

One of the most interesting European examples of travel related Web sites is Holland-based **European Travel Network**. It is non-profit organization founded in 1971, which goal is promoting travel at discounted prices.

Fig. 41: *European Travel Network Web site*



Source: [90]

Because of their contacts with suppliers of travel products and services from 144 countries worldwide, company offers travelers through own Web site the cheapest air tickets, cruises, hotel reservations etc. ETN co-operates also with 750 travel agencies located in 125 countries. Company collaborates only with those agencies which are the best at local market and which have direct agreements with tourist service providers (airlines, hotels etc.) what guarantees lower prices. Co-operation with European Travel Network is possible after sending specific form and its acceptance. The offer of ETN is very rich and it's difficult to present all their details. From traveler point of view the most important elements are:

- possibility of hotel rooms reservation with 50% discount,
- possibility of *on-line* air tickets booking at lowest prices directly with airlines and with support of travel agents from 80 countries,
- opportunity of booking discounted cruises,
- possibility of purchasing European Bus Pass which allows for unlimited, 30 days travel across Europe,
- discounts from many hotels and restaurants,
- access to interesting travel related information, including newsgroups devoted to tourism,
- possibility of *on-line* finding travel companion,
- last minutes offers for people wanted to leave within 2 weeks,
- possibility of purchasing special discounts cards as European Hotel Discount Card, USA Hotel Discount Card or Worldwide Hotel Discount Card,
- access to cheapest European car rentals.

Interesting part of ETN's offer are the Internet phone and fax calls. They allow for discounts up to 90%.

Co-operation with ETN can be also profitable for travel agencies. Company allows them for:

- placing free advertisements,
- sale of own offer,
- free links exchange,
- information about tourism conferences.

ETN estimates that during 1999, number of people visiting their WWW pages will reach $7,5 million, while total turnover on travel products and services will climb to $3 billion. It's worth to mention that in 1996 company received award from European Commission in competition "European WWW Business Award '96". In category "Very Small Business", ETN was classified on the second place [90].

At the end one more interesting European example of organization from travel industry. This Web site is Norwegian travel agency **Thomen TravelMart** (TTM).

Fig. 42: *Thomsen TravelMart -on-line last minutes offers*

Source: [279]

It operates on the WWW as electronic intermediary of Norwegian tour operators and is specialized in last minute offers. In this case it means that date of tourist's arrival is no longer than one week from a date of purchase. Prices offered by Thomsen TrvelMart are lower up to 40% from regular ones and are not available elsewhere. Tour operators place their offers free of charge, but company charges 10% from completed transactions. Products offered by Thomsen TravelMart comprise: summer houses, apartments and hotel rooms, trips to popular towns, fishing and skiing cruises. Tour operators can place their offer filling out the reply-form which they receive every Monday morning from TTM by fax. The reply-form must be sent back before 12 a.m. at the same day. It allows TTM to update their home page on the Web each Monday afternoon. Products can be booked by customers by means of *on-line* form (previously it was e-mail) starting from Tuesday. In case of orders forwarded during office hours, the confirmation is sent within 4 hours, otherwise within 16 hours. There are two methods of payment acceptable for Thomsen TravelMart:

- directly to TTM's bank ,
- by means of Visa card.

Customers pay in advance. In order to confirm their payments company uses tele-bank program developed by Den Norske Bank. After receiving payment confirmation, TTM sends customer a voucher containing description of the travel route and booking number confirming transaction [26], [279].

6. Exploitation of electronic marketing for implementing changes in travel agency - case study

6.1. Description of the travel agency before reengineering

6.1.1. General information

TravCom [24] is one of the biggest Polish travel agencies, founded in April 1983. It is one-person owned company with its head office located in Opole. It has two subsidiaries in Poznań and Kędzierzyn Koźle. TravCom also cooperates with five travel agencies located in Kraków, Zabrze, Katowice, Wrocław and Przemyśl which were previously its subsidiaries. Today they take TravCom name, but are independent. The owners of them are their previous managers. These travel agencies sell mainly TravCom products and tickets, but their offer is not limited only to it.

TravCom concentrates its operations mainly on south-west part of Poland. It doesn't lead any business activity above the line Poznań-Warsaw and management has no intention to change this situation in the future. There are exceptions for some travel agents from Bydgoszcz and Gdańsk which sell TravCom's offer. People from these cities start their journey from Warsaw or Poznań. Percentage of offers which are sold in different areas of Poland is shown in table 39.

Table 39. *Percentage of TravCom offer sold in different areas of Poland*

Part of Poland	Percentage
South-west	80%
The rest area	20%

Source: Own Source

TravCom's offer is aimed at richer part of middle class customers. It's not very expensive because it is based on the coach transport. There two main types of customers: individual and group ones. Their percentage share is shown in table 40.

[24] TravCom (pseudonym)

Table 40. *Share of individual and group customers in TravCom*

Customer type	Percentage
Individual	93%
Group	7%

Source: Own Source

Company wants to increase the percentage of their offer sold to group customers to the level 10% ÷ 12% in this year. Since there are strong relationships between this region of Poland and Germany significant amount of customers are Germans. It comprises mainly hotel's services and coach ticket sale in Germany. Percentage of Polish and German customers is shown in table 41.

Table 41. *Share of customers from Poland and Germany*

Customer's country of origin	Percentage
Poland	76%
Germany	24%

Source: Own Source

As hotel customers are considered, 80% of them stay there because of their business activity.

TravCom owns 13 luxury coaches (using Polish plates) and additionally 8 similar coaches which are leased in Germany (they use German plates). Also 2-3 coaches are hired from other companies on the base of longtime agreement. TravCom possesses some minibuses as well. Company is also the owner of medium-sized hotel.

TravCom employs 151 full time people and additionally about 65 part time workers during the season (50 tour guides, 15 coach drivers). The structure of employment is given in table 42.

Table 42. *Structure of employment in TravCom*

Area of employment	Number of people
Hotel personnel	42
Transportation (drivers and supporting staff e.g. mechanics)	63
Head office (including full time tour guides)	37
Accounting	9

Source: Own Source

6.1.2. Scope of activities

TravCom is a tour operator and prepares its offer for summer season. During the winter it sells other travel agencies offer. It is possible that soon company will be preparing its own winter offer for Austria and Italy based on transportation by its own coaches.

The offers are prepared mainly on the base of long-term cooperation with service providers from countries of destination. TravCom's owner and its employees personally contact them in order to negotiate all conditions. Tourist fairs are only used to discuss details and to get in touch with other tour operators. It also happens that TravCom buys complete offers from other tour operators (e.g. trips to Norway).

TravCom has its own regular coach line from Poland to Germany (and back) based on fixed schedule. For other destinations coaches are hired from other travel agencies. Transport of people in luxury coaches is the most important business activity of TravCom. All areas of company's activities are as follows:

- outgoing tourism i.e. 90%
  - holidays in Spain and Croatia
  - short trips to:
    * Paris
    * London
    * Benelux
    * Norway
    * Spain
  - offer from other tour operators
- arrival tourism 10%
- transportation

- sale of air tickets
- service offered by own hotel

6.1.3. Distribution channels

Coach tickets are sold through 160 agents in Poland and Germany. Company permanently cooperates with over 20 coach liners in selling coach tickets. Generally they are sold in offices, although in Germany there is also a possibility of making reservation by phone. Payment confirmation has to be sent by fax and the ticket is received by a customer in the coach.

As to vacation packages and short trips, they are sold traditionally, i.e. customer signs agreement and pays for the product at the office. This method is used in own offices and by cooperating travel agencies. The same relates to air tickets. There is no possibility of installment sale, because of bad experience of other travel agencies which reported significant complaint rates increase from the level less than 1% to 30%. Currently TravCom also does not provide customers with last minute offers because own bad experience from the past (price conflicts between customers who paid regular price and those who bought products on discounted base).
TravCom accepts four methods of payment:

- cash (the most widely used),
- checks,
- bank transfer,
- credit cards (not for all products).

Customer support system is mainly based on traditional (face-to-face) contact between client and TravCom worker as well as on phone an fax usage. There is also available e-mail contact.

6.1.4 Promotional activities

As to promotional activities, during the spring, TravCom prints full-colored catalog with their offer for the summer season. This catalog is sent to all previous customers. It is also distributed to the subscribers of "Tourist Market", magazine bought mainly by few thousand travel agents in Poland. Catalog is also available at TravCom offices, free of charge. Company buys press advertisements mainly during the season. Also some commercials are bought on local radio stations. TravCom sponsors the cultural events as the festival of Polish Songs, philharmonic or theater performances, what gives it opportunity for placing in programs and on posters its name as well as logo together with short information. Generally TravCom does not buy TV commercials, because they are too expensive, but sometimes it participates as a sponsor in some TV competitions what gives opportunity of promoting its name and logo. Another way of promotion is preparing various gadgets with printed TravCom's name and logo (ball-pens, calendars etc.). Twice a year TravCom participates in tourist fairs where it presents its offer. There are small tourist fairs in

Katowice in spring and second the most important which are held in Poznań during late fall (November). For presenting their offer, company also uses the Web site.

TravCom has its own Web site which is in Polish language only. There are three main elements of it: Transportation, Hotel and Tourism. "Transportation" pages contain information about TravCom's coach connection between Poland and Germany. There are tables containing ticket prices and schedule with times of departure from various Polish as well as German cities. "Hotel" pages contain information about the hotel, its rooms and other facilities. On the pages called "Tourism" there are information about both vacation packages and short trips. Every day of trip is characterized and images from the country of destination are added. Descriptions of vacation packages (to Spain and Croatia) contain among other information, short characteristic of optional hotels. TravCom's Web site also contains addresses and other contact information (phone and fax numbers), including one e-mail address. No interactivity is available and there are no possibilities of making any bookings *on-line*. The Internet is used just as another communication channel and the Web site is one more promotional tool only.

6.1.5. IT systems usage

In the head office, computers are connected by Novell network. Program written by Polish software company is used for sale of holiday packages and short trips. It is for inner usage only and there is no link between this system and the Internet.

For coach ticket sales management TravCom uses program called "Skora". System links with agents selling tickets in Germany via Internet. All information about the sale of coach tickets are gathered in main server located in Cracow and can be downloaded when it's necessary. Agents selling these tickets in Poland currently can't access this system by means of the Internet.

In the head office TravCom has access to CRS system Star-Amadeus. It is used for selling Neckerman's offer and making air tickets reservation as well as sale.

6.2. Motivation for changes

Analysis of current TravCom functioning leads to many conclusions. The most important one is that company can make its performance much more effective and can improve its competitive position by involving Internet into its business processes, but it requires implementing deep changes in them. Although, as it was described earlier, company uses WWW for its purpose, but it is made in a very passive way. It seems to be a very common case of establishing an "informational" Web site without having a more general vision of the Internet usage for company's purposes and without leading any analysis of possible advantages.

In fact TravCom can utilize Internet for far more goals (objectives) than providing customers with *on-line* version of its catalog. As the most important ones can be identified:

- creating much more effective promotional system, by integrating Internet with existing communication channels,
- customization of products and information ,
- creating much more effective customer service and support system,
- establishing new, direct sales channel for all company's products,
- collecting detailed information about customers and their expectations,
- creating more effective system of information flow inside the company, automation of many elements of business processes

This will allow for achieving the following goals:

- building closer relationships with customers increasing their retention,
- reaching new customers, especially those living in the area where TravCom products where so far are not sold (both in Poland and Germany),
- improving competitive position,
- enhancing company's logo and name awareness,
- bypassing intermediaries and reducing sales costs,
- increasing sales through existing channels,
- reducing customer support costs,
- decreasing overall company's costs.

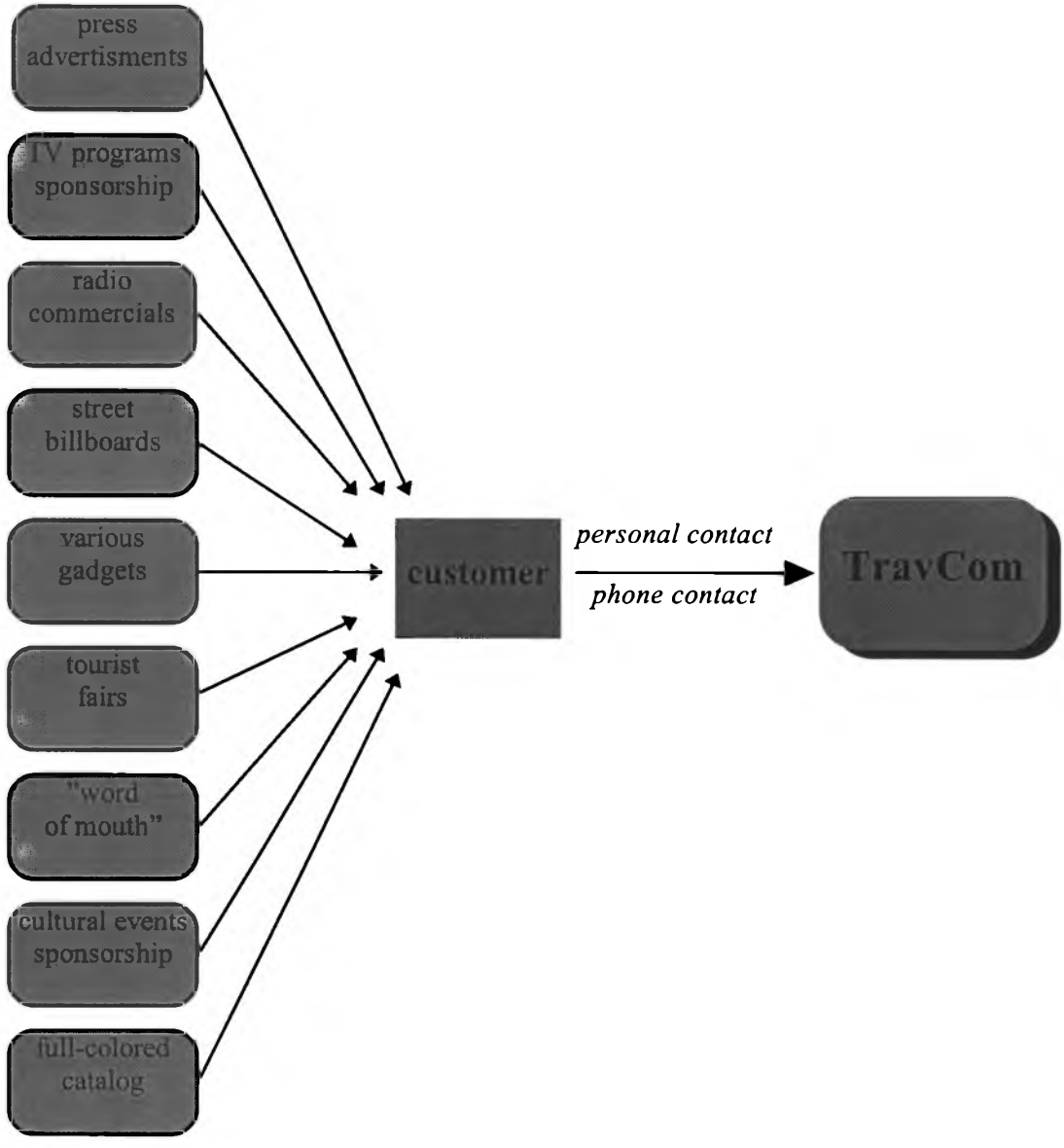
This leads to the conclusion that the most urgent redesign is necessary to be implemented in sales and marketing process and this process should be a goal of reengineering.

6.3. Exploitation of the Internet in company's promotional system

Although there are companies which use Internet as primary communication channel, but it relates mainly to those of them which operate solely or mostly *on-line*. In case of firms which lead their activities generally through traditional channels, as TravCom does, Internet should be seen as an element of the wider, integrated promotional system. Because of this fact, its exploitation have to be synchronized with other elements of this system in order to make it more effective as a whole.

Before involving Internet into TravCom's promotional system, it was based on press advertisements, radio commercials, street billboards, sponsoring cultural events (what allows for placing logo and name in programs as well as on posters) and TV programs (exposing company's name and logo), tourist fairs, various gadgets containing basic information about company (calendars, ball-pens etc.), self printed catalogs and " word of mouth ". Customer interested in TravCom offer had two ways of contacting company. He/she could call and ask for details about interesting for him/her product or come personally to the office (see Fig. 43)

Fig. 43: *Promotional system in TravCom before Internet usage*

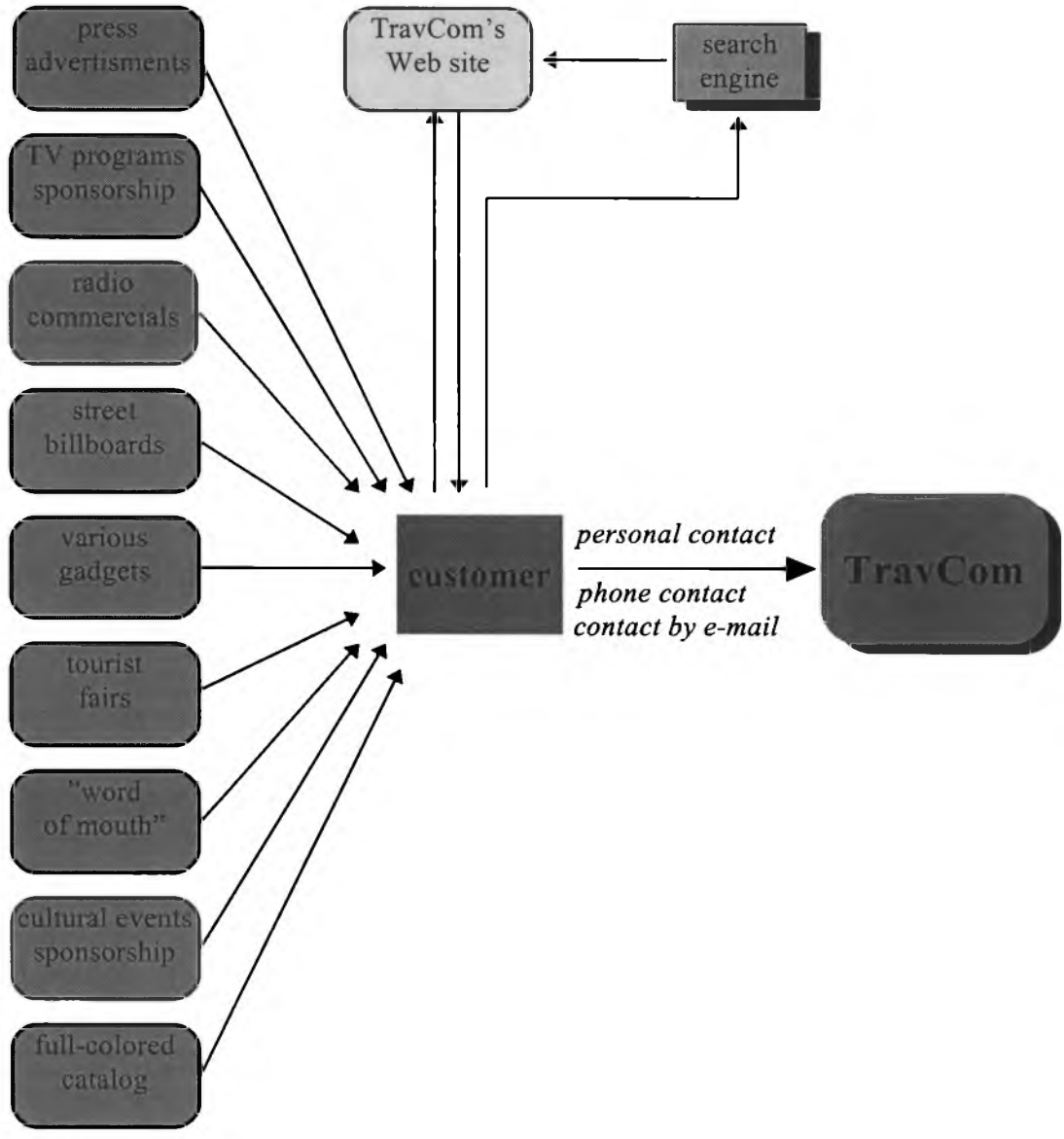


Source: Own Source

Adding the Web site to the promotional system haven't improved relationship with customers in any way. It only gave them an opportunity of accessing information about TravCom offer by means another medium. What's more, customers mostly, are not aware about WWW pages existence, because URL is not placed anywhere. The only way for them to find it is "guessing" address or use of search engine for this purpose (although the results are not very encouraging - see 6.7). Because of this fact company does not utilize the possibility of creating "promotional chain" in which press advertisement or radio commercial gives a short note only about the of-

fer, but points to visit the Web site in order to read more detailed information (see Fig. 44)

Fig. 44: *Promotional system in TravCom after adding the Web site*



Source: Own Source

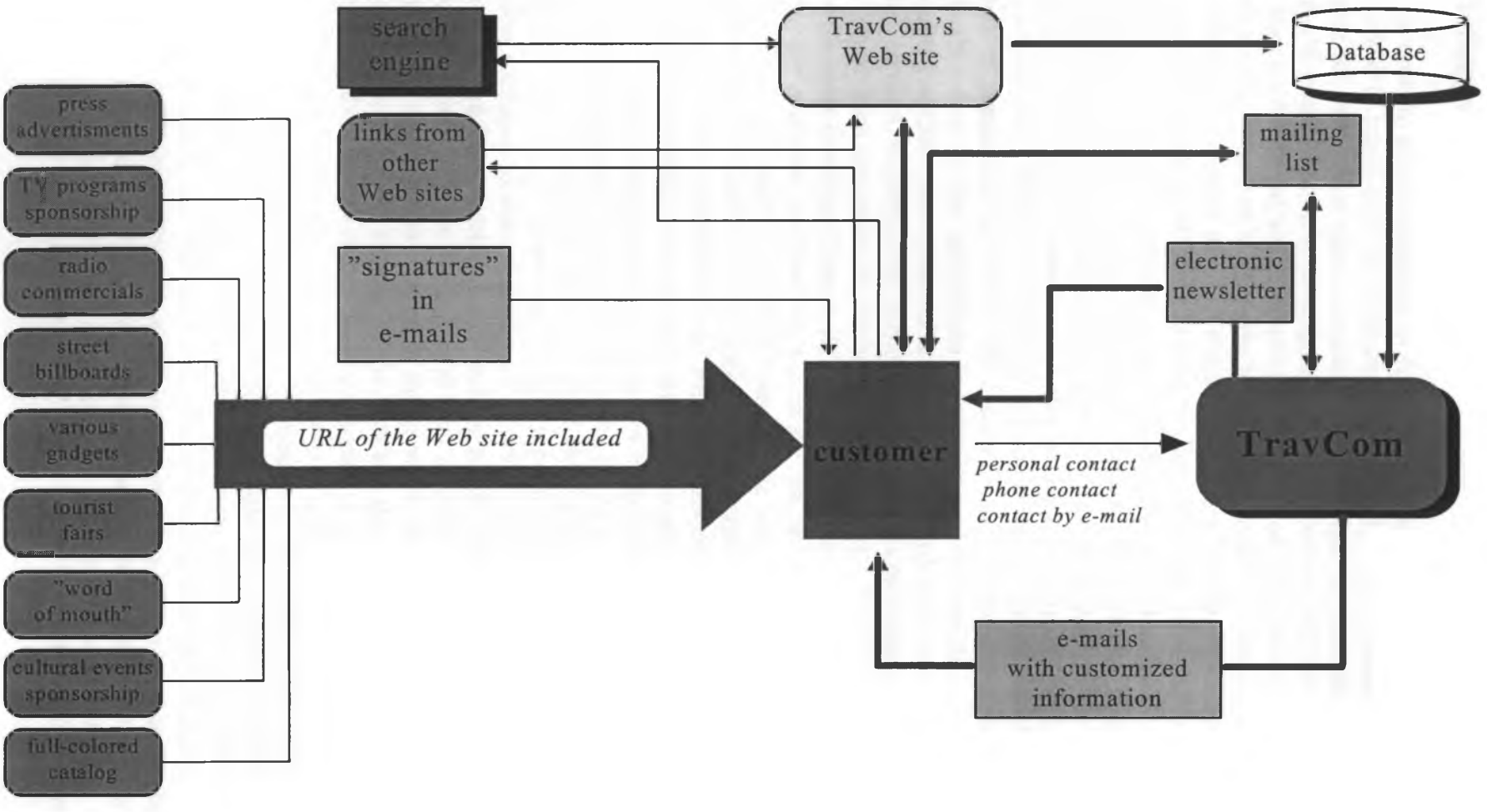
The key purpose of reengineering TravCom promotional system is establishing real interactive communication with customers as well as building close relationship with them, based on available Internet tools, integrated with so far used media. In order to achieve it, some steps are necessary to be followed. First one is improving and redesigning the Web site in order to increase its attractiveness and enhance its usefulness for customers. It is also important to encourage people visiting it to dis-

close there information about themselves and products they are interested. Because the Web site is expected to be an important element of the **integrated promotional system** it is necessary to promote it among the customers and prompt them to visit it. So, the URL address must be exposed in every medium. It should be included in press advertisements, street billboards, programs and posters of sponsored cultural events, gadgets, firm's stationery, business cards. The next step in redesigning the promotional system is establishing company's electronic newsletter. It should provide customers, on regular base (e.g. one month), with information about TravCom and its offer. The following step is creating own mailing list, where all interested people could exchange opinions about traveling and tourism. In process of building relationship very important is wide utilization of e-mails providing customers with customized information.

Let's take a look at functioning of redesigned promotional system (see Fig. 45). Customer receives marketing exposure via traditional medium containing address of the Web page. He/she can directly contact TravCom or can visit the Web site in order to find detailed information about particular products or company. If customer decides to refer to the WWW pages he or she has access to many useful travel related information, contacts and links to another interesting Web pages. During the visit customer is also encouraged to subscribe to the newsletter and mailing list. In order to do this some basic information as e-mail address, name etc., must be disclosed. He/she is additionally prompt to answer some supplementary questions about its preferences. Incentives as discounts for products, company's gadgets etc. are offered to encourage them. Information like this allows TravCom for regular contact with each customer in order to build relationship. More general information about company and its offer can be regularly sent by newsletter. Collected on the Web site data about the preferences can be used for contacting each customer individually by e-mail, offering customized information about products he/she is particularly interested (e.g. concrete "last minute" offer). Establishing moderated by company mailing list gives opportunity for creating, first of this type in Poland, community of people interested in travel related issues. It also allows moderator to gently "push" some information about TravCom and its products.

Apart from referring to the company's Web site via traditional media, customer (or potential customer) can find it using search engine, links from other sites or following "signatures" on e-mails sent by TravCom employees to tourism related mailing lists or discussion groups.

Fig. 45: *Promotional system in TravCom after reengineering*



Source: Own Source

6.3.1. Suggested changes on the Web site

In order to attract customers to TravCom Web site and make them repeat, company's WWW pages must be interesting enough and contain information which are valuable for them. Also other changes on WWW pages are necessary what means that the Web site needs deep redesign and some suggestions will be made here. First, very important element which should be implemented is possibility of choosing by people visiting TravCom's Web site, between two modes i.e. graphics and text one (currently only graphics mode is available). It is extremely important in situation when current speed of data transfer over the Internet is very slow, what makes loading WWW pages, full of pictures, time consuming activity. Because of this, customers who are interested in pure information should have a chance to review it and download in faster, text mode. Next important remark relates to the language in which TravCom's offer is presented. At the moment the only one used on the company's Web site is Polish. Since many customers, as it was mentioned earlier, are Germans it seems that the whole offer should be also presented in this language. It especially relates to the information concerning coach transport and hotel's offer. Although TravCom offer is aimed at Polish market, making offer also accessible in English seems to be purposeful, particularly in case of hotel's service.

Apart from the mode of displaying WWW pages as well as languages used there, the most important issue is its content. As it was mentioned earlier currently information available on TravCom's Web site are limited to company's offer only. What's more it is usually not changed through the whole year (until the new catalog is published). This kind of the Web site can not attract many visitors. It seems that two important things should be done. First, the content of TravCom Web site must be redesigned to make it far more interesting for people visiting it. Second, it can not stay unchanged through the whole year, new elements must be added from time to time and customers should be informed about it (by e-mail or announcement placed in newsletter). The content of WWW pages should be enriched by various materials valuable for customers preparing for their trips or holidays. Since TravCom offers vacation packages to several European countries, its Web site should contain the most important facts about each of it as local habits, characteristic of climatic conditions, comparison of price level, typical local food etc. Also suggestions and advice according to places worth visiting or things worth buying would be very valuable for customers. Important element of the Web site should also be some basic contact information about Polish embassies or consulates (e.g. addresses, phone numbers). It is possible to increase meaningfully the scope of data offered visitors of TravCom WWW pages by making links to another interesting Web sites which contain travel related materials. Such a valuable source of information is **Help For World Travelers**. This none-commercial site is a helpful reference in case when telephone, electrical or TV information from any country in the world is necessary. Namely it offers the following sections: World Phone Guide (information how to hook up the modem anywhere in the world), World Electric Guide (data about voltage, frequency or plug types used in various countries), International Dialing Codes (information about country, city/area codes and other related data), World TV Standards (describes TV

standards used in countries around the world) [163]. Another valuable Web site which is worth linking to TravCom WWW pages is **TravLang**. It contains currency converter providing with the actual currency exchange rate between two chosen currencies (including Polish Zloty). Visitor can also obtain recent history of exchange rate and additional information about each currency [287]. **Current U.S. State Department Travel Advisors** is the next Web site worth linking. It allows for finding information about the country of destination together with characteristic of local conditions [288]. Another valuable link is **Visa ATM Locator**. It gives opportunity for finding the nearest ATM, basing on the following information: country, city, street address and postal code [292]. Travelers planning visits in big cities with subways can find useful **Subway Navigator** which helps in finding route between two chosen stations. Additionally it displays graphical map [72]. Linking to **World Weather Forecasts** will give visitors opportunity of checking forecasts for desired country, while link to **Times Around the World** will be helpful in finding current time in the city of choice [127], [139]. And one more link to the Web site which can be helpful for customers. This site is **Airline Information on-line on the Internet** containing information about airlines and aviation. The most important ones are schedules, fares, reservations, and tickets for commercial airlines [136].

Important element of Web site should also be section called "Comments and Suggestion" where customers could disclose their remarks and recommendations about TravCom's products and services.

The next section which should be established is "Visitors Guest Book" allowing customers to sign in and requesting them to fill *on-line* form with some questions about him/her and preferences. In order to encourage visitors to fill it out some kind of incentive should be used (e.g. drawing once a month an award).

The following element of TravCom Web site should be "Press Releases" section, where would be reprinted articles about company published in newspapers and magazines.

Company should also utilize its WWW pages to recruit employees what is quite common practice among firms around the world. Because of this section "Employment Possibilities" should be established there.

In order to allow visitors for easy finding information he/she is looking for, two additional elements should be added to the Web site. First one is list of most often asked questions along with answers to them (i.e. Frequently Asked Questions). This element will be discussed in more detailed way in 6.5. The second one is own search engine allowing for easy navigation through the Web site and finding necessary data. There are many possibilities according to establishing such search engine because many of them are available on the Internet. Some of them are free while other ones are fee-based. An example of free search engine to be established on the Web site is **SWISH-E** (Simple Web Indexing System for Humans - Enhanced). It allows for indexing whole WWW pages from the Web site and then its fast searching [266]. Review and description of available Web search engines (free and fee-based) can be found in [228].

Creating well designed, full of interesting materials and easy to navigate Web site is important element of redesigning *on-line* marketing activity, but the result of

all those efforts will be very poor if customer won't be able to find TravCom WWW pages. Because of this important element is proper registering the Web site with major search engines and directories. Generally first ones do not require registering, because they utilize special software agents called "spiders" which continuously penetrate the whole the Web, moving from one URL to another one and indexing all pages. But this process can be accelerated. Registering specific URL with search engine causes that robot will faster find the Web site and index it. Very similar to search engines are directories which are hierarchical databases (e.g. Yahoo!) As distinct from search engines they require URL registration, otherwise the Web site will not be placed in database. Important issue according to directories is also choosing proper category or sub-category for placing company's URL. Meaningful is not only to get listed in them, but to get listed as high as possible. Very helpful in this matter can be usage of meta tags as "description" or "keywords" which allow to provide more detailed information about company's WWW pages and let controlling the way they are indexed [260], [262]. This issue is in more detailed way described in 6.7.

There are also possibilities of free promotion of TravCom Web site on WWW pages of other companies. Such a opportunity gives **LinkExchange Inc.**, which is one of the largest advertising networks. In order to utilize it TravCom must join this network by filling out an *on-line* form what means that it agrees to display on its WWW pages the banners for other LinkExchange members and they will display TravCom banners on their Web site. Additionally LE members receive statistics according to own banner (the number of times it was displayed, the number of "click throughs" etc.). Also every company which joined LinkExchange is listed in searchable directory i.e. Surf Point [169]. European Travel Network is another Web site which allows for free promotion as well as link exchange. Unlike LE which groups all kind of companies, ETN is aimed at travel agencies only. It gives even more possibilities organizations like TravCom, because apart from free promotion and exchanging links there is also an opportunity of free participation in many ETN's programs as "The World's Best Travel Agents in 144 Countries" [90]. Because TravCom owns hotel also interesting can be another link exchange program run by The Hotel Guide from Switzerland. They maintain the database of about 60.000 hotels, motels, resorts as well as Bed & Breakfasts, which is claimed to be the largest of this type on the Internet [277].

6.3.2. Other elements of redesigned promotional system

As it was mentioned earlier, the Web site is important but only one of few elements of TravCom *on-line* part of redesigned promotional system. The next one should be own moderated mailing list (discussion list). Such a list should be a forum allowing people interested in tourism exchanging opinions and discuss various related to it issues. It gives perfect opportunity of collecting information about travelers expectations and problems, but also allows to promote TravCom by placing some basic information about company, which is the list owner, in the header of every digest. List moderator have opportunity of placing his/her own comments as well. There are many possibilities of setting up own discussion list. The most widely

known company offering such a service is probably **L-Soft** which offers program **ListServ**. Its customers are many organizations as: IBM, Microsoft, Compaq, MIT, Harvard University, Dow Jones, NASA, Library of Congress, CNN, Procter & Gamble, The Pentagon, British Airways and much more [171]. In Poland there are two ListServ sites. First one PLEARN.EDU.PL is at Informatics Center of Warsaw University, while the second one MAN.TORUN.PL is at Nicholas Copernicus University of Toruń [172]. Another company which offers opportunity of setting up the mailing list is **SparkNET,** which service is called **Sparklist** [257]. Establishing own mailing list is rather a technical issue, another probably more important and difficult aspect is gathering people who would be interested in participating in discussion. Because of this it's obvious that in order to let people know about the new list it must be intensively promoted both *on-line* (through other lists, Web sites) and *off-line* (e.g. specialist magazines).

The next part of reengineered promotional system should be company's electronic newsletter which is inexpensive way of providing customers (and other interested people) with up-dated information about TravCom's products and which gives opportunity of building closer relationship with them. The content of such a newsletter must be interesting enough in order to convince customers to subscribe to it. So apart from detailed information about TravCom products, sales promotions, it should also contain various tips, attractive materials, articles or links valuable for travelers. Newsletter can also become a source of income (sale of place for advertisement), but it is possible only in case when its audience is large enough. Important issue is also frequency of sending newsletter to subscribers. It can be once on two weeks or once month, but generally it depends on amount of interesting information company can gather. As to setting up the newsletter there are many possibilities, as well. It can be done by third parties as mentioned above L-Soft (its service is called "EASE Bulk") or SparkNET on fee-base. There are also Web sites as belonging to LinkExchange, Inc. **ListBot** which allow establishing newsletter for free [261]. Other possibility is usage the popular freeware program Majordomo. In case when company has own server it can do it by itself or by ISP in situation when Web site is hosted on its server.

The last, but very important element of redesigned promotional system are targeted e-mails sent directly to customers. As newsletter, they also allow for providing customers with information about company's products or sales promotions, but in a different way. As a distinct from newsletter, targeted e-mail, basing on created profile, allows for reaching customer with information he/she is exactly expects (e.g. last minutes offers). Such e-mails are the best way of building personal relationship not only between customer and company, but even between customer and particular employee who assists him/her.

6.4. Utilization of the Web as a new distribution channel

Web gives companies around a world great opportunity of selling their products and services directly to customers, avoiding intermediaries. This channel is especially attractive in situation when the whole transaction can be completed *on-line*

and no shipment by company as UPS is required. Generally travel agencies are in such a comfort situation and it is one of the reasons of the dynamic growth of travel products sale through the Web. But there is one, maybe more important motivation of this channel usage. The Internet is not just another sales channel, but it is a channel which as none before allows for building closer relationship with customers and providing them with individualized offer based on their expectations. It gives travel agency a possibility of increasing customer satisfaction as well as their retention. TravCom should also start using this distribution channel for selling all products it offers through their traditional channels, because it can remarkably benefit from it. Apart from benefits described above, selling its products through the Web allows for reaching customers in whole Poland regardless the presence of cooperating travel agents or not. Also on German market this channel will allow for much better direct sale of coach tickets. Important will be also possibility of *on-line* booking rooms in the hotel belonging to TravCom by visitors from Germany and other countries.

There are many possibilities of selling travel related products through the Web, from a very simple and cheap ones to highly automated, but remarkably more expensive. The simplest way is creating on the WWW page an order forms, filled out by customer and then e-mailed to TravCom. Confirmation can be also sent back by e-mail. Such a solution could be used for selling vacation packages, short trips, coaches tickets and making hotel reservation, but it is not suitable for air tickets bookings. Much better, ready solution called **The Private Label** offers Internet Travel Network. Namely, ITN provides travel agencies with Web sites which allows their customers for making *on-line* bookings. The only requirement is usage by travel agency one of the global computer reservation systems (in case of TravCom it is Amadeus). The Private Label supports only products which can be booked through the CRS used by the travel agency. Since TravCom uses Amadeus it comprises air, car and hotel. As to the booking of holiday packages, short trips and coach ticket it is suggested by ITN creating on own Web site text forms which will allow customers requesting each of mentioned earlier elements. ITN can then add link from the Private Label site to the pages on company's Web site containing such forms.
Complete technical work is made by ITN staff in 6 weeks after signing the contract. Company also provides travel agencies with 24 support. Apart from real-time booking engine, other features of ITN Private Label comprises for example: *on-line* help, database with user profiles, possibility of SSL encryption, city and airplane information, seat maps, low fare search, protection by the password the administration area and much more. System offered by ITN is flexible and it can be delivered as less or more advanced version, depending on the travel agency requirements. The Private Label is a very good solution for agencies as TravCom, although as writes Johnny Thorsen, Director of European Business Development ITN "*nothing comes for free*". The cost of establishing described above system is $10.000. Additionally travel agency pays monthly fee of $1.000 and $4 for every PNR created through the Web site [280]. The complete list of available features together with agreement between the travel agency and ITN is given in **ITN Private Label proposal** (see Attachment 1).

Another solution, called **AutoLink**, offers The Eastman Group , Inc. (TEG). It comprises many tools, among which there are ones (much more expensive) suitable for airlines, while other ones are aimed at travel agencies. One of its derivative tool is **AutoBook** which allows for booking through the Internet, Internet and the major Computer Reservation Systems (including Amadeus), all products offered by TravCom i.e. air ticket, hotel rooms, coach tickets, vacation packages. Additionally TEG provides travel agencies with individual tools (APT-Series), which working on most CRS platforms allow to automate operational functions. Cheaper ("low end") AutoLink tools are sold on U.S. market under $1.000, although in Europe it's price is about $5.000. Those for airlines ("high end") are sold for $500.000 [83], [84].

Also Amadeus provides cooperating companies (travel agents, airlines etc.) with Internet booking systems called **The Amadeus Traveller Link**. This ready-made, real-time solution allows for air ticket and hotel rooms booking, while possibility of cars booking will be added soon. Currently it works in four languages, but it can be customized for more [5].

WorldSpan, another major CRS, also offers ready solution called **Internet Booking Engine** for travel agencies. This system currently allows for air bookings only, but for purpose of reservation trips, vacation packages or coach tickets company introduces on West European markets **WorldSpan Wave** [47].

There is also available a solution allowing for secure *on-line* hotel rooms reservations without startup costs. This commission based service called **OnLine Reservations** (OLR) is offered by Digital Frontier. Hotel participating in the program can offer secure, *on-line* reservation via its Web site by linking it to the site of *onlinereservations.com*. Hotel receives protected by password full access to room inventory system and can define various parameters as available rooms, minimum stay requirements, discounts, taxes etc. Visitor who wants to make a reservation of the room clicks on the icon placed on the hotel or travel agency Web site and is moved to the *onlinereservation.com* site. Then he or she enters desired data related to his/her stay. When rooms are available customer is asked to enter a credit card details and after its validation transaction confirmation is sent by e-mail as well as by fax to both customer and hotel. System decrements room inventory and hotel pays 5 percent commission for each confirmed customer stay [76].

Utilization of the Web as a new sales channel requires also following the certain procedures in order to minimize the possibility of its misuse by some of customers. Apart from security aspects which are the key element of electronic commerce, in case of tourism important issue is also protecting against inventory abuse (e.g. making reservation without real intention to finalize the transaction). Certain recommendation have been prepared by Air Transport Association of America. It is suggested that during the reservation process, user should register as customer and provide basic information as name, address, telephone number, passport number. In order to avoid inventory abuse important issue is time of making payment. The safest solution from travel agency point of view is requirement of providing by customer payment information (credit card number, expiry date) while making reservation. After the card validation, customer receives by e-mail confirmation of the transaction. Another possible solution is determining the time (e.g. 24 hours) within the

payment must be made and confirmation sent. It can be for example a bank transfer with confirmation of it faxed to the travel agency office (TravCom uses this method selling coach ticket in Germany). As tickets delivery is considered, various options can be used. In fact air tickets are the only case when physical delivery is necessary (unless e-tickets are considered, but TravCom does not support it yet). They can be sent by mail or picked up by customer at one of travel agency offices. According to coach tickets, short trips or vacation packages, customer can only be sent by e-mail or fax a confirmation of payment containing a booking number. Final document (agreement, bill, ticket) can be handed later (e.g. at a coach). It is also worth mentioning that in order to provide confidentiality during transmitting information necessary for transaction completion it is recommended usage the minimum encryption key of 56 bits [4].

6.5. Internet's exploitation for improving customer support

Internet gives also possibilities of redesigning customer support in TravCom in order to make it much more effective, comfortable and to minimize their costs. Currently it is conducted mainly by phone and in face-to-face contact. There is a possibly of fax usage as well. The basic limitation of customer support organized in this way is fact that people can contact company only during the business hours. Also necessity of calling TravCom, often waiting for connection and additionally paying for a call is another inconvenience. From company point of view customer support in a current form means permanent employees engagement in answering numerous customers phone calls and explaining many issues in face-to-face contact. What's more important, most of asked questions are of very similar nature. Usage the Internet can significantly improve this situation, reducing the necessity of employees involvement. Three basic elements can significantly improve the whole system. First one is the list of questions most often asked by the customer together with answers to them. Such a list called FAQ (Frequently Asked Questions) and placed on the Web site allows him/her to search personally for the answer to the particular problem regardless the time of day or night. The questions should be collected basing on experience of employees and their knowledge what topics are the most often asked. Also monitoring of own mailing list can point for issues which should be answered in FAQ. It's obvious that FAQ must be updated when new problems are identified.

Another valuable element of redesigned customer support should be autoresponders. They allow for quick and easy sending to customers' e-mailbox, package of information about specific topic. It is suggested creating six autoresponders, separate for: vacation packages, short trips, regular coach line to Germany, air tickets, hotel and other coach connections. Customer should have access to them in two ways. First one by means of buttons placed on the Web site. Putting its e-mail address into the form and then pressing the button, customer immediately receives required package of information in his/her e-mailbox. Another way of getting by customer necessary information should be sending a command to the e-mail address of the particular autoresponder. As to establishing autoresponders, such a service offers for example mentioned earlier SparkNET and it is called SparkBOTS [257].

The last element of the redesigned customer support in TravCom is e-mail. It allows customers to contact with company in case when information provided on the Web site or by means of autoresponders are not sufficient and when additional explanation of employee is essential. Although TravCom provides visitors of their Web site with an e-mail address, but it is not seen as an element of the customer support, rather as another communication means and it is rarely used by them. It seems that in order to allow customers for sending their requests directly to employees dealing with particular issue there is necessity of establishing four e-mail addresses instead of one used for all purpose. These addresses should comprise: vacation packages and short trips, coach lines, air tickets, hotel. Another important issue is policy of answering the e-mails, but it will be discussed later.

6.6. Redesign of marketing information system (MkIS)

Utilizing the Internet in the marketing information system, TravCom can significantly improve its effectiveness and will allow for ongoing collecting detailed data about the customers, their preferences as well as expectations in simple and often automated way. Important is also possibility of very easy permanent monitoring the competitors as well as general trends in the industry.

The basic way of gathering data about the customers should be for TravCom forms created on the company's WWW pages. Those of them who will make an *online* reservation would be first obligated to disclose some basic information about themselves (name, address, credit card number etc.). But customers should be also asked to give more detailed data especially relating to their preferences. It is also suggested establishing form aimed at those visitors who do not make any booking, but can be a potential customers in the future. In order to encourage them to fill it out some kind of incentives should be offered (drawing the gadgets or company's product with discount). In order to automate the processing of collected data it is suggested to use forms with database capability like FrontPage98 or FormHandler.cgi. They allow to create files containing collected data which can be downloaded and easily imported to commonly used databases.

Also own newsletter and mailing list will give company great opportunity of reaching new potential customers. People subscribing to them have to disclose their e-mail addresses what gives opportunity of providing them with TravCom's offer.

The Internet allows TravCom also for easy monitoring those of their competitors that have own Web site. It can be done manually by visiting chosen URLs from time to time or it can be done automatically. Programs as WebWhacker can check required Web sites informing when any changes has been made there. Important issue for travel agencies as TravCom is also possibility of easy monitoring the general trends in the industry (i.e. tourism). Very useful for this purpose is subscribing to the one of the mailing lists devoted to the tourism or travel. Digests received every day (or almost every day) to the e-mailbox provide with various very useful information, tips announcements and allow to be informed about new facts. Probably the best mailing list devoted to the tourism and usage IT in this industry is **INFOTEC-TRAVEL** (*Information Technology in Travel and Tourism Worldwide*) [87]. Other

ones can be found through the PAML (*Public Accessible Mailing Lists*). This Web site allows for finding mailing lists dealing with certain issues (e.g. tourism) [254].

In case when it is necessary to collect information on certain topic, the Web and the Internet can be in a very convenient way used by TravCom for conducting marketing research. Both kind of data, primary and secondary, can be gathered over the Internet. The basic form of collecting primary ones can be various surveys conducted through the Web sites or sent to own mailing list. In the first case forms with questions are placed on the WWW pages and filled out *on-line*, in the latter they are sent back by e-mail. Survey forms can be also sent directly to customers by e-mail, but in this case arises a problem of their agreement to receive it (i.e. spamming). Another possibility is sending announcement to the mailing list or placing information in the newsletter pointing out the specific URL where form can be found. Very important element is offering customers any incentives in order to encourage them to devote their time for filling the form out.

There are also the numerous sources of secondary data. A lot of them are freely available, but some information and reports can be accessed on fee-basis. Companies as Jupiter Communication, Forrester Research, Nielsen Media Research or ActivMedia conducts many surveys and some of them are especially devoted to tourism. Generally they sell reports being the result of them, but short summaries containing some basic data are available without any charge. Also specialistic organizations as the American Society of Travel Agents, Inc. (ASTA) or Travel Industry Association of America (TIA) conducts their own very interesting surveys [11], [285].

As it was mentioned above there is also a lot of free information related to tourism and travel which are available on the Web. Very good example of such a source is Canadian **Tourism Research Links** aimed especially at "*tourism researchers and industry practitioners*". Their Web site is divided into four sections i.e. Research, Industry, Niche Marketing, Technology and provides many valuable links [294]. Interesting source of free information can be also newsgroups. They can be searched for the topic of the interest by means DejaNews Web site [73]. There is also an opportunity of accessing past issues of newsletters. Described above possibilities of usage the Internet and Web in TravCom's marketing information system have been gathered in table 43.

Table 43. *New possibilities for MkIS in TravCom*

Area of activity	Method
collecting information about the customers and their preferences	forms on WWW pages
gathering contact information (e-mail addresses)	subscribers to mailing list and newsletter
monitoring competitors	visiting Web sites (manually and automatically)
monitoring trends in the industry	subscribing to various mailing lists, newsgroups and newsletters
marketing research:	
primary data	*on-line* surveys
secondary data	reports published *on-line*, specialist Web sites, newsgroups, newsletters

Source: Own Source

6.7. Methods of analyzing company's performance on the Internet

Implementing the Internet into the TravCom marketing process is not a one fold activity. Since the electronic environment is extremely dynamic as it was mentioned many times, company permanently has to monitor its *on-line* activity and improve elements which require betterment. The Web site as a key element of the TravCom presence in the Internet should be particularly carefully observed. First important task is continuous monitoring how easy people can find the Web site. It is especially important in situation when there are thousands of them and in fact it's very easy for company to get "lost" in this crowd. Since, as surveys show, currently the basic way of finding Web site are search engines (see table 44), proper registering with them seems to be extremely important.

Table 44: *The most common ways of locating the Web site*

Search engine	57%
e-mail message	38%
Web sites	35%
word of mouth	28%
Magazine ads	25%
TV ads	14%
Periodical articles	11%
Vendor catalogs	11%
Newspaper ads	9%
Banner ads	7%
Radio ads	2%
Mail ads	2%

Source: Forrester Research in [205]

Also significant is a position on which the Web site is listed. Commonly, first 10 positions are considered as the most critical. The simplest way to find out the current position of the Web site in particular search engine is placing its name as a searched word.

In case of TravCom the results are rather disappointing. In most of checked search engines their name was not listed among the first 20 positions. Only in case of Infoseek and its Polish mirror the company can be found. The first one places it on 19 position and the latter one displays it on 8 positions among first 10 (see table 45).

Table 45. *Analysis of TravCom Web site listing in the top search engines*

Search Engine	Listing
HotBot	out of first 20 positions
Excite	out of first 20 positions
Yahoo!	out of first 5 positions (only 5 listed)
AltaVista (Polish language)	out of first 20
Lycos	out of first 20
Infoseek	19th position
Infoseek (Polish mirror)	2nd position (totally 8 in first 10)
WebCrawler	out of first 20

Source: Own Source

Next important issue is checking if URL of company's Web page (pages) can be found in search engines catalogs. In most cases the results of the analysis turned out to be positive. Only Lycos and WebCrawler couldn't find any TravCom Web pages in their databases. The details are given in table below.

Table 46. *Analysis of TravCom Web site submission in top search engines*

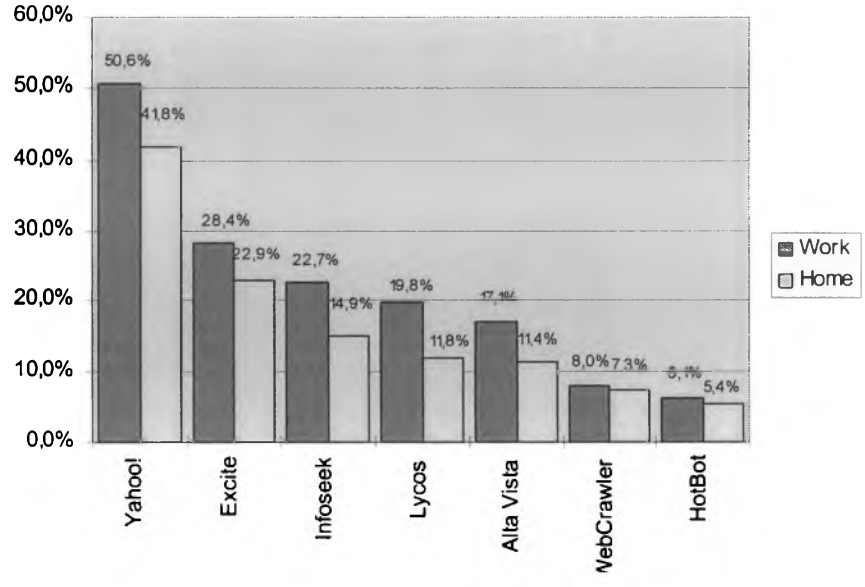
Search Engine	Number of matches
HotBot	1
Excite	13
Yahoo!	1
AltaVista	39
Lycos	none
Infoseek	1
Infoseek (Polish mirror)	29
WebCrawler	none

Source: Own Source

It is necessary to underline that not all search engines are in the same way valuable from a company's point of view. Some of them are more often visited than other ones, people spend there more time and the financial results of their visits very significantly. Unquestioned leader in all ratings is Yahoo!. Comparing to other search engines and directories it's audience reach[25] both from home and work is almost twice as big as Excite and almost eight times more that HotBot (see Fig. 46).

[25] Audience reach is defined here as "*percentage of Web surfers estimated to have visited each search engine during the month*" [263].

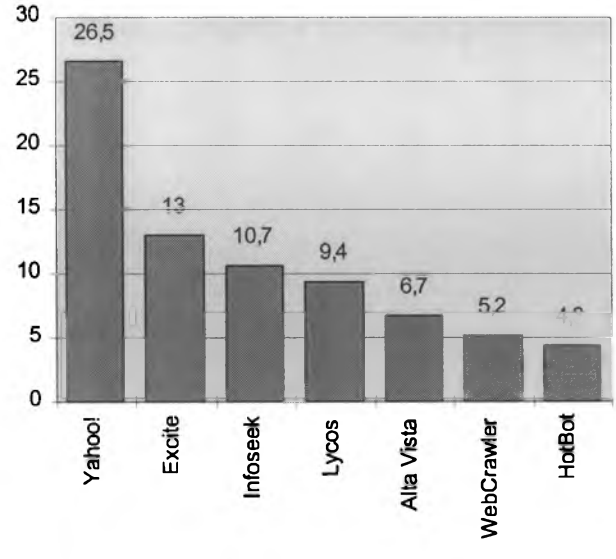
Fig. 46: *Audience Reach (June 1998)*



Source: [263]

Also the number of visitors is much bigger that in case of other search engines. In June 1998 its number was estimated to 26,5 millions, when the second one had only 13 millions (see Fig. 47)

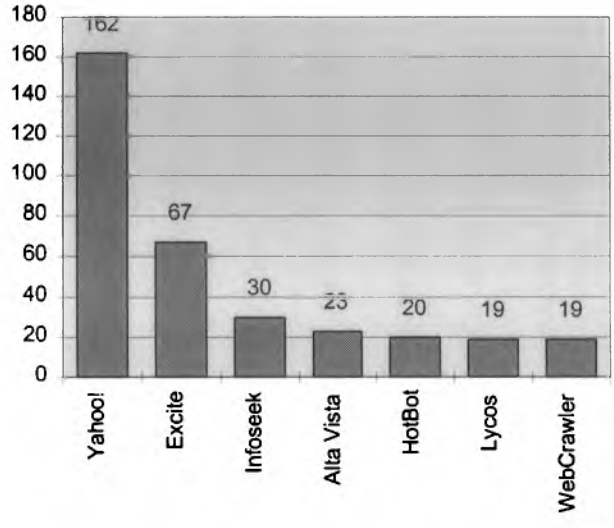
Fig. 47: *Estimated millions of visitors (June 1998)*



Source: [264]

Yahoo! visitors spend also much more time browsing WWW pages. In June 1998 the number of pages viewed by single visitor was 162. The visitors of Excite, which is the second one, have viewed only 67 pages (see Fig. 48).

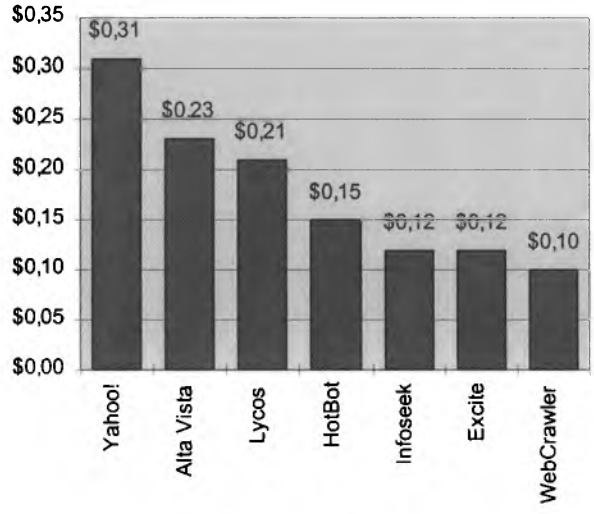
Fig.48: *Pages viewed per visitor (June 1998)*



Source: [264]

The most important from a commercial point of view is that average sale per visit (ASPV) is for Yahoo! the highest comparing to other search engines. In case of Yahoo! it was $0.31, when second one Alta Vista generated $0.23 and third Lycos $021. Infoseek generated only $0.12 per visit (see Fig. 49).

Fig. 49: *Average sale per visit (December 96 - April 97)*



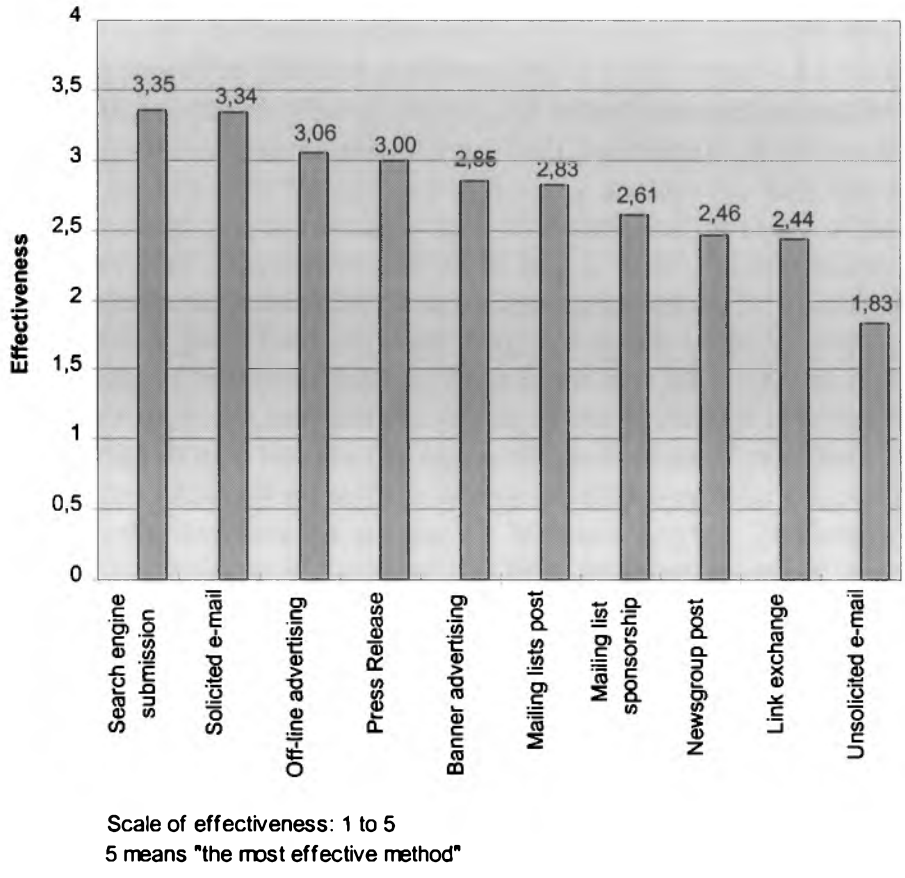
Source: [265]

Above mentioned data clearly show that Yahoo! should be particularly carefully treated by TravCom. Currently, as it was showed earlier, the best results in finding TravCom gives visitor usage of Infoseek, which has much less audience reach and generates significantly less average sale per visit. In case of Lycos, which is third according to ASPV, TravCom is not registered at all !

So in this situation it seems obvious that TravCom should re-submit its URL to most important search engines and directories. In registering the Web site very useful can be famous site **WebStep Top 100** which offers possibility of free submitting company's URL to 100 top search engines and directories divided into three categories i.e. 4-, 3-, 2-Star Sites [193]. Also **Search Engines Watch** provides with plenty of information making registration process easier and much more effective [250].

But submitting being relatively easy is only a preliminary step of the whole strategy related to search engine usage. The most important activity is positioning i.e. placing WWW pages on the highest possible position in the search engines in order to make them easily findable. It is worth underlining the importance of proper positioning since as surveys show search engine submissions are considered as the most effective method of generating traffic on Web pages (see Fig. 50).

Fig. 50: *Comparison of effectiveness in generating Web traffic*



Source: [296]

As it was mentioned earlier, very helpful in achieving this goal is utilization of meta tags, but in most cases it is not enough. Generally positioning is not easy task and very often despite of spending a lot of time on it, results are not very encouraging because of many different requirements related to various search engines. Very helpful in this kind of work can be **WebPosition Analyzer**, a software considered as the best one according to positioning. It is available in two versions: fee-based full one and free trial one which usage is limited to three search engines. This program not only helps in analyzing the positions of WWW pages in the search engines, but also helps improving it [102]. Another solution is outsourcing positioning to specialized companies, but it can be very expensive. For example ClientDirect charges up to $4.000 per one month [297]

Monitoring the position of the Web site in search engines and directories should be only one element of examination of TravCom's activity over the Internet. Second very important one is analysis of the "traffic" on the Web site. It can provide marketers with many valuable for them information and allow for continuos improvement of *on-line* activity. Generally in case of TravCom the traffic on its Web site is rather small. The counter on the home page showed the beginning of Septem-

ber 1998 not much than 9000 hits in total. In fact *„hit is a very misleading term"* [147] and analysis of them does not provide marketers with any important data although not long time ago many of the Web sites informed proudly about the number of hits they have. The truth is that number of hits can only furnish with a very general information about the Web site popularity, but it can't even be a source of the exact data according to the number of visitors. Far more important are **logfiles** which contain a lot of raw data about the visitors, their preferences. What is more important those data are available for free, because every visitor who logs into the Web site leaves there some information about himself/herself and the scope of his/her activity. The only problem is the proper analysis of such a "logs" and presenting the results of it in a clear, easy for interpreting form, allowing marketers for making necessary decisions and changes. There are many programs which allow for making analysis of logfiles. Some of them are freeware, while other ones are fee-based. None of them is perfect, but commonly used and considered as one of the best is **WebTrends**. It converts raw logfiles data into the *log report* which consists of more than 20 pages, full of graphs and tables. It presents in a very detailed way information characterizing visitors and the way they use company's Web site. Starting from statistical ones as: number of hits, number of users per day or most active countries. Next, it presents very important for marketers information as most and least requested pages, most downloaded files and most submitted forms. Also very crucial are top referring URLs and search engines. They allow marketer for identifying the most important for visitors sites which link to their Web site. Also analysis of top search engines gives opportunity to recognize those of them which most often referred visitors to company's WWW pages. Very crucial are also tables with top search keywords and top search engines with keyword detail [298]. WebTrends log report contains a lot of other data and full sample of such a report can be found in Attachment 2.

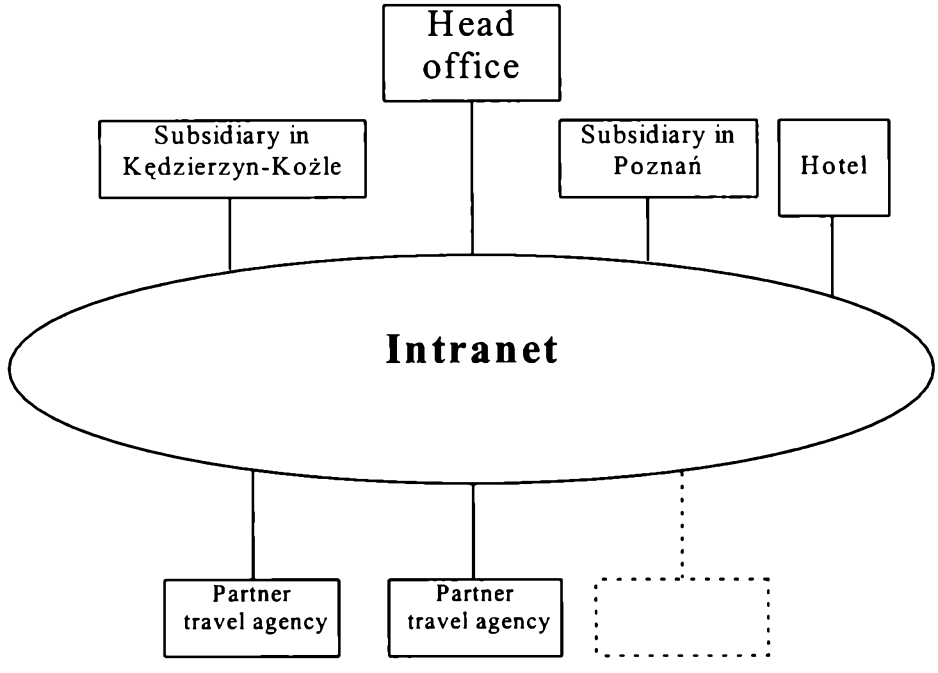
6.8. Improving the internal communication and knowledge-sharing

The Internet gives TravCom a very good opportunity for improving and strengthening communication among the management, employees working at head office, subsidiaries and hotel. Currently mainly phone and fax are used for this purpose. It is suggested establishing company's intranet allowing people not only to communicate in a more convenient and effective way, but also for easy access to necessary information, documents, procedures and for sharing ideas or observations. It can significantly increase communication effectiveness, lowering costs associated with it because of usage for this purpose freeware and shareware software.
By means of intranet TravCom employees can have access to various materials as:

- data about customers and their preferences,
- detailed information about products sold by TravCom and their availability,
- documents and manuals,
- *on-line* tutorials.

Employees can also easily communicate with the rest of workers (by means e-mail or using live chats) and ask for assistance when necessary. Each of them can create own Web site as well. Management has opportunity for distributing necessary information or announcements by means of personalized e-mails or newsletter. It is also possibility of easy conducting internal surveys when needed. Also partner travel agencies could have access via intranet to some kind of data (see Fig. 51). It is necessary to underline that although usefulness of an intranet is beyond any doubt, it is extremely important to convince employees to its everyday usage. It also requires creating rules and norms regulating behavior standards and terms of its usage.

Fig. 51: *Proposal of an intranet at TravCom*



Source: Own Source

6.9. Defining employees' new roles and determining the scope of required training

Active Internet usage as communication and sales channel requires implementing many changes relating to employees, scope of their responsibility and required skills. It will result in emergence of numerous new tasks and challenges. Generally there will be many technical issues to be solved by IT people, but their role should be rather supportive. Currently there is not many work with the content of TravCom Web site. Once a year software company which is responsible for their *on-line* activity (this service is outsourced) places a new catalog on WWW pages and until the next one is released, nothing happens there. Formally there is a webmaster responsible for TravCom *on-line* content, but he is not a company's employee.

Since reengineered sales and marketing process requires deep everyday involvement in company's *on-line* activity, it's obvious that all work related to the content of the WWW pages, implementing changes there, analysis of the traffic, *on-line* promotion, moderation of mailing list or preparing and distributing the newsletter must be done by marketers from TravCom. Because of this specific people must be assigned to those new tasks and rules as well as procedures clearly defining usage of the Internet by employees should be established.

First it is essential to precise who can use the Web and how. So it is necessary to decide if workers have unrestricted access to all Web resources and can "surf" wherever they want or rather company will create "*customized electronic workspaces*" (see [61]). In this second case employees have access to specific resources only, necessary for their work. They are usually diverse for various company's departments or even individuals. Such approach prevents employees from visiting those Web sites which have nothing to do with their work. Next it is necessary to establish procedures clearly determining who has access to e-mail and how it can be used. Also rules regulating checking e-mailboxes and responding to enquiry should be developed. They must also define such issues as people responsible for those activities and time when customer should receive answer to his/her e-mail. In the similar way it is necessary to precise company's policy according to mailing lists or discussion groups. It should be clearly define who is responsible for analysis of competitors' *on-line* activity, monitoring of discussions in mailing lists and discussion groups, responding when necessary and preparing reports concerning those issues. Also workers responsible for preparing newsletter should appointed and scope of their responsibility must defined.

It seems that company should also have own, full-time webmaster responsible from a technical point of view for the *on-line* activity as a whole and very closely cooperating with marketing people, who should every time take final decisions concerning the way of the Internet utilization. The webmaster should also play a role of advisor according to the innovations as well as trends emerging on the marketplace and pointing out for the best technical solutions possible to be utilized in the marketing process.

TravCom's involvement in the electronic commerce requires suitable employees preparation to their functioning in the new working environment. Although the Internet tools are considered as users "friendly" it doesn't mean that workers don't need to be trained in their usage. Generally training should be divided into two phases. During the first one, the most important possibilities of the Internet utilization in sales and marketing process have to be explained and some the most interesting cases should be demonstrated ("*awareness training*"). It is also necessary to make employees familiar with basic theoretical background according to the Internet, new tools, security aspects or methods of payment. Second phase should be concentrated on practical usage of the Internet tools ("*hands-on end-user training*"). During this stage employees should be taught how to apply them in their everyday work. It's obvious that such a training can not be one-fold activity, because the Internet software changes very quickly. Very helpful in education process can be also intranet

which will allow for immediate dissemination of new information and tips among the employees.

6.9. Proposals of the methodology of implementing changes

Reengineering of any business process requires from people implementing changes developing a certain methodology. As it was showed earlier usage a proper methodology is considered as one of success factors. In fact there is no one universal system of steps which can be followed in any process change. Although a general framework can be prepared, as it was showed previously, but in fact there are many different methodologies, developed by various companies and each of them is claimed to be the best one. Below we will propose a methodology devoted especially to redesigning marketing process in travel agency with wide utilization for this purpose the Internet and tools it delivers.

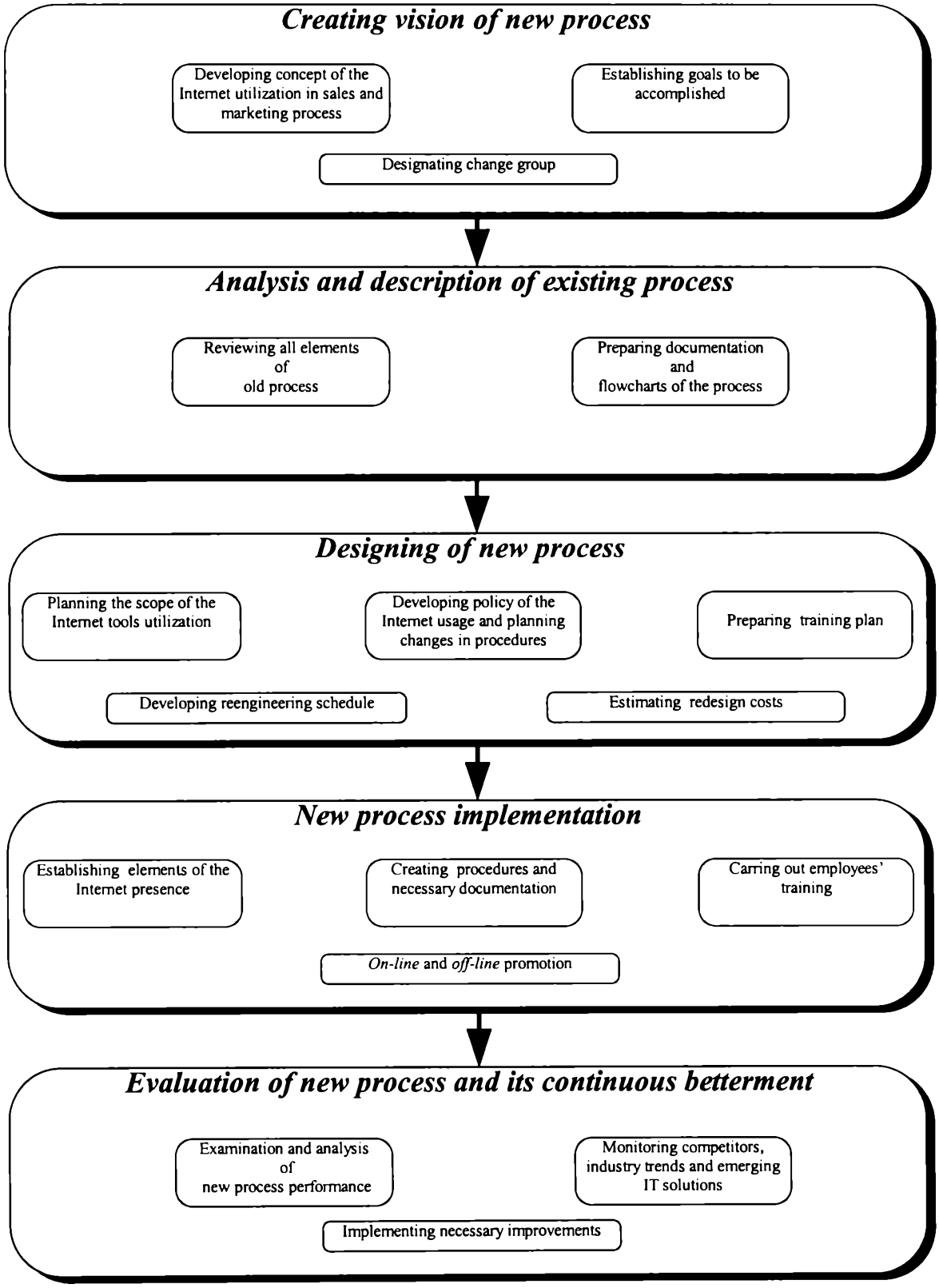
The whole activity begins with perceiving the possibilities of redesigning the process and organizing it in a better, more effective way. At this stage, the most important goals to be achieved by process redesign should be established and the certain general vision of the Internet utilization in sales and marketing process must be created by change sponsor (company owner, CEO etc.). Next, the concept should be discussed with the rest of shareholders and finally defined. In the following step the man responsible for implementing changes have to be named and change group (groups) must be appointed. During the next phase it is necessary to carry out the detailed analysis of existing process. Every element must be documented and described. It comprises communication and distribution channels, customers support, marketing research, internal information flow, existing Internet involvement and general IT usage. Also procedures being used and scope of employees responsibility must be reviewed and documented. Suitable flowcharts presenting flow of activities within the process should be created. Carefully prepared analysis of the old process is the starting point for creating new one, utilizing the Internet. There are many new elements which have to be precisely worked out during the designing phase. Very significant is preparing detailed plan of the Internet usage in the sales and marketing process. It must be defined what kind of Internet tools (Web site, own mailing list, discussion groups, e-mail) will be used in company's promotional system and how. Extremely important is also preparing the plan of their integration with so far used ones in order to achieve the best results. Next, meaningful step is designing the Internet utilization as a sales channel. It comprises choosing the technical solution which is the most adequate for the company, taking into consideration opportunities it offers, but also costs of its implementation. Important elements related to it which must be solved at this stage are security and payment issues. Next element necessary to be prepared during the design phase is elaborating the policy of Internet usage as well as planning necessary changes in employees' scope of responsibilities along with redesigning the procedures, taking into consideration functioning in the electronic environment. This phase requires also planning the technical side of the reengineering's project, including choosing firm responsible for implementation works. Preparing redesign of sales and marketing process requires creating proper training plan for

employees. Finally it is important to assess the overall costs of reengineering, taking into consideration all mentioned above elements. The last issue which must be prepared during this phase is developing the schedule of the whole redesign process.

During the next phase all planned earlier elements should be implemented. It relates to technical side of the project as establishing new sales channel, creating mailing list and electronic newsletter, making necessary changes at the Web site, setting up intranet, installing necessary software, integrating existing databases with *on-line* activity. When all those elements are ready they should be tested and finally tuned. Simultaneously new procedures, manuals and other necessary documents should be prepared. During the same time the training plan should be put into the action in order to make employees ready for functioning in new process. The last step of this phase is intensive promotion, both *on-line* and *off-line*, making customers familiar with new possibilities offered by the company.

During the last phase, which in fact should be take place continuously, the whole process must be carefully watched. Those elements of the process which do not function properly should be improved. The base for making changes should be such elements as comparison of achieved results and established goals, monitoring competitors or analysis of the Internet presence (e.g. logfiles). Also general trends in the travel industry together with emerging new solutions should be observed, analyzed and the best one implemented in order to make process more and more effective.

Fig. 52: *Suggested methodology of reengineering*



Source: Own Source

7. Final conclusions

Organizations worldwide face many new challenges on very dynamic and rapidly changing contemporary marketplace. Being continuously forced to increase their effectiveness and flexibility, they are seeking for such solutions in their organizational performance, which could allow them for successful development and be more competitive. Necessity of implementing changes became particularly important in the context of the Internet's exploitation, requiring this new medium to be quickly involved into organizations' strategy.

Although in this new situation all areas of companies' functioning need deep rethinking, but rapid growth of e-commerce causes that particularly urgent are shifts in marketing process, which is the key element of every contemporary organization. This dissertation offers complete approach to those challenges by combining two issues. On the one hand it presents, in detailed way, possibilities of utilization the Internet in marketing process, while on the other hand it provides with methods of implementing such changes by means of business process reengineering philosophy. Such a complete approach seems to be the most optimal and purposeful.

Chapter 1 "*Implementation of changes in companies' performance*" concentrates on concepts of redesigning organizations' functioning based on process orientation. First, analysis of business processes have been given, including their customers and most important features. Next two philosophies of implementing changes based on process orientation have been presented. In the further part of this chapter attention have been focused on business process reengineering concept. Detailed analysis of reengineering have been made including all the most important aspects of this approach as main enablers and problems, critical success factors, methodologies, influence on employees. All it was based on results of studies conducted by prestigious consulting organizations.

In Chapter 2 "*Characteristic of the Internet and electronic markets*" we have the combined two issues. First, electronic markets have been briefly described and the most important definitions have been introduced. Next, we have characterized the Internet and its multimedial part the World Wide Web, including their users, economical potential as well as main limitations of their development.

Chapter 3 "*Payment and security systems used over the Internet*" we have devoted to two most important issues which influence on the Internet commercialization. Problem of security over the Internet has been described and analyzed. We have paid particular attention to public key cryptography and we have reviewed the best implementations of this cryptosystem. Next, we have analyzed the problem of payment systems and presented the most significant examples of them.

In Chapter 4 "*Possibilities of the Internet's exploitation for business purpose*" we have presented the most important opportunities of utilization the Internet in various areas of organizations' functioning, including business models being used. We have also reviewed such important aspects as intranets and virtual organizations. Finally, basing on results of various surveys, we have presented current usage of the Internet in organizations from U.S., UK, Hungary, Czech and Slovak Republics, Slovenia as well as Poland.

In Chapter 5 "*Exploitation of the Internet in marketing process*", we have carried out the detailed analysis of possibilities of utilization the Internet and the World Wide Web for marketing purpose. All aspects have been widely presented and discussed, including changes in communication model, description of new tools, shifts in marketing research, impact on marketing-mix and customer support. Also new paradigms and marketing cycle suggested for electronic environment have been presented. We have included numerous case studies and results of various surveys as well.

Chapter 6 "*Exploitation of electronic marketing for implementing changes in travel agency - case study*" is devoted to reengineering project of real travel agency. First we have characterized the their current functioning, taking into consideration particularly marketing process. Next we have proposed the way of its redesign, including numerous changes in many areas like promotional system, distribution channels, marketing research and customer support. Also suggestions referring to employees training and their new scope of responsibility have been made. Finally, we have proposed the reengineering methodology.

The following goals have been achieved in this dissertation:

- analysis and systematization of business processes,
- review and examination of all aspects related to business process reengineering,
- detailed analysis of most important reengineering's criticisms and assessment of their pertinence,
- description and examination of the Internet, its users and economical potential.
- review of *on-line* security and payment systems, including analysis of their usefulness,
- review and assessment of possible utilization the Internet in various areas of organizations' functioning,
- detailed analysis of the Internet's influence of marketing process, including:
  - characterization of new and so far used communication models,
  - review and description of new marketing tools and their usage,
  - analysis of the Internet's impact on marketing-mix,
  - review of concepts and paradigms, applicable to electronic environment.
- analysis of marketing process in real travel agency and working out its reengineering project, applicable as a general solution also in other such firms, comprising elements as follows:
  - redesigned promotional system,
  - concrete proposals of usage the Web as a distribution channel,
  - tools for analyzing companies' performance on the Internet,
  - suggestions of usage the Internet in marketing research,
  - methods of usage the Internet for customer support and service,
  - suggestions referring to changes in internal communication,
  - proposals referring to employee's training.
- preparing own reengineering methodology.

Since, many issues discussed in this dissertation are quite new, they require further detailed investigation. It comprises evaluation of effectiveness of *on-line* promotion (including banners), methods and tools for analysis of *on-line* traffic effectiveness, assessment of *on-line* sales channels usefulness. Also further study requires utilization of one-to-one marketing approach and customer relationship management. Necessary is also concentration on knowledge management, which becomes very important issue for contemporary companies and is perceived as next step after reengineering efforts (see [70]).

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Attachment 1

ITN Private Label proposal
For ?
05/98

INTERNET TRAVEL NETWORK
PRIVATE LABEL AGREEMENT

This Agreement is made as of _____, 1998 ("Effective Date") between Internet Travel Network, a California corporation with its principal place of business at 453 Sherman Avenue, Palo Alto, CA 94306, ("ITN") and _____, a _____ corporation with its principal place of business at _____ ("Company").

BACKGROUND:

ITN develops and markets travel-related technology and services for use in connection with the world wide web. The ITN Reservation System permits customers to access real-time CRS inventory and make travel reservations via the World Wide Web. Company wishes to provide its customers with access to the ITN Reservation System via screens displaying its logos and customizations.

ITN AND COMPANY AGREE AS FOLLOWS:

1. Definitions.

1.1 "*Content*" means the Company specific content as set forth in Attachment A ("Company Content"); delivered by Company to ITN for use in the Private Label Site.

1.2 "*CRS*" means a computer reservation system implemented by the ITN Reservation System.

1.3 "*Company Client*" means a customer of Company's that utilizes the Private Label Site.

1.4 "*ITN Reservation System*" means ITN's proprietary booking engine that provides access to a real time CRS in order to make travel reservations via the world wide web.

1.5 "*PNR*" means a single passenger name record containing sufficient information to process a travel reservation.

1.6 "*Private Label Site*" means a set of world wide web pages through which a Company Client may access the ITN Reservation System via screens displaying the Company Content.

2. Content and License Rights. Company will provide ITN with the Content necessary to implement the Private Label Site. Company grants to ITN a world-wide, non-exclusive, royalty-free license during the term of this Agreement to use, reproduce, electronically distribute, publicly display, and publicly perform the Content delivered to ITN by Company only in connection with the Private Label Site. ITN acknowledges that Company owns all right, title and interest in and to the Content.

3. Functionality and Implementation.

3.1 The Private Label Site will implement ITN's standard features as described in Attachment B ("Standard Features") including searching and retrieving airline travel information and booking airline tickets.

3.2 ITN will use commercially reasonable efforts to implement the Private Label Site after receipt of the full Design and Set-up Fee as set forth in Attachment C ("Fees and Payments").

3.3 Acceptance of the Private Label Site will be deemed to have occurred within fifteen (15) days of release of the site by ITN to the Company unless otherwise communicated by the Company to ITN in writing.

3.4 After initial customization to incorporate Content, ITN shall have no obligation to perform further development or customization. Any modifications or updates to Content will be made as mutually agreed upon by ITN and the Company at ITN's standard rates.

3.5 ITN retains the right to include advertising in the Private Label Site.

4. Access.

4.1 ITN will assign a Universal Resource Locator (URL) for the Private Label Site.

4.2 Company and Company Clients will be fully responsible for all the necessary computer hardware, software, modems, connections to the Internet and other items as are needed for using the Private Label Site.

5. Technical Support. ITN will provide Company with its standard technical support for the Private Label Site. Such support will include, but not be limited to, telephone support to Company's designated support contact during the hours of 6:00am-6:00pm Pacific Standard Time. Company will be fully responsible for rendering all support to Company Clients.

6. Bookings. ITN will queue or email a confirmation to Company for each booking made through the Private Label Site and will keep records of such bookings. ITN will accumulate and invoice all bookings for the Private Label Site directly to Company on a monthly basis.

7. Payments.

7.1 Company shall pay all fees associated with the Standard Features to ITN as set forth in Attachment C. If Company requires the implementation of any Special Features, Company shall pay the associated fees set forth in Attachment C.

7.2 All payments due to ITN hereunder shall be made within thirty (30) days of the date of ITN's invoice. Company shall be responsible for and shall pay when due all sales, use and other taxes and similar charges based on or arising from this Agreement or its performance, other than taxes based on ITN's net income. Late payments will bear interest at 1.5% per month or the maximum rate permitted by law, whichever is less

7.3 Company shall reimburse ITN for reasonable expenses incurred for meals, lodging, and travel (air coach rates) previously authorized in writing by Company and incurred as a result of the work performed by ITN outside of Palo Alto, California area at Company's request. ITN shall invoice Company for these expenses and Company shall pay ITN within thirty (30) days after receipt of invoice. Such reimbursed expenses shall not exceed the specific amount set forth in each Company Order issued under this Agreement, without Company's prior written authorization.

8. Warranties and Disclaimers.

8.1 Each of ITN and Company warrants to the other that it has the right to enter into this Agreement and perform its obligations hereunder. Without limiting the generality of foregoing, Company warrants to ITN that it now has and/or will have the right to provide ITN with all Content to be provided with respect to this Agreement.

8.2 Company acknowledges and agrees that ITN shall not be responsible for Private Label Site unavailability due to (i) outages caused by the failure of public network or communications components or (ii) errors in coding in, or any other aspect of, the electronic files provided by Company containing the Content.

8.3 EXCEPT AS PROVIDED ABOVE, ALL INFORMATION, TECHNOLOGY AND SERVICES PROVIDED BY ITN HEREUNDER ARE PROVIDED "AS IS" WITHOUT ANY REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ITN EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT WITH RESPECT TO SUCH INFORMATION, TECHNOLOGY AND SERVICES.

9. Proprietary Rights.

9.1 Company acknowledges that, as between the parties, ITN owns all right, title, and interest in and to all components of the ITN Reservation System.

9.2 Nothing in this Agreement shall give Company any right or license to use, reproduce, display or distribute (electronically or otherwise) any technology or intellectual property rights in the ITN Reservation System.

9.3 ITN reserves the right to display its copyright, standard trademark graphic and disclaimer on the Private Label Site.

10. Term and Termination of Agreement.

10.1 Unless terminated earlier as provided herein, this Agreement is for a period of one year beginning on the Effective Date, and shall automatically renew for successive periods of one year unless either party gives notice of its intent not to renew no later than thirty (30) days prior to the end of the initial term or any such one year renewal period.

10.2 Sections 8, 9, 11 and 12 will survive any termination or expiration of this Agreement. Any payment obligations which exist as of the termination or expiration of this Agreement shall remain in effect.

11. Limitation of Liability. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT OR OTHERWISE, AND EXCEPT FOR BODILY INJURY, ITN SHALL NOT BE LIABLE OR OBLIGATED WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT OR UNDER CONTRACT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER LEGAL OR EQUITABLE THEORY (I) FOR ANY AMOUNTS IN EXCESS OF THE AGGREGATE OF THE FEES PAID TO ITN BY COMPANY FOR THE PRIVATE LABEL SITE DURING THE SIX MONTH PERIOD PRIOR TO THE CAUSE OF ACTION, (II) FOR ANY COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY, SERVICES OR RIGHTS; (III) FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES; (IV) FOR INTERRUPTION OF USE OR LOSS OR CORRUPTION OF DATA; OR (V) FOR ANY MATTER BEYOND ITS REASONABLE CONTROL. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION AND EXCLUSIONS MAY NOT APPLY TO YOU (COMPANY).

12. General. For all purposes of this Agreement, each party shall be and act as an independent contractor and not as partner, joint venturer, or agent of the other and shall not bind nor attempt to bind the other to any contract. Notwithstanding anything to the contrary, nothing contained herein shall restrict ITN from complying with industry reporting requirements. All notices under this Agreement shall be in writing, and shall be deemed given when personally delivered, when sent by confirmed fax, or three days after being sent by prepaid certified or registered U.S. mail to the address of the party to be noticed as set forth herein or such other address as such party last provided to the other by written notice. Neither party shall have any right or ability to assign, transfer, or sublicense any obligations or benefit under this Agreement without the written consent of the other (and any such attempt shall be void), except that a party may assign and transfer this Agreement and its rights and obligations hereunder to any third party who succeeds to substantially all its business or assets. The failure of either party to enforce its rights under this Agreement at any time for any period shall not be construed as a waiver of such rights. It is the intention of the parties that this Agreement be controlling over additional or different terms of any purchase order, confirmation, invoice or similar document, even if accepted in writing by both parties, and that waivers and amendments shall be effective only if made by non-pre-printed agreements clearly understood by both parties to be an amendment or waiver. This Agreement supersedes all proposals, oral or written, all negotiations, conversations, or discussions between or among parties relating to the subject matter of this Agreement and all past dealing or industry custom. No changes, modifications, or waivers are to be made to this Agreement unless evidenced in writing and signed for and on behalf of both parties. In the event that any provision of this Agreement shall be determined to be illegal or unenforceable, that provision will be limited or eliminated to the minimum extent necessary so that this Agreement shall otherwise remain in full force and effect and enforceable. This Agreement shall be governed by and construed in

accordance with the laws of the State of California without regard to the conflicts of law provisions thereof. In any action or proceeding to enforce rights under this Agreement, the prevailing party will be entitled to recover costs and attorneys fees. Headings herein are for convenience of reference only and shall in no way affect interpretation of the Agreement.

[Company]: _____	INTERNET TRAVEL NETWORK
Signature: _____	Signature: _____
Name: _____	Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

ITN Private Label proposal
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ATTACHMENT A

COMPANY CONTENT

- Custom site logo or unique graphic and/or descriptive nomenclature;

ITN Private Label proposal
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ATTACHMENT B

STANDARD FEATURES

Standard Private Label Features

- **Integrated real-time booking engine for air, car and hotel travel**
- **Accesses Apollo, Galileo, Amadeus, Worldspan or Sabre**
- **Customizable graphics and text**
- **Customizable design and layout**
- **Complete online help section**
- **Description and announcement editor**
- **Reservations are queued, as well as e-mailed**
- **City, airplane and hotel amenities information**
- **User feedback form**
- **Full year online calendar**
- **Optional SSL Encryption**
- **Agency Information control**
- **Text Colors and Backgrounds control**
- **Provision for online payment**
- **Airport/city name auto-misspell detection**
- **Password protected User Profiles with private user database, stored contact, system, air, car and hotel preference, frequent flyer numbers**
- **Password protected Administration area**
- **Site Security Control**
- **Access, performance and booking statistics updated daily**
- **PNR Documentation control**
- **Low Fare Search dependant upon CRS functionality available to ITN**
- **Seat Maps**

ITN Private Label proposal
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ATTACHMENT C

FEES AND PAYMENT

Advertising Inclusive Private Label Site	
Design and Set-Up Fee	$ TBA
Monthly Access Fee	$ TBA
Fee per Booking	$ TBA
Advertising Exclusive Private Label Site	
Design and Set-Up Fee	$ 10,000.00
Monthly Access Fee	$ 1,000.00
Fee per Booking	$ 4.00
Multi-Pseudo City/Ticketing Queue Private Label Site	
Design and Set-up Fee	$ TBA
Monthly Maintenance Fee, 25 Pseudo Cities/Ticketing Queues	$ TBA
Fee per Booking	$ TBA
Additional Fees	
Fee per International Booking	$ 4.00
Fee for Alterations to Existing Pages	$ 50.00
Fee for Alterations to Additional Pages	$ 50.00
Programming Hourly Fee	$250.00
HTML Coding Hourly Fee	$ 150.00
Graphic Design Hourly Fee	$ 150.00
Special Consulting Hourly Fee	$ 150.00
Hotel Database Load	$1,500.00
Flight Path	$3,500.00
Fare Ticker	$1,200.00
Seat Maps with Customization	$500.00
Faxing of Booked Reservations - Domestic Fax	$2.00 per fax
Faxing of Booked Reservations - International Fax	$5.00 per fax
Ability to Cancel/Change a PNR	$1.00 per change/ $6.00 cap per transaction fee
Monthly Fee (Maintenance) for Customization	
Monthly Maintenance Fee for Alterations to Existing Pages	$ 25.00
Monthly Maintenance Fee for Alterations to Additional Pages	$ 25.00

Prices apply per pseudo city or off-site location, unless otherwise specified. For all Engineering Fees, estimates will be provided and work will not be initiated without a signed authorization from Company accepting the estimate.

Attachment 2

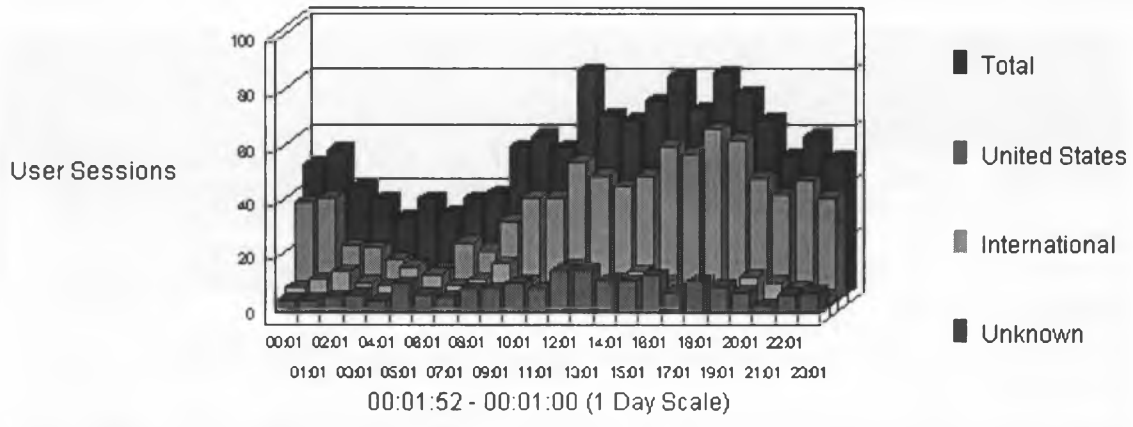
MMGCO log report

Multimedia Marketing Group

General Statistics

The User Profile by Regions graph identifies the general location of the visitors to your Web site. The General Statistics table includes statistics on the total activity for this server during the designated time frame.

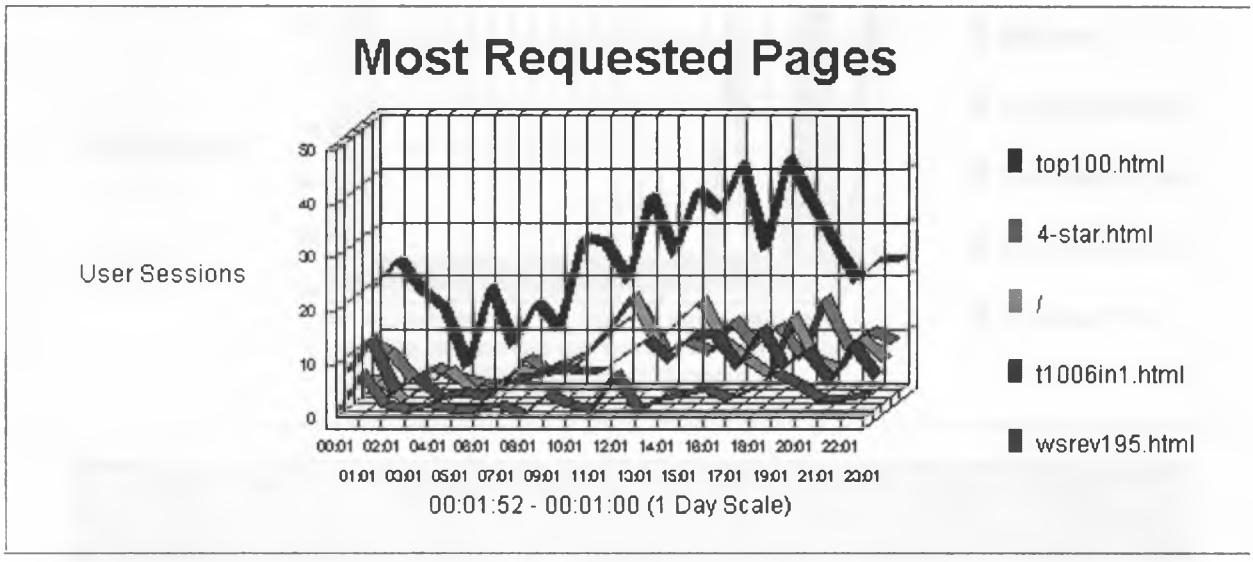
User Profile by Regions



General Statistics	
Date & Time This Report was Generated	Thursday April 09, 1998 - 21:00:32
Timeframe	04/08/98 00:01:52 - 04/09/98 00:01:00
Number of Hits for Home Page	238
Number of Successful Hits for Entire Site	16053
Number of Page Views (Impressions)	2647
Number of User Sessions	1315
User Sessions from (United States)	66.61%
International User Sessions	16.95%
User Sessions of Unknown Origin	16.42%
Average Number of Hits per Day	16053
Average Number of Page Views Per Day	2647
Average Number of User Sessions per Day	1315
Average User Session Length	00:12:01

Most Requested Pages

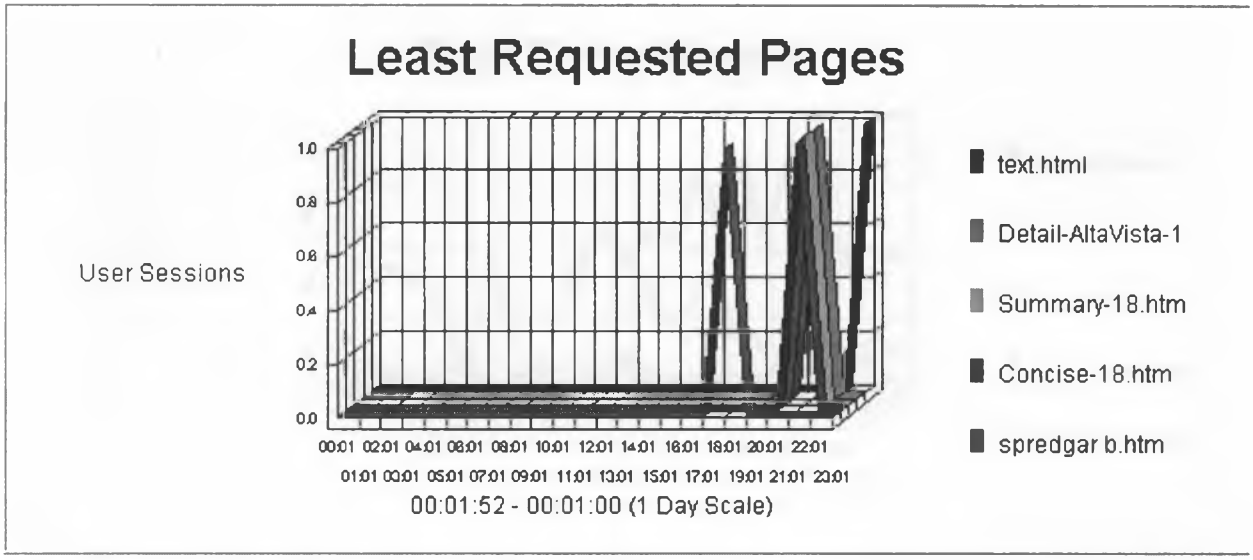
This section identifies the most popular Web Site pages and how often they were accessed. The average time a user spends viewing a page is also indicated in the table.



Most Requested Pages			
	Pages	**User Sessions**	**Avg. Time**
1	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/top100.html*	581	00:01:44
2	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/4-star.html*	205	00:01:20
3	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/*	202	00:02:33
4	**WebStep Search Engine URL Submittals>** *http://www.mmgco.com/t1006in1.html*	194	00:04:00
5	**WebStep TOP 100 Free Listings** *http://www.mmgco.com/wsrev195.html*	78	00:00:52
6	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/tools.html*	76	00:02:10
7	**Internet Sales Discussion List** *http://www.mmgco.com/isales.html*	66	00:03:17
8	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/listads.html*	60	00:00:41
9	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/t100links.html*	57	00:02:13
10	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/index.html*	49	00:04:18
	Sub Total For the Page Views Above	**N/A**	**N/A**
	Total For the Log File	**N/A**	**N/A**

Least Requested Pages

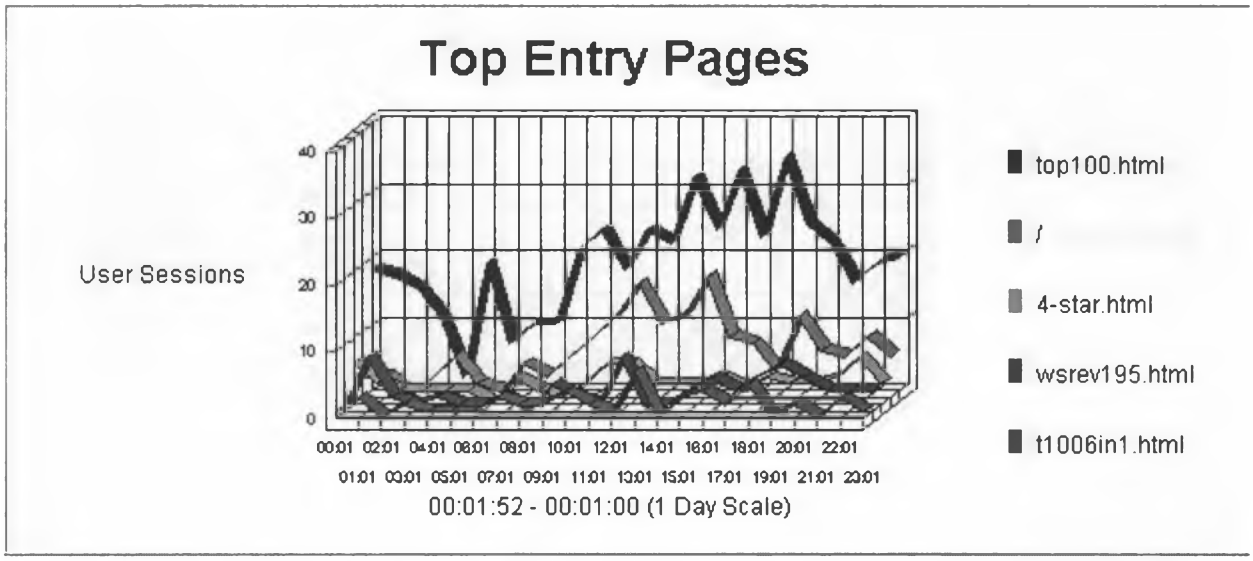
This section identifies the least popular pages on your Web site, and how often they were accessed.



Least Requested Pages		
	Pages	**User Sessions**
1	**Multimedia Marketing Group Online Media Kit** *http://www.mmgco.com/text.html*	1
2	*http://www.mmgco.com/client_reports/cccnet/seo/Detail-AltaVista-18.htm*	1
3	*http://www.mmgco.com/client_reports/cccnet/seo/Summary-18.htm*	1
4	*http://www.mmgco.com/client_reports/cccnet/seo/Concise-18.htm*	1
5	*http://www.mmgco.com/client_reports/spredgar/logs/spredgar_b.htm*	1
6	*http://www.mmgco.com/client_reports/spredgar/logs/spredgar_t.htm*	1
7	*http://www.mmgco.com/client_reports/spredgar/logs/spredgar.HTM*	1
8	**IPN Presentation, June 10th, 1997** *http://www.mmgco.com/IPN/*	1
9	**Index of /java** *http://www.mmgco.com/java/*	1
10	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/release.html*	1

Top Entry Pages

This section identifies the first page viewed when a user visits this site. This is most likely your home page but, in some cases, it may also be specific URLs that users enter to access a particular page directly. The percentages refer to the total number of user sessions that started with a valid Document Type. If the session started on a document with a different type (such as a graphic or sound file), the file is not be counted as an Entry Page, and the session is not counted in the total.

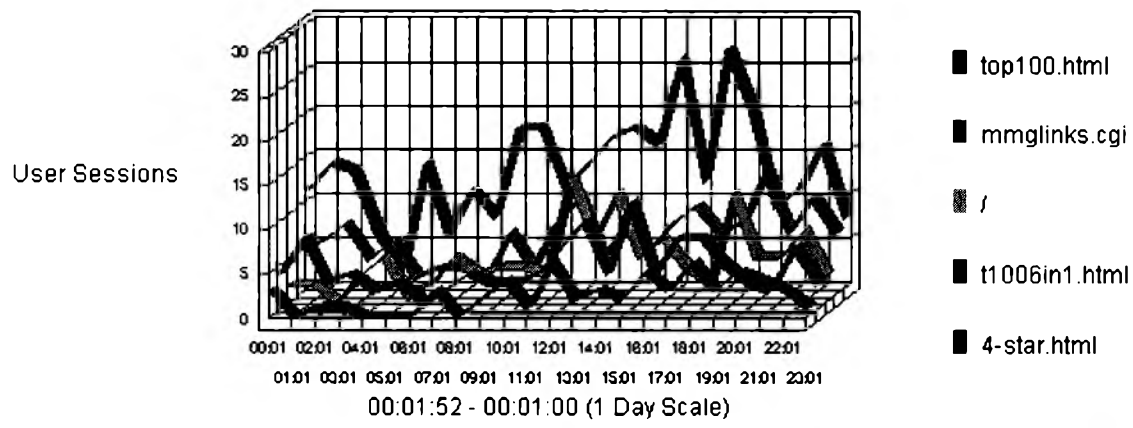


Top Entry Pages		
	Pages	**User Sessions**
1	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/top100.html*	467
2	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/*	172
3	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/4-star.html*	78
4	**WebStep TOP 100 Free Listings** *http://www.mmgco.com/wsrev195.html*	72
5	**WebStep Search Engine URL Submittals>** *http://www.mmgco.com/t1006in1.html*	50
6	*http://www.mmgco.com/mmglinks.cgi*	49
7	**Internet Sales Discussion List** *http://www.mmgco.com/isales.html*	34
8	**MMG's NoSpam Page** *http://www.mmgco.com/nospam/*	34
9	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/listads.html*	27
10	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/tools.html*	16
	Total For the Pages Above	**999**

Top Exit Pages

This section identifies the most common pages users were on when they left your site. The percentages refer to the total number of user sessions that started with a valid Document Type. If the session started on a document with a different type (such as a graphic or sound file), the file is not be counted as an Entry Page, and the session is not counted in the total.

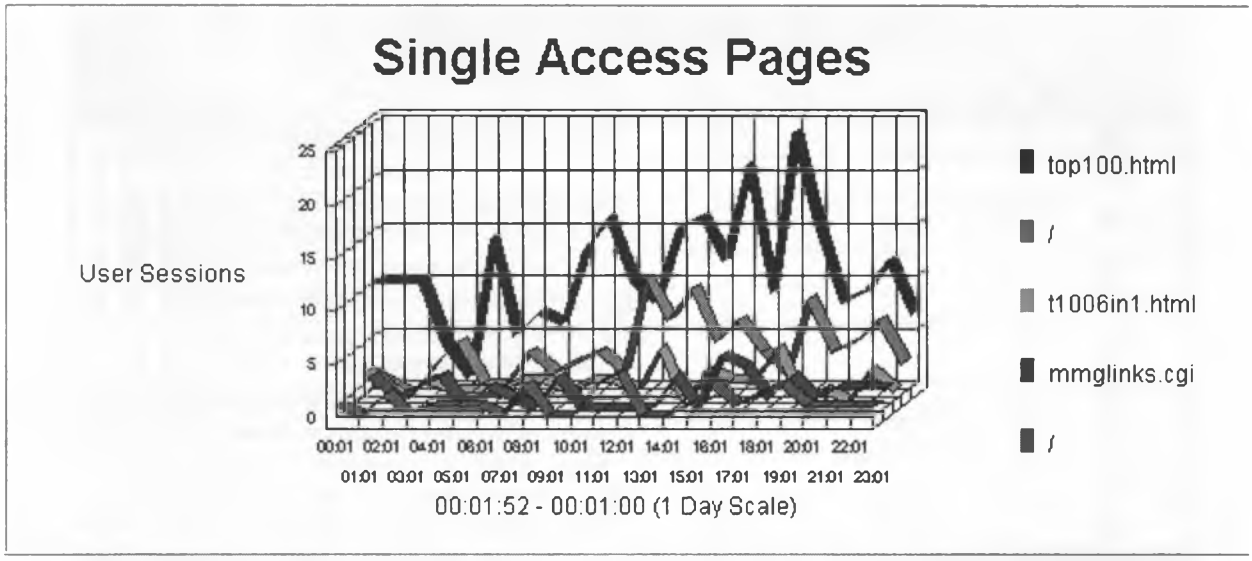
Top Exit Pages



Top Exit Pages		
	Pages	**User Sessions**
1	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/top100.html*	326
2	*http://www.mmgco.com/mmglinks.cgi*	157
3	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/*	118
4	**WebStep Search Engine URL Submittals>** *http://www.mmgco.com/t1006in1.html*	114
5	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/4-star.html*	58
6	**Internet Sales Discussion List** *http://www.mmgco.com/isales.html*	40
7	**MMG's NoSpam Page** *http://www.mmgco.com/nospam/*	32
8	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/t100links.html*	30
9	**MMG Express ORDER FORM** *http://www.mmgco.com/order/*	27
10	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/tools.html*	21
	Total For the Pages Above	**923**

Single Access Pages

This section identifies the pages on your Web site that visitors access and exit without viewing any other page. The percentages refer to the total number of user sessions that started with a valid Document Type. If the session started on a document with a different type (such as a graphic or sound file), the file is not be counted as an Entry Page, and the session is not counted in the total



Single Access Pages		
	Pages	**User Sessions**
1	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/top100.html*	262
2	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/*	102
3	**WebStep Search Engine URL Submittals>** *http://www.mmgco.com/t1006in1.html*	39
4	*http://www.mmgco.com/mmglinks.cgi*	39
5	**MMG's NoSpam Page** *http://www.mmgco.com/nospam/*	30
6	**Submit Your URL to the WebStep Top 100 Free Listings** *http://www.mmgco.com/4-star.html*	24
7	**Internet Sales Discussion List** *http://www.mmgco.com/isales.html*	22
8	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/listads.html*	14
9	**WEBSTEP TRAFFIC & IMPACT BUILDING** *http://www.mmgco.com/tools.html*	10
10	**Website Marketing, Advertising and Traffic Building Services from MMG** *http://www.mmgco.com/index.html*	9
	Total For the Pages Above	**551**

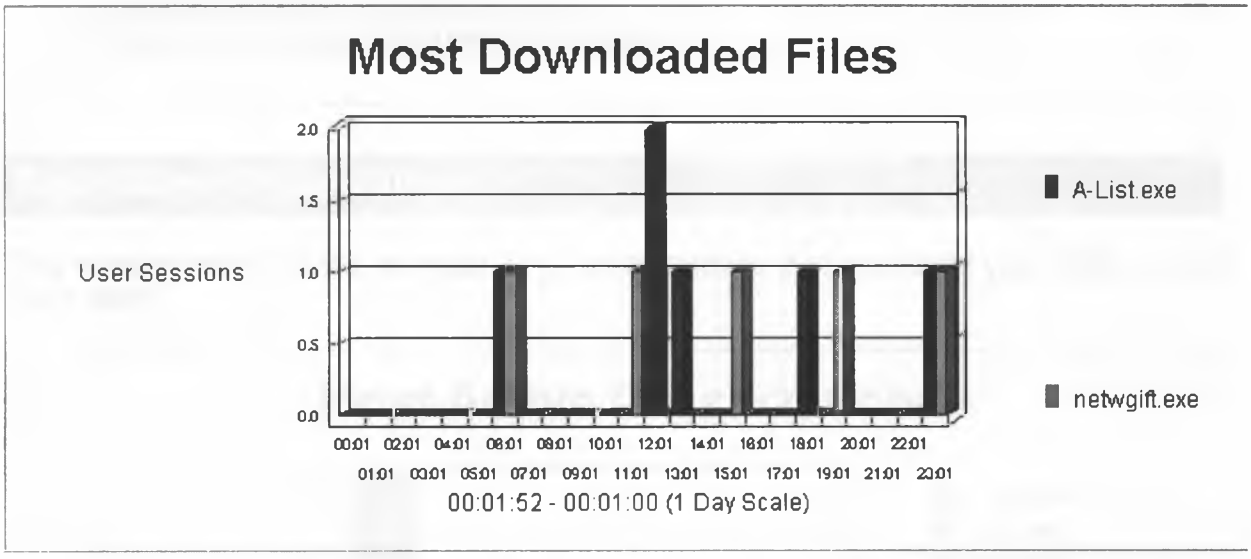
Top Paths Through Site

This section identifies the paths people most often follow when visiting your Web site. The path begins at the page of entry and shows the next six consecutive pages viewed.

Top Paths Through Site		
	Pages	User Sessions
1	1. http://www.mmgco.com/top100.html	262
2	1. http://www.mmgco.com/	102
3	1. http://www.mmgco.com/top100.html *2. http://www.mmgco.com/t1006in1.html*	47
4	1. http://www.mmgco.com/t1006in1.html	39
5	1. http://www.mmgco.com/mmglinks.cgi	39
6	1. http://www.mmgco.com/wsrev195.html *2. http://www.mmgco.com/top100.html*	34
7	1. http://www.mmgco.com/nospam/	30
8	1. http://www.mmgco.com/4-star.html	24
9	1. http://www.mmgco.com/4-star.html *2. http://www.mmgco.com/mmglinks.cgi*	23
10	1. http://www.mmgco.com/isales.html	22
	Total For the Paths Above	**622**

Most Downloaded Files

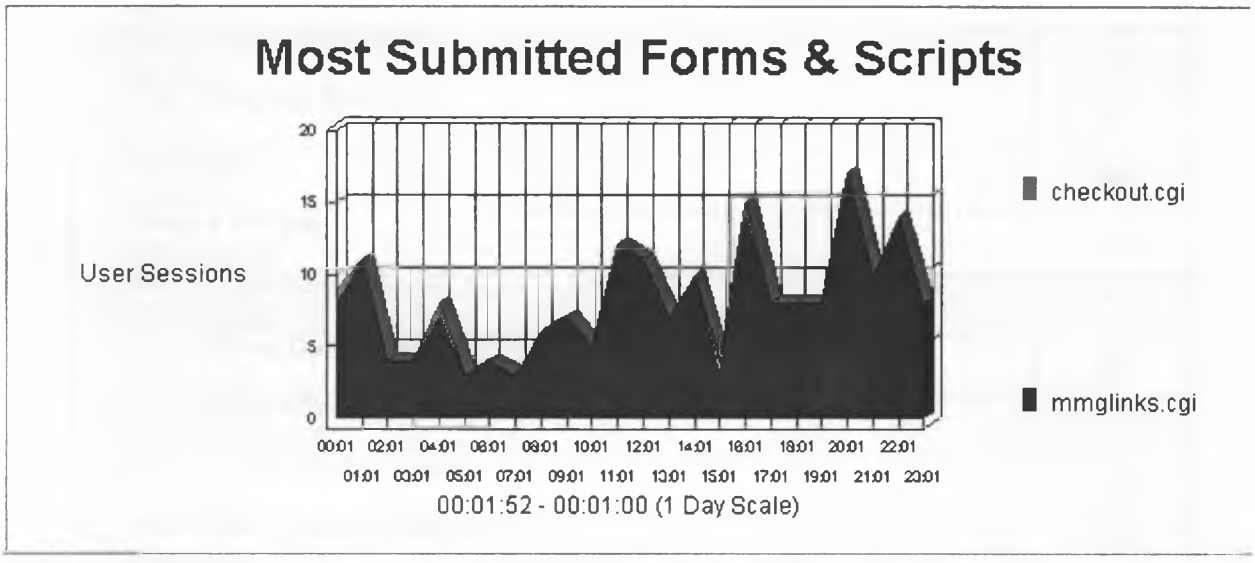
This section identifies the most popular file downloads of your Web site. If an error occurred during the transfer, that transfer is not counted.



Most Downloaded Files			
	File	No. of Downloads	User Sessions
1	http://www.mmgco.com/A-List.exe	6	
2	http://www.mmgco.com/netwgift.exe	5	
	Total For the Files Above	**N/A**	

Most Submitted Forms and Scripts

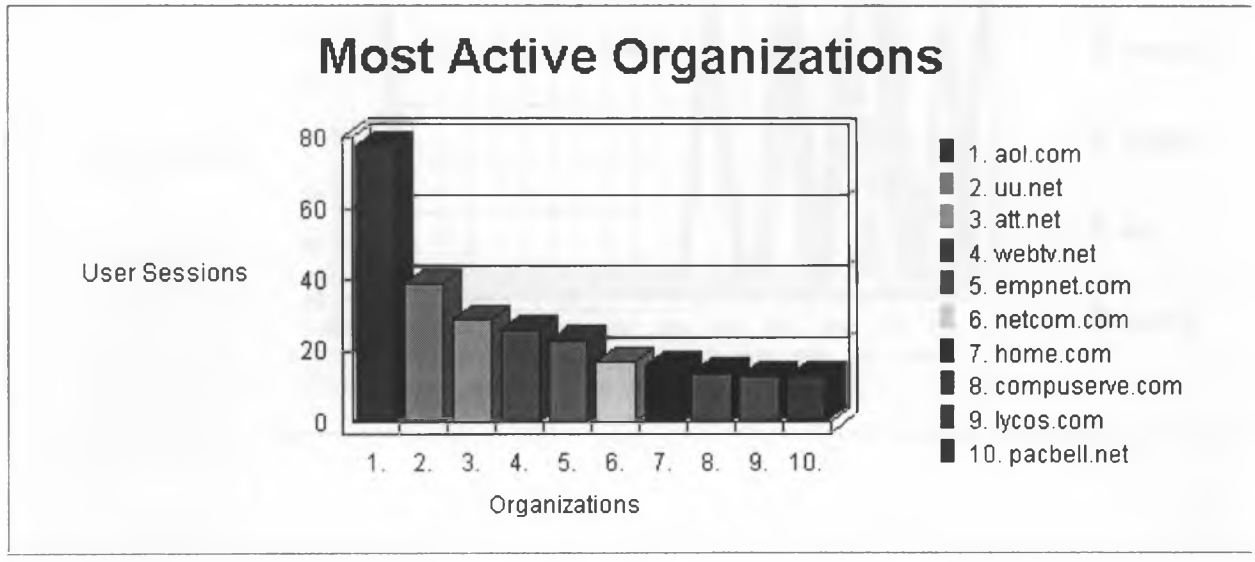
This section identifies the most popular forms or scripts executed by your server. WebTrends counts any line with a Post command or a Get command with a "?" as a form or script, and shows only successful hits.



Most Submitted Forms & Scripts			
	Forms and/or Scripts	No. of Forms	User Sessions
1	*http://www.mmgco.com/mmglinks.cgi*	192	
2	*http://www.mmgco.com/order/checkout.cgi*	4	

Most Active Organizations

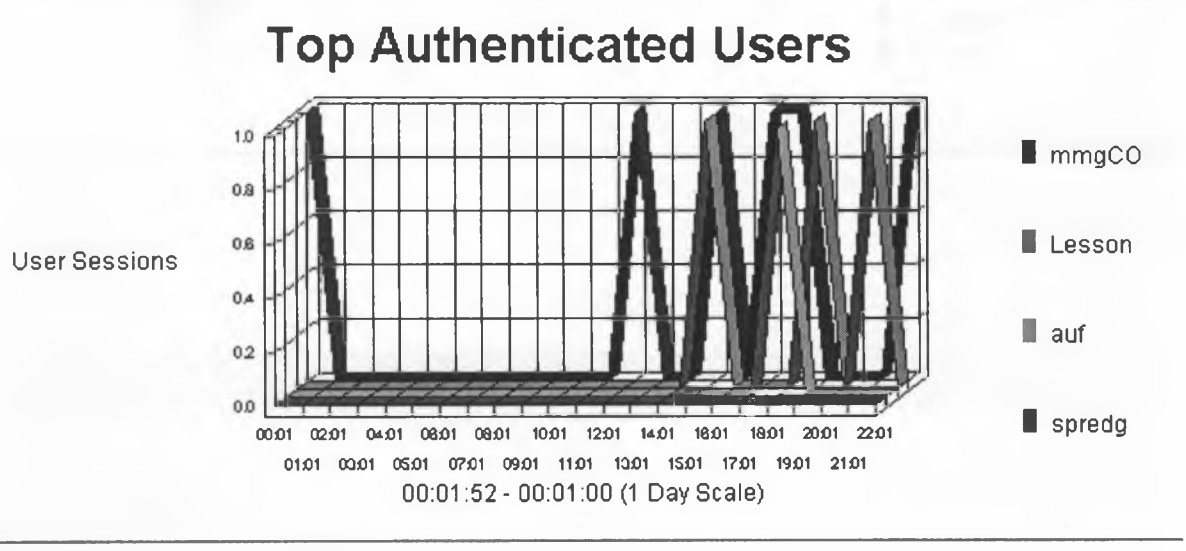
This section identifies the companies or organizations that accessed your Web site the most often.



Most Active Organizations		
	Organizations	User Sessions
1	**America Online** aol.com	78
2	**Uunet Technologies Inc.** uu.net	39
3	**At&T Easylink Services** att.net	29
4	**ARTEMIS** webtv.net	26
5	**Empire Net Inc.** empnet.com	23
6	**Netcom Online Services** netcom.com	17
7	**Leni Wilcox Consultant** home.com	16
8	**Compuserve Incorporated** compuserve.com	14
9	**Carnegie Mellon University** lycos.com	13
10	**Pacific Bell Internet Services** pacbell.net	13
	Subtotal For Companies Above	**268**
	Total For the Log File	**1315**

Top Authenticated Users

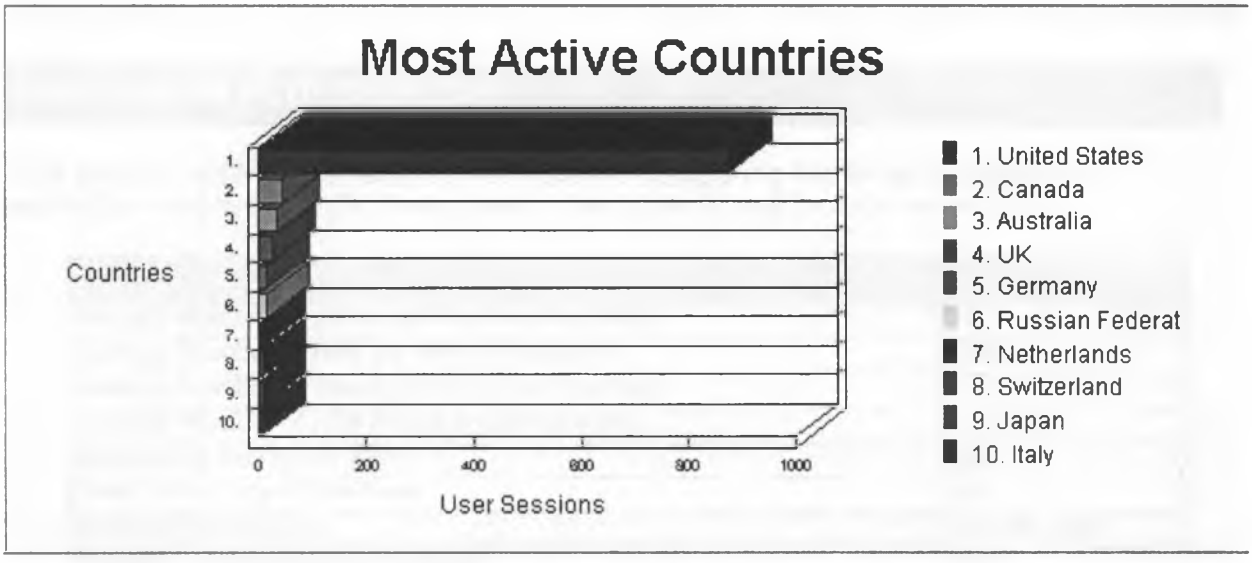
This section identifies the true name and relative activity level of the users logging onto a server that requires user name and password.



Top Authenticated Users		
	User	User Sessions
1	mmgCO	6
2	Lesson	3
3	auf	1
4	spredg	0
	Total	10

Most Active Countries

This section identifies the top locations of the users of your site by country. The country of the user is determined by the suffix of their domain name. Use this information carefully because this information is based on where the domain name of the visitor is registered, and may not always be an accurate identifier of the actual geographic location of this visitor (for example, individual visitors will often be seen as coming from the state where their ISP is registered.)



Most Active Countries		
	Countries	User Sessions
1	United States	876
2	Canada	44
3	Australia	34
4	UK	25
5	Germany	15
6	Russian Federation	14
7	Netherlands	7
8	Switzerland	6
9	Japan	6
10	Italy	6
11	Malaysia	5
12	France	5
13	India	4
14	Ireland	4
15	Norway	4
	Total	1055

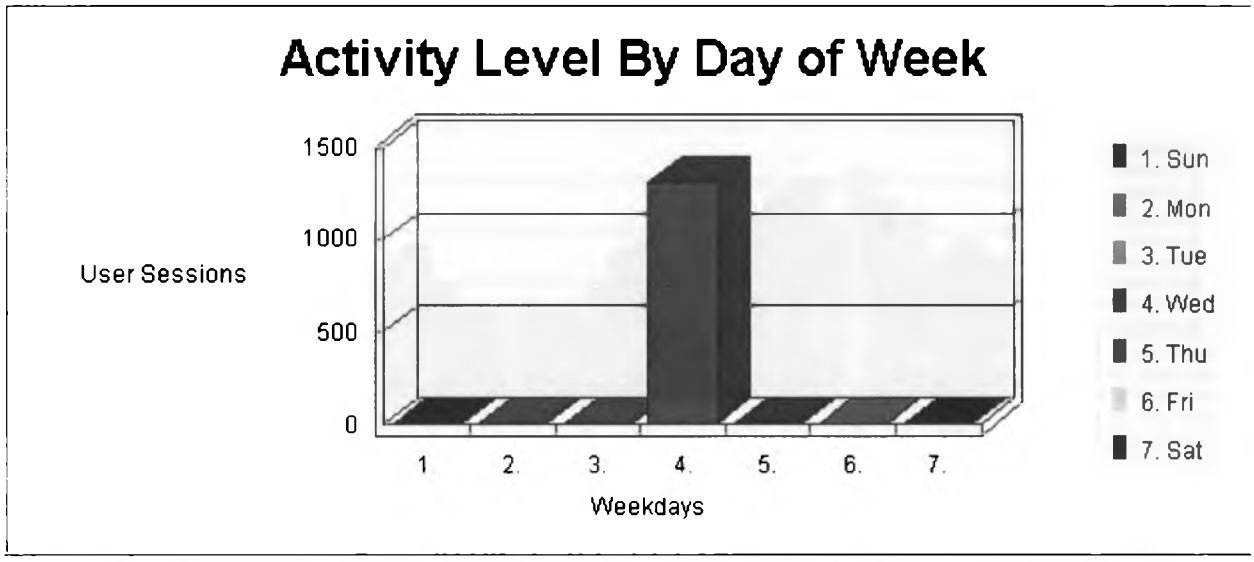
Summary of Activity by Day

This section outlines general server activity, comparing the level of activity on weekdays and weekends. Averages in the table do not include erred hits.

Summary of Activity by Day	
Average Number of ***Users*** per day on Weekdays	657
Average Number of ***Hits*** per day on Weekdays	8026
Average Number of ***Users*** for the entire Weekend	0
Average Number of ***Hits*** for the entire Weekend	0
Most Active Day of the Week	Wed
Least Active Day of the Week	Sun
Most Active Day Ever	April 08, 1998
Number of Hits on Most Active Day	16017
Least Active Day Ever	April 09, 1998
Number of Hits on Least Active Day	36

Activity Level by Day of Week

This section shows the activity for each day of the week for the report period (i.e. if there are two Mondays in the report period, the value presented is the sum of all hits for both Mondays.) The Total Weekdays line indicates the number of hits occurring Monday through Friday of the report period. The Total Weekends line indicates the number of hits occurring Saturday and Sunday of the report period. Values in the table do not include erred hits.

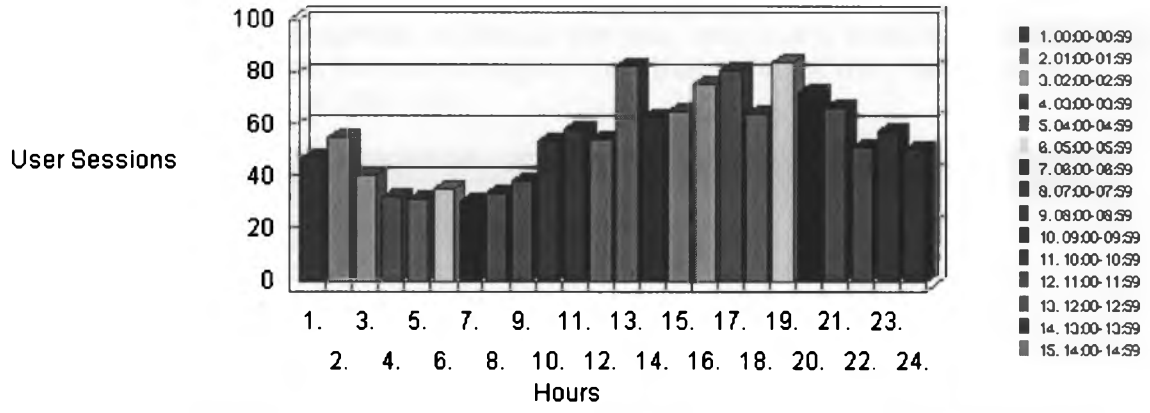


Activity Level by Day of the Week		
	Day	User Sessions
1	Sun	0
2	Mon	0
3	Tue	0
4	Wed	1313
5	Thu	2
6	Fri	0
7	Sat	0
	Total Weekdays	**1315**
	Total Weekend	**0**

Activity Level by Hour of the Day

This section shows the most and the least active hour of the day for the report period. The second table breaks down activity for the given report period to show the average activity for each individual hour of the day.

Activity Level By Hour of Day



Activity Level by Hour of the Day	
Most Active Hour of the Day	15:00-15:59
Least Active Hour of the Day	05:00-05:59

Activity Level by Hours Details	
Hour	Avg # of User Sessions
00:00-00:59	47
01:00-01:59	55
02:00-02:59	40
03:00-03:59	32
04:00-04:59	31
05:00-05:59	35
06:00-06:59	30
07:00-07:59	33
08:00-08:59	38
09:00-09:59	53
10:00-10:59	58
11:00-11:59	54
12:00-12:59	82
13:00-13:59	62
14:00-14:59	65
15:00-15:59	75
16:00-16:59	81
17:00-17:59	64
18:00-18:59	84
19:00-19:59	72
20:00-20:59	66
21:00-21:59	51
22:00-22:59	57
23:00-23:59	50
Total Users during Work Hours (8:00am-5:00pm)	568
Total Users during After Hours (5:01pm-7:59am)	747

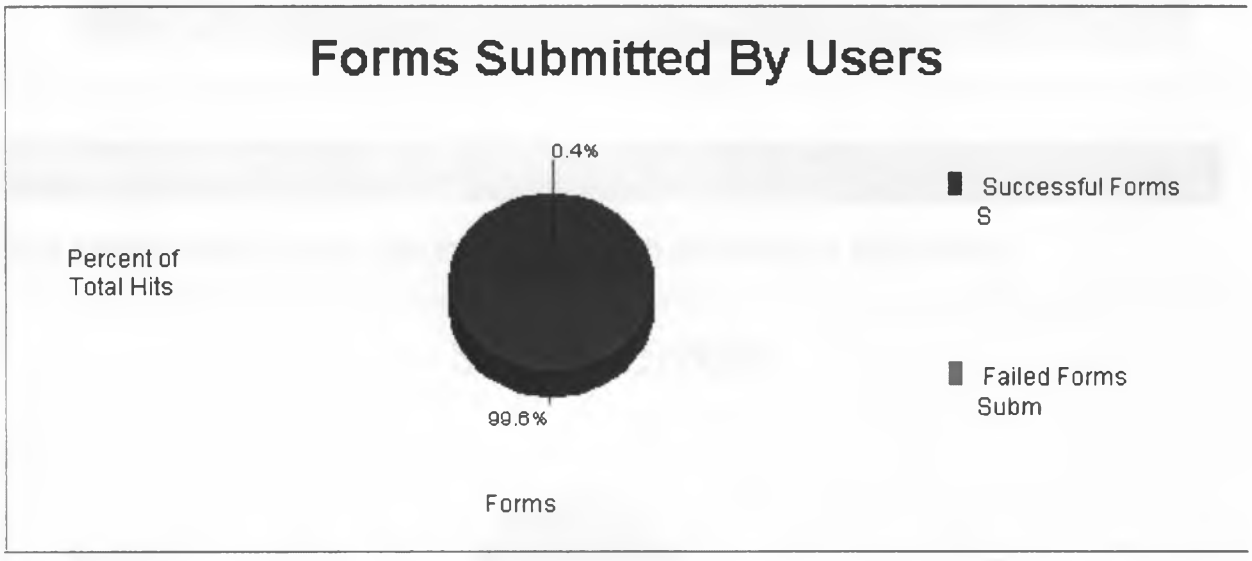
Technical Statistics and Analysis

This table shows the total number of hits for the site, how many were successful, how many failed, and calculates the percentage of hits that failed. It may help you in determining the reliability of your site.

Technical Statistics and Analysis	
Total Hits	16404
Successful Hits	16053
Failed Hits	351
Failed Hits as Percent	2.13%
Cached Hits	1978
Cached Hits as Percent	12.05%

Forms Submitted By Users

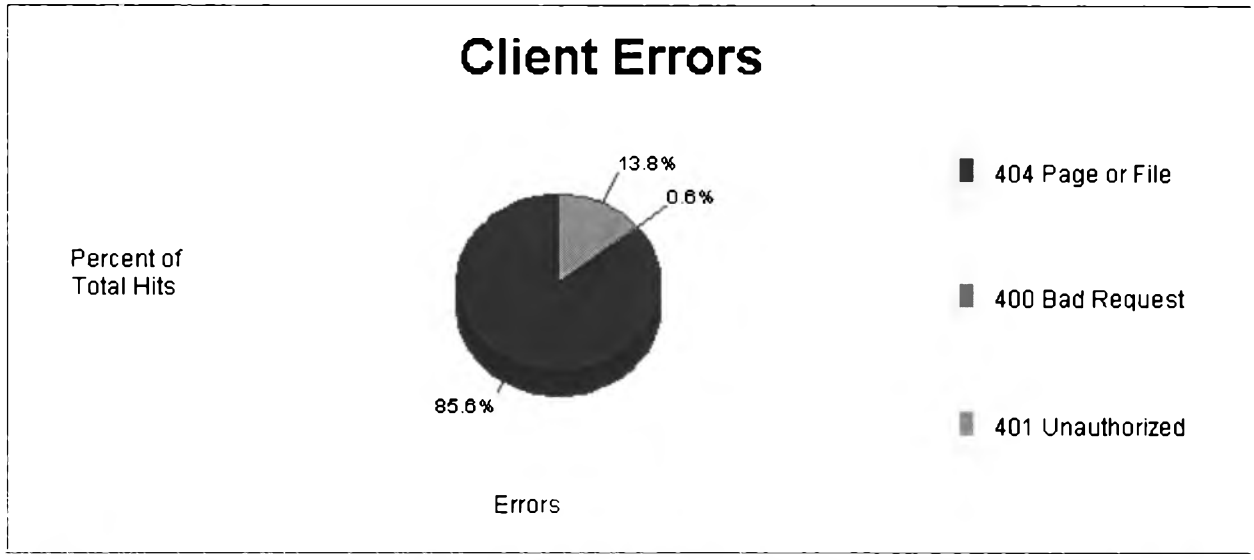
This section shows the number of successful form submissions compared to the number that failed. Webtrends considers anything with Post command as a form.



Forms Submitted By Users	
Type	
Successful Forms Submitted	
Failed Forms Submitted	
Total	

Client Errors

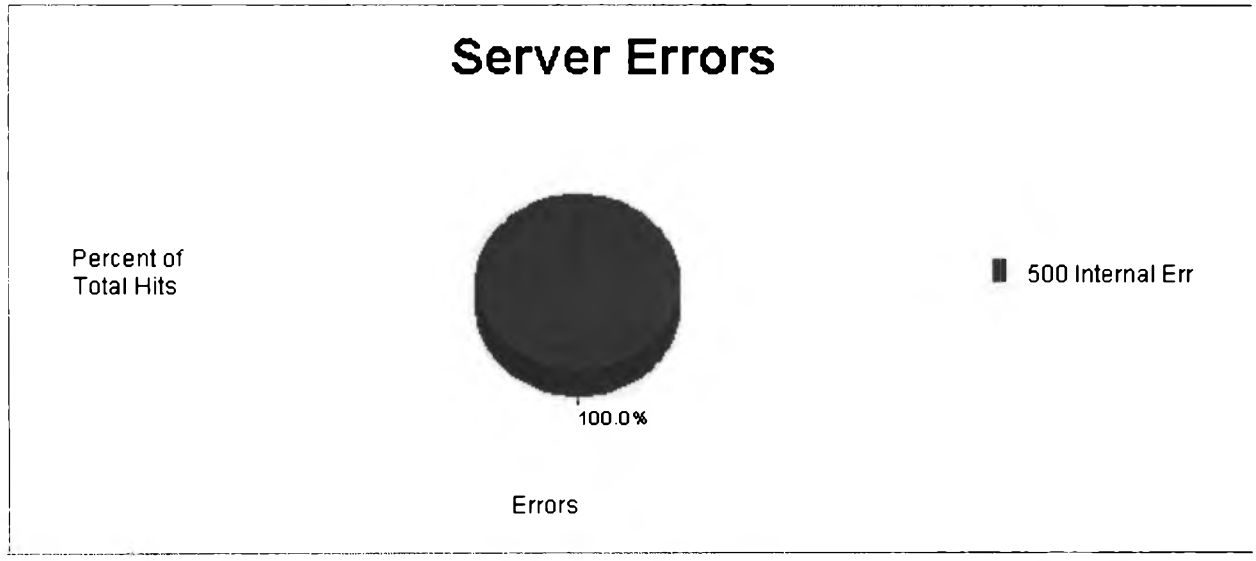
This section identifies the type of errors which were returned by the Client accessing your server.



Client Errors	
Error	
404 Page or File Not Found	
400 Bad Request	
401 Unauthorized Access	
Total	

Server Errors

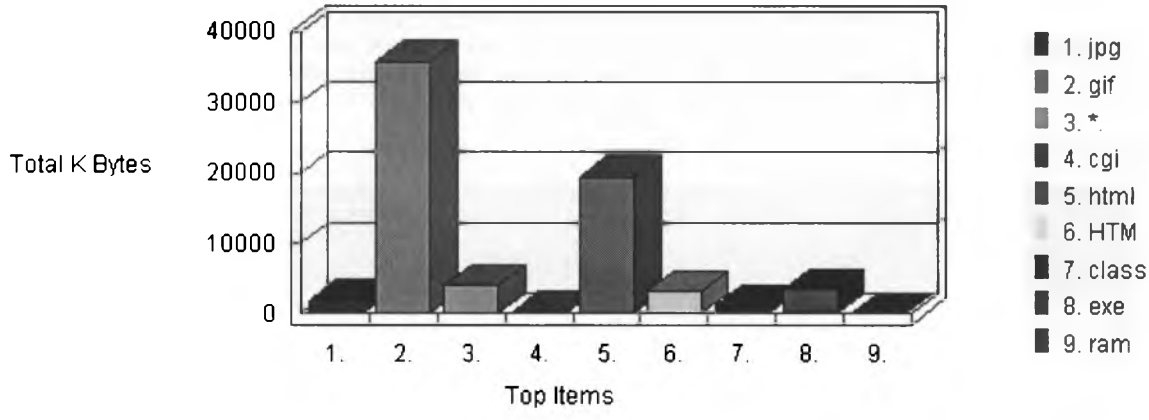
This section identifies by type the errors which occurred on your server.



Server Errors	
Error	
500 Internal Error	
Total	

Most Downloaded File Types and Sizes

This section identifies the download file types and the total kilobytes downloaded for each file type. Cached requests and erred hits are excluded from the totals.

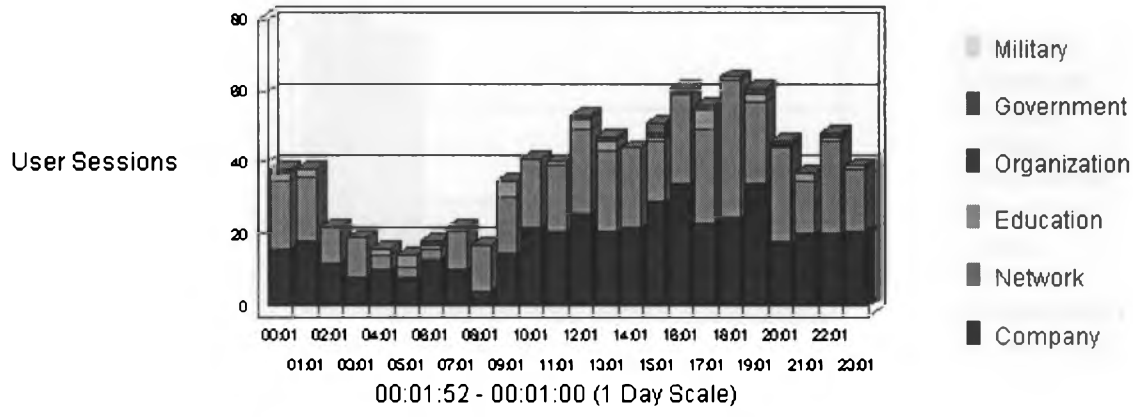


Most downloaded File Types			
	File type	No. of Files	K Bytes Transferred
1	jpg	300	1,892K
2	gif	10170	35,834K
3	*.	423	4,022K
4	cgi	835	158K
5	html	2084	19,483K
6	HTM	82	3,166K
7	class	150	1,130K
8	exe	14	3,449K
9	ram	17	1K
	Total Files & K Bytes Transferred	14075	69,132K

Organization Breakdown

This section provides a breakdown by types of organizations (.com, .net, .edu, .org, .mil, and .gov.) This information can only be displayed if reverse DNS lookups have been performed.

Organization Breakdown

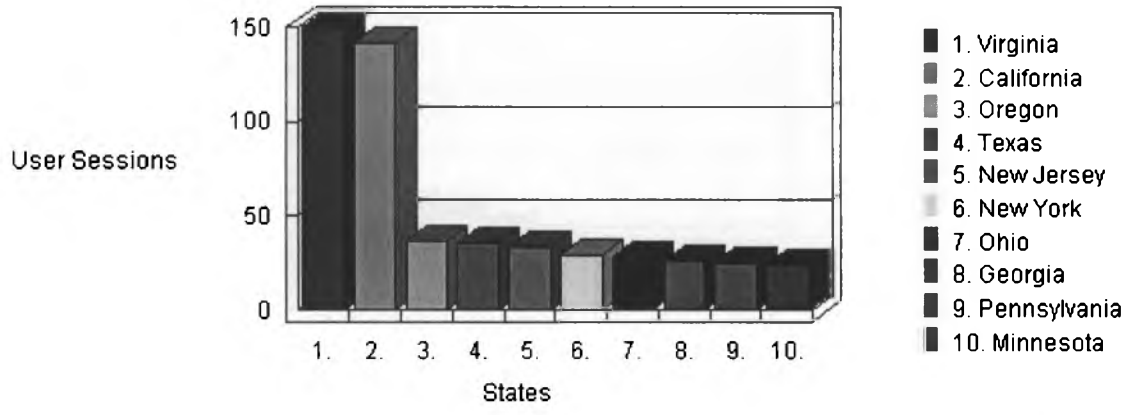


Organization Breakdown		
	Organization	User Sessions
1	Company	450
2	Network	424
3	Education	39
4	Organization	9
5	Government	4
6	Military	1
	Total	927

North American States and Provinces

This section breaks down Web site activity to show which of the North American States and Provinces were the most active on your site. This information is based on where the domain name of the visitor is registered, and may not always be an accurate representation of the actual geographic location of this visitor. This information can only be displayed if reverse DNS lookups have been performed.

North American States & Provinces

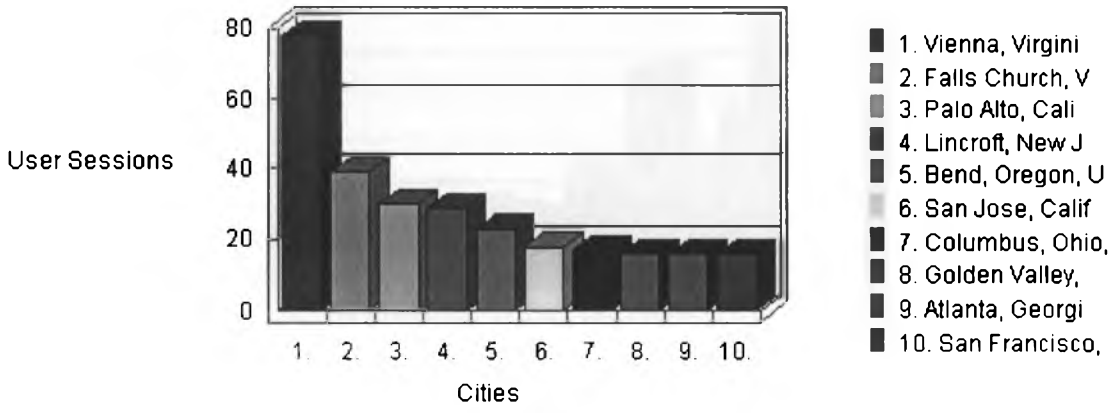


North American States & Provinces		
	State	User Sessions
1	Virginia	150
2	California	142
3	Oregon	36
4	Texas	35
5	New Jersey	33
6	New York	29
7	Ohio	28
8	Georgia	26
9	Pennsylvania	25
10	Minnesota	24
	Total For the States Above	528

Most Active Cities

This section further breaks down your Web site's activity to show which cities were the most active on your site. This information is based on where the domain name of the visitor is registered, and may not always be an accurate representation of the actual geographic location of this visitor. This information can only be displayed if reverse DNS lookups have been performed.

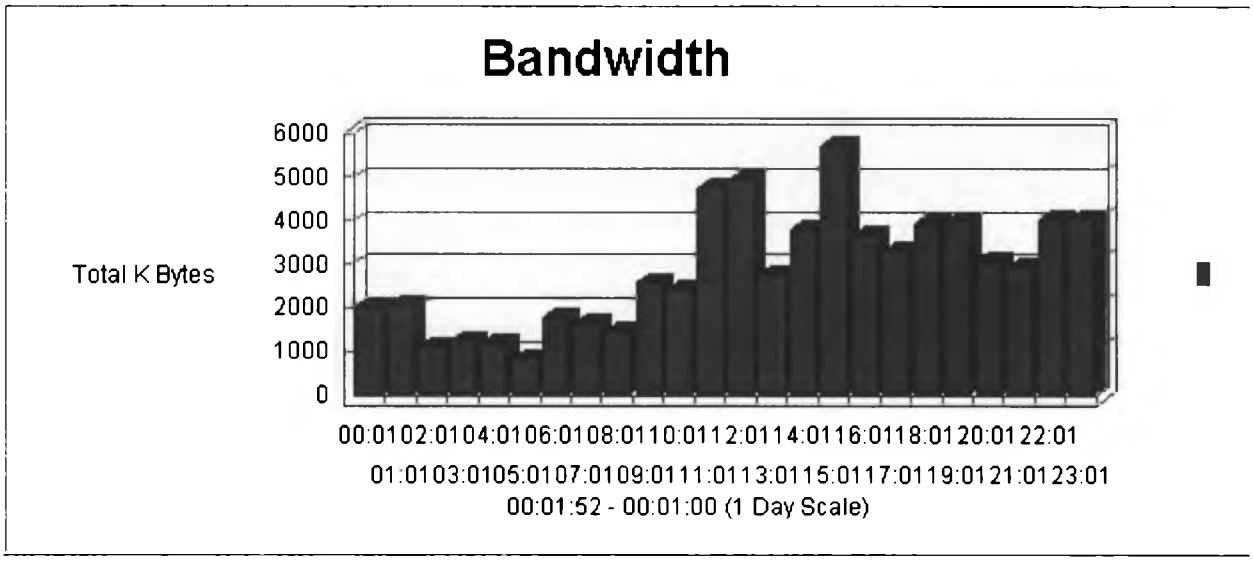
Most Active Cities



Activity by City		
	City, State	User Sessions
1	Vienna, Virginia, United States	78
2	Falls Church, Virginia, United States	39
3	Palo Alto, California, United States	30
4	Lincroft, New Jersey, United States	29
5	Bend, Oregon, United States	23
6	San Jose, California, United States	18
7	Columbus, Ohio, United States	17
8	Golden Valley, Minnesota, United States	16
9	Atlanta, Georgia, United States	16
10	San Francisco, California, United States	16
	Total For the Cities Above	282

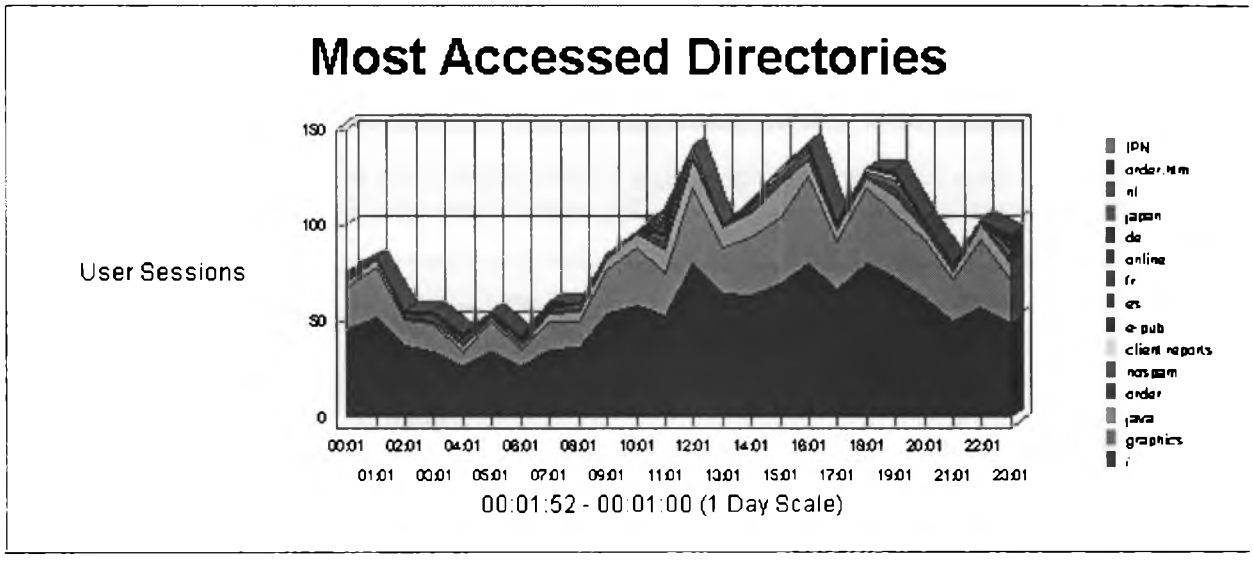
Bandwidth

This section helps you understand the bandwidth requirements of your site by indicating the volume of activity as Kbytes Transferred.



Most Accessed Directories

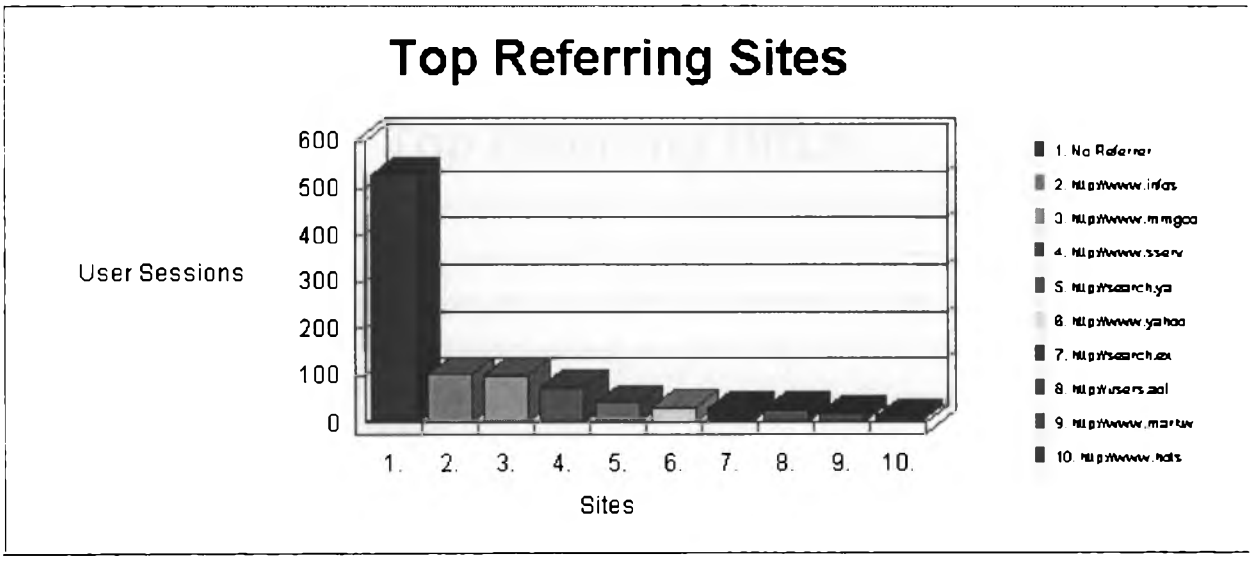
This section analyzes accesses to the directories of your site. This information can be useful in determining the types of data most often requested.



Most Accessed Directories			
Path to Directory	Non Cached %	Non Cached K xfered	User Sessions
http://www.mmgco.com/	88.51%	53,634K	1285
http://www.mmgco.com/graphics	88%	6,551K	592
http://www.mmgco.com/java	87.28%	1,131K	166
http://www.mmgco.com/order	100%	124K	46
http://www.mmgco.com/nospam	100%	556K	43
http://www.mmgco.com/client_reports	71.79%	6,589K	13
http://www.mmgco.com/e-pub	100%	97K	8
http://www.mmgco.com/es	100%	87K	8
http://www.mmgco.com/fr	100%	81K	7
http://www.mmgco.com/online	100%	1K	5
http://www.mmgco.com/de	100%	42K	4
http://www.mmgco.com/japan	100%	18K	4
http://www.mmgco.com/nl	100%	41K	4
http://www.mmgco.com/order.htm	100%	1K	3
http://www.mmgco.com/IPN	100%	38K	1
http://www.mmgco.com/emarketlive	100%	112K	1
http://www.mmgco.com/ads	100%	30K	1
http://www.mmgco.com/top100.html	100%	7K	1

Top Referring Sites

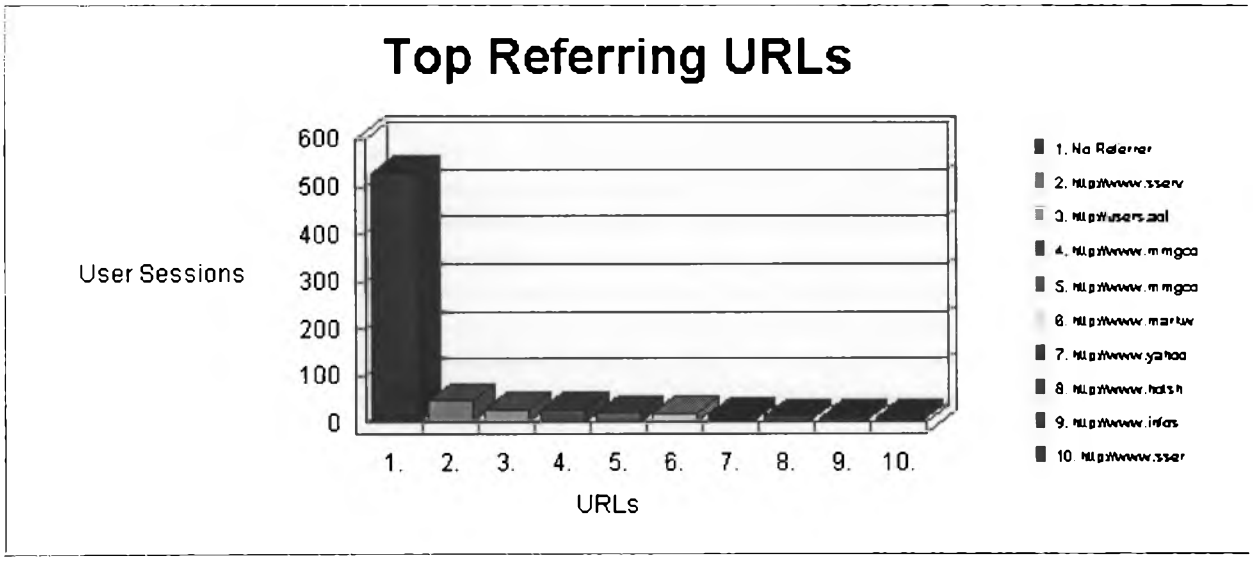
This section identifies the domain names or numeric IP addresses with links to your site. This information will only be displayed if your server is logging this information.



Top Referring Sites		
	Site	User Sessions
1	No Referrer	530
2	http://www.infoseek.com/	103
3	http://www.mmgco.com/	100
4	http://www.sserv.com/	76
5	http://search.yahoo.com/	43
6	http://www.yahoo.com/	32
7	http://search.excite.com/	30
8	http://users.aol.com/	29
9	http://www.markwelch.com/	20
10	http://www.hotsheet.com/	14
11	http://www.webcrawler.com/	13
12	http://www.metacrawler.com/	10
13	http://www.geocities.com/	10
14	http://www.looksmart.com/	10
15	http://www.bluebonnetvillage.com/	9
16	http://members.aol.com/	7
17	http://www.1second.com/	7
18	http://webcrawler.com/	7
19	http://www.bob3.com/	7
20	http://www.smithfam.com/	5
	Sub Total for the Referring Sites Above	1062
	Total for the Log File	1315

Top Referring URLs

This section provides the full URLs of the sites with links to your site. This information will only be displayed if your server is logging the referrer information.



Top Referring URLs	
	URL
1	No Referrer
2	http://www sserv.com/
3	http://users.aol.com/MichaelWK/user.htm
4	http //www.mmgco.com/4-star.html
5	http://www.mmgco.com/top100.html
6	http://www.markwelch.com/lists.htm
7	http://www.yahoo.com/Computers_and_Internet/Internet/World_Wide_Web/Announcement_Ser
8	http //www.hotsheet.com/
9	http://www.infoseek.com/Topic?tid=524&sv=IS&lk=noframes
10	http //www.sserv.com/?clicktrade=44489
11	http://www.mmgco.com/
12	http://www.yahoo.com/Computers_and_Internet/Internet/World_Wide_Web/Searching_the_We
13	http://www.sserv.com/?clicktrade=44117
14	http //www bluebonnetvillage.com/frtlnk.htm
15	http://www.1second.com/others.htm
16	http://www.mmgco.com/t1006in1.html
17	http://www.geocities.com/SiliconValley/Vista/7829/freeweb.html
18	http://search.excite.com/search.gw?trace=1&look=excite_netscape_us&sor
19	http://www.bob3.com/
20	http://www.dewa.com/othersubmit.shtml
	Sub Total for the Referrers Above
	Total for the Log File

Top Search Engines

The first table identifies which search engines referred visitors to your site the most often. Note that each search may contain several keywords. The second table identifies the main keywords for each search engine.

Top Search Engines	
	Engines
1	Yahoo
2	InfoSeek
3	Excite
4	WebCrawler
5	AltaVista
6	CNET
7	AOL NetFind
8	HotBot
9	Lycos
	Total of Searches for the Engines Above
	Total of Searches for the Log File

Top Search Engines with Keywords Detail	
Engines	Keywords
Yahoo	free

	search
	top
	usa.net
	mail
	100
	sites
	web
	464
	adogen
InfoSeek	100
	top
	advertising
	infoseek
	url
	web
	sites
	top100
	barginfinder
	book
Excite	top
	website
	free
	web
	sites
	100
	engines
	search
	register
	e-mail
WebCrawler	submit
	top
	it
	discussion
	100
	url
	10
AltaVista	usa.net
	free
	gorge
	horse*
	columbia
	riding
	mail
	netaddress
	mmg
	charities
CNET	advertising
	keith
	marketing
	topic:
	web
	holt
AOL NetFind	top
	search

	100
	registration
	engines
HotBot	account
	web
	merchant
	no
	on
	required
	sell
	things
	the
	to
Lycos	sales
	ph.d
	skamania

Top Search Keywords

The first table identifies keywords which led the most visitors to your site (regardless of the search engine). The second table identifies, for each keyword, which search engines led visitors to your site.

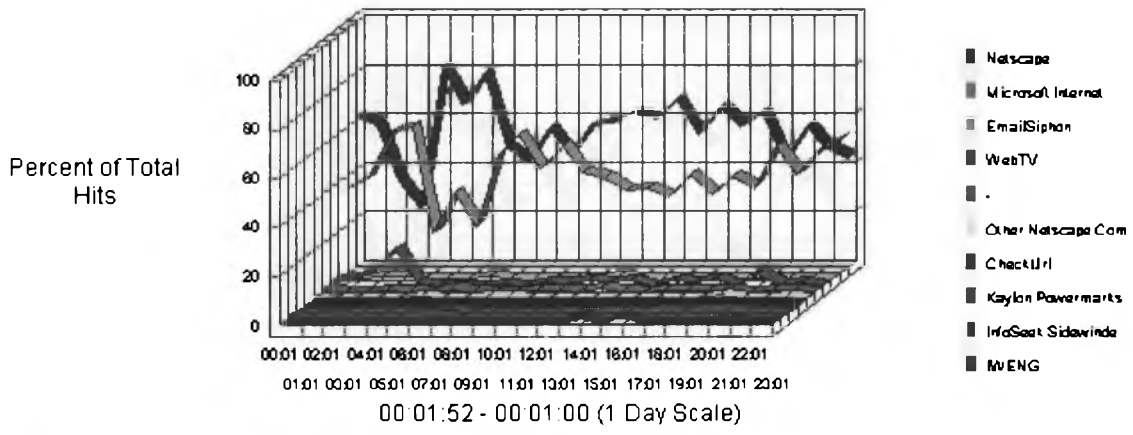
Top Search Keywords	
	Keywords
1	**top**
2	**100**
3	**free**
4	**sites**
5	**search**
6	**web**
7	**advertising**
8	**engines**
9	**website**
10	**url**
	Total Found for the Keywords Above
	Total of Keywords Found in the Log File

Top Search Keywords with Engines Detail	
Keywords	**Engines**
top	Yahoo
	InfoSeek
	Excite
	WebCrawler
	AOL NetFind
100	InfoSeek
	Yahoo
	Excite
	AOL NetFind
	WebCrawler
free	Yahoo
	Excite
	AltaVista
	InfoSeek
sites	Yahoo
	Excite
	InfoSeek
search	Yahoo
	Excite
	AOL NetFind
web	Excite
	Yahoo
	InfoSeek
	HotBot
	CNET
advertising	InfoSeek
	CNET
engines	Yahoo
	Excite
	InfoSeek
	AOL NetFind
website	Excite
	Yahoo
url	InfoSeek
	Excite
	WebCrawler

Most Used Browsers

This section identifies the most popular WWW Browsers used by visitors to your site. This information will only be displayed if your server is logging the browser/platform information.

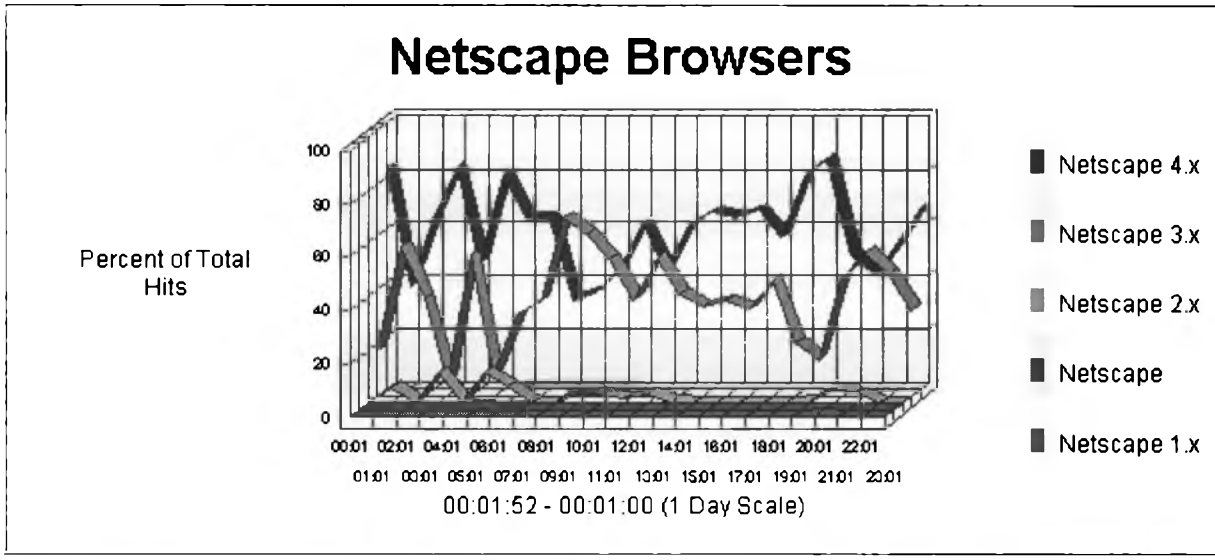
Most Used Browsers



Top Browsers		
	Browser	User Sessions
1	Netscape	675
2	Microsoft Internet Explorer	453
3	EmailSiphon	29
4	WebTV	27
5	-	23
6	Other Netscape Compatible	20
7	CheckUrl	7
8	Kaylon Powermarks	6
9	InfoSeek Sidewinder/0.9	6
10	IWENG	6
	Total For Browsers Above	1252

Netscape Browsers

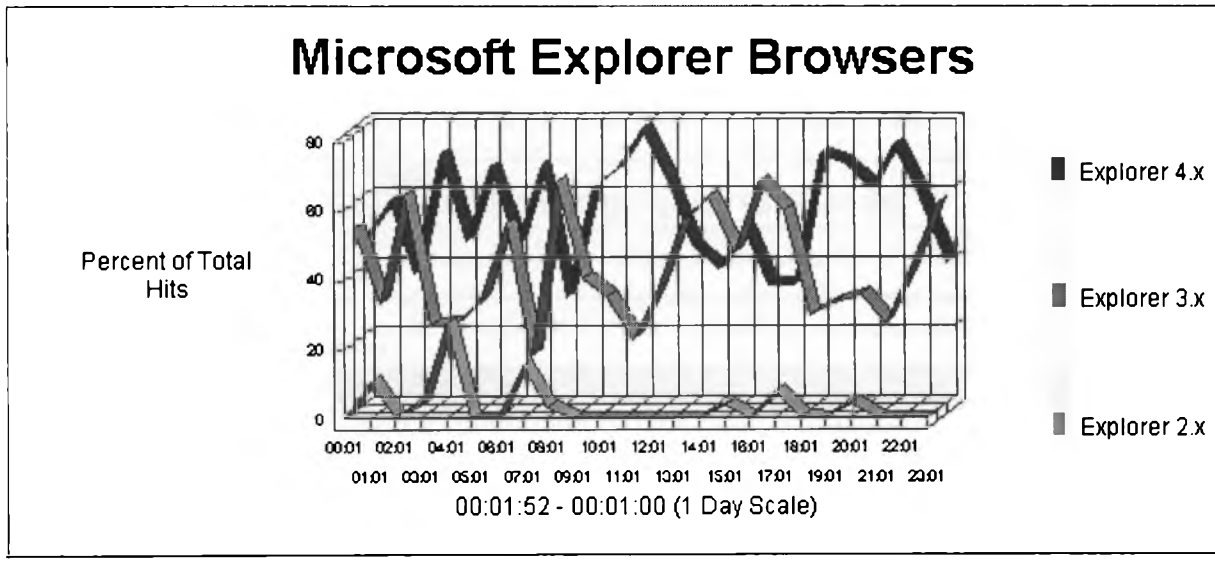
This section gives you a breakdown of the various versions of Netscape browsers that visitors to your site are using.



Netscape Browsers		
	Browser	User Sessions
1	Netscape 4.x	414
2	Netscape 3.x	247
3	Netscape 2.x	11
4	Netscape	2
5	Netscape 1.x	1
	Total For Browsers Above	675

Microsoft Explorer Browsers

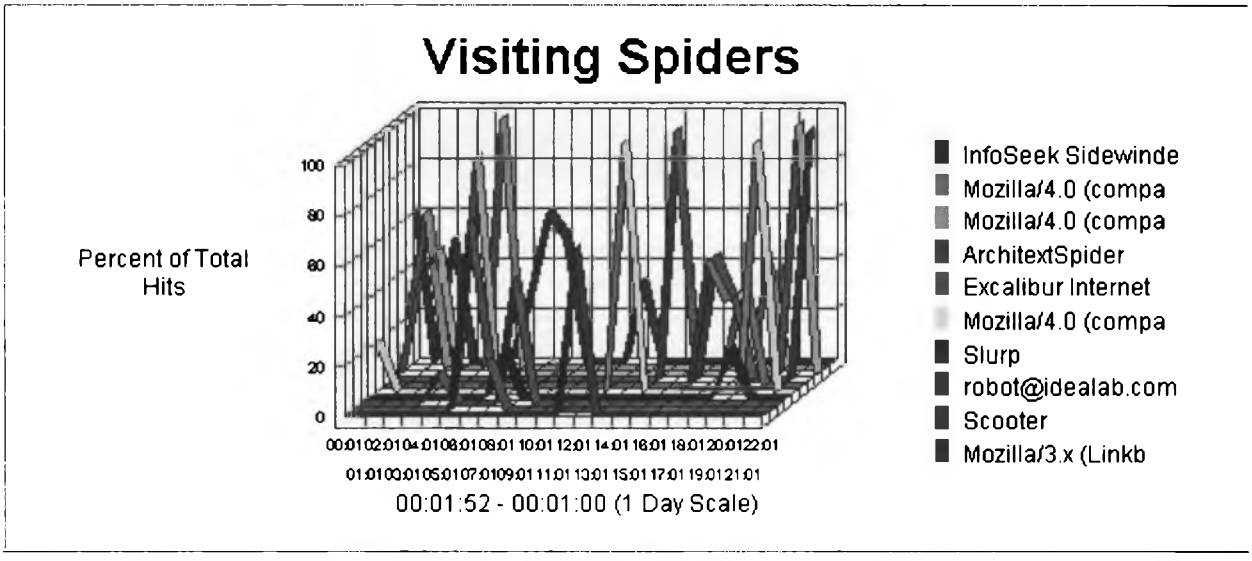
This section gives you a breakdown of the various versions of Microsoft Explorer browsers that visitors to your site are using.



Microsoft Explorer Browsers		
	Browser	User Sessions
1	Explorer 4.x	251
2	Explorer 3.x	195
3	Explorer 2.x	7
	Total For Browsers Above	453

Visiting Spiders

This section identifies all robots, spiders, crawlers and search services (i.e. Alta Vista, Lycos, and Excite) visiting your site.

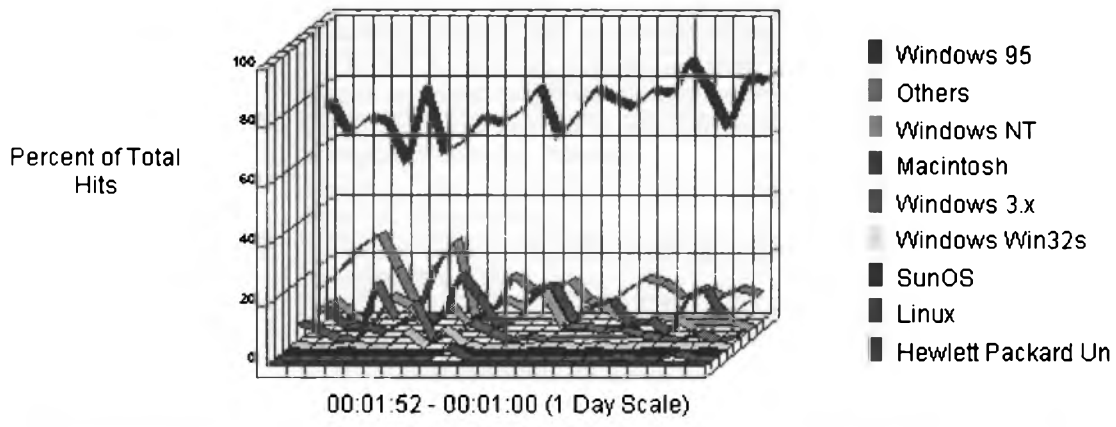


Visiting Spiders		
	Spider	User Sessions
1	InfoSeek Sidewinder	6
2	Mozilla/4.0 (compatible; MSIE 4.01; MSIECrawler; Windows 95)	6
3	Mozilla/4.0 (compatible; MSIE 4.01; MSIECrawler; Windows NT)	5
4	ArchitextSpider	4
5	Excalibur Internet Spider	3
6	Mozilla/4.0 (compatible; MSIE 4.0; MSIECrawler; Windows 95)	3
7	Slurp	2
8	robot@idealab.com	2
9	Scooter	2
10	Mozilla/3.x (Linkbot)	1
	Total For Spiders Above	34

Most Used Platforms

This section identifies the operating systems most used by the visitors to your Web site.

Most Used Platforms



Most Used Platforms		
	Platform	User Sessions
1	Windows 95	823
2	Others	267
3	Windows NT	80
4	Macintosh	73
5	Windows 3.x	40
6	Windows Win32s	22
7	SunOS	6
8	Linux	3
9	Hewlett Packard Unix (HP9000)	1
	Total For Platforms Above	**1315**

Glossary

Following are definitions for terms used in this report and throughout the World-Wide Web in general. These terms are also common to the WebTrends analysis tool.

Glossary	
Ad Clicks	Action from a user clicking on an advertisement to get more information.
Ad Views	Display of an advertisement on the HTML page a user is viewing.
Authentication	Technique by which access to Internet or Intranet resources requires the user to identify himself or herself using a name and password.
Bandwidth	Measure (in kilobytes of data transferred) of the traffic on the site.
Browser	A program used to locate and view HTML documents (Netscape, Mosaic, Microsoft Explorer, for example.)
Click through rate	Percentage of users who click on a viewed advertisement. This is a good indication of the effectiveness of this ad.
Client	The browser (see above) used by a visitor to a Web site.
Client Errors	An error occurring due to an invalid request by the visitor's browser. Client errors are in the 400-range. See "Return Code" definition.
Company Database	The database installed and used by WebTrends to look up the company name, city, state and country corresponding to a specific

	domain name.
Domain Name	The text name corresponding to the numeric IP address of a computer on the Internet (i.e., www.webtrends.com).
Domain Name Lookup	The process of converting a numeric IP address into a text name (for example, 204.245.240.194 is converted to www.webternds.com).
Forms	An HTML page which passes variables back to the server. These pages are used to gather information from users.
FTP	File Transfer Protocol is a standard method of sending files between computers over the Internet.
GIF	Graphics Interchange Format is an image file format commonly used in HTML documents.
Hit	An action on the Web site, such as when a user views a page or downloads a file.
Home Page	The main page of a Web site. The home page provides visitors with an overview and links to the rest of the site. It often contains or links to a Table of contents for the site.
Home Page URL	The local path or Internet URL to the default page of the Web site for which WebTrends reports will be generated.
HTML	Hyper Text Markup Language is used to write documents for the World Wide Web to specify hypertext links between related objects and documents.
HTTP	Hyper Text Transfer Protocol is a standard method of transferring data between a Web **server** and a Web **browser**.
IP Address	Internet Protocol address identifying a computer connected to the Internet.
Page Views	Also called Page Impressions. Hit to HTML pages only (access to non-HTML documents are not counted).
Platform	The operating system (i.e. Windows 95, Windows NT, etc.) used by a visitor to your Web site.
Protocol	An established method of exchanging data over the Internet.
Referrer	URL of an HTML page that refers to your Web site.
Return Code	The return status of the request which specifies whether the transfer was successful and why. **Possible "Success" codes are:** **200 = Success**: OK **201 = Success**: Created **202 = Success**: Accepted **203 = Success**: Partial Information **204 = Success**: No Response **300 = Success**: Redirected **301 = Success**: Moved **302 = Success**: Found **303 = Success**: New Method **304 = Success**: Not Modified **Possible "Failed" codes are**: **400 = Failed**: Bad Request **401 = Failed**: Unauthorized **402 = Failed**: Payment Required **403 = Failed**: Forbidden **404 = Failed**: Not Found **500 = Failed**: Internal Error **501 = Failed**: Not Implemented **502 = Failed**: Overloaded Temporarily **503 = Failed**: Gateway Timeout
Scripts	An HTML page which passes variables back to the server.
Search Engines	A databased website containing information which can be used to find sites of interest.
Server Errors	An error occurring at the server. Server errors are in the 500-range. See "Return Code" definition.
Site (Web)	A location on the Internet containing HTML documents that visitors can view using a browser. Sites are hosted on servers that record activities in log files.

Spiders	An automated program which searches the internet.
Suffix (Domain Name)	The three digit suffix of a domain can be used to identify the type of organization. Possible "Suffixes" are: .com = Commercial .edu = Educational .int = International .gov = Government .mil = Military .net = Network .org = Organization
URL	Universal Resource Locator is a means of identifying an exact location on the Internet. For example, http://www.webtrends.com/html/info/default.htm is the URL which defines the use of HTTP to access the Web page Default.htm in the /html/info/ directory on the WebTrends Corporation Web site). As the previous example shows, a URL is comprised of four parts: Protocol Type (HTTP), Machine Name (webtrends.com), Directory Path (/html/info/), and File Name (default.htm).
User Address	The domain name or IP address for the remote user.
User Agent	The fields in an extended Web server log file indicating the browser and the platform used by a visitor.
User Session	A session of activity (all hits) for one visitor to a Web site. A unique user is determined by the IP address or domain name. By default, a user session is terminated when a user falls inactive for more than 30 minutes. Synonyme: Visit.
Views	See "Page Views".
Visit	See "User Session".
World Wide Web (WWW, the Web, W3)	The Web is a hypertext-based, distributed system developed to provide Internet users an easy, intuitive means of accessing information.

Attachment 3

From ???@??? Thu Jan 09 19:57:18 1997
Return-Path: <rjones@pa.dec.com>
Received: from mail1.digital.com by po.opole.pl (5.0/SMI-SVR4)
        id AA11150; Thu, 9 Jan 1997 19:12:19 --100
Received: from pao.pa.dec.com by mail1.digital.com (5.65 EXP 4/12/95 for V3.2/1.0/WV)
        id AA30204; Thu, 9 Jan 1997 10:03:56 -0800
Received: by pao.pa.dec.com; id AA20551; Thu, 9 Jan 97 10:03:51 -0800
Message-Id: <9701091803.AA20551@pao.pa.dec.com>
To: jwielki@ss5.po.opole.pl
Subject: re: Second request from Poland
Date: Thu, 09 Jan 97 10:03:51 -0800
From: "Russ Jones" <rjones@pa.dec.com>
X-Mts: smtp
Content-Type: text

Janusz,

I just saw your message. Although the use of the Internet is rampant through out Digital, we would be hard pressed to say there was a deliberate re-engineering. Because Digital was into the Internet so earlier as a company, it didn't take a deliberate act of the CEO to jump-start the use of the Intenet inside the company. Our Intranet has consistently grown over the last decade. I've attached some facts and figures and a historical overview of Digital's use of the Internet.

Russ Jones
Digital Equipment Corporation
==========
==========
Digital Facts and n Figures

Public Internet Presence

EMail

Three tiers of Email addresses:

1 corporate address (info@digital.com)
50 business unit addresses
60,000 employee email addresses

5M email messages per month pass through Digital's corporate email gateway.

World Wide Web

Digital was the first Fortune 500 company with a Web site

o One of the first organizations on the Web, Digital was Web server #490
[out of today s 647k Web servers]
o Launched October 1st, 1993

- o 3k hits per day have grown to 580,000 hits per day on the www.*.digital.com server family, not counting AltaVista Search (as of 9/1/96)
- o Aggregate 130M hits over the last three years (35 months) (as of 9/1/96)

We are coming up on the 3 year launch anniversary on 10/1/96. Digital was also the first computer company to use the Web as an advertising medium.

Digital s external Web presence

Digital's external Web presence is really a family of Web servers:

42 Web servers
running UNIX, Windows NT, and OpenVMS
on both Intel and Alpha platforms
spread across 14 gateways with
21 corporate Web servers and
21 country Web servers

Corporate Web Server

The www.digital.com server by itself has:

3.7 GB of information, encompassing
57,000 total files (HTML, PDF, TXT) (as of 9/1/96), of which there are
12,000 HTML files (as of 9/1/96), containing
139K hyperlinks (as of 3/1/96)
About 30,000 incoming hyperlinks point to Digital s Corporate Web Server (www.digital.com)

AltaVista Search

AltaVista s Spider has discovered and indexed 275k unique Web servers on the public Web (7/1/96)
32M pages indexed (every word) (as of 9/1/96)
17.5M hits per day (during business week) (as of 9/1/96)
About 100,000 incoming hyperlinks point to AltaVista Search

Digital s Intranet

100,000+ Nodes
1,300 Web servers (as of 9/5/96)
900,000 URLs (as of 9/9/96)
  500,000 of these are indexed
  100,000 were excluded from robot indexing
  300,000 have yet to be indexed
45,000 Web users (estimated)

Digital Revenue over the Internet

$1.4B in total electronic revenue (as of 7/1/96)
$210M of that over the Internet (as of 7/1/96)

==========

Digital Internet History
Revision 1.27 -- last updated September 10th, 1996

1996

September

- Netscape's World Wide Web site is now powered by an AlphaServer 8400.
- Digital's Intranet now has 1,300 nodes containing approximately 900,000 URLs. 500k of these documents have been indexed by Digital's internal spider.
- Web-enabled employee user base now estimated at 45,000 people.

August

- Digital's external Web presence now includes 42 Web servers running UNIX, Windows NT, and OpenVMS on both Intel and Alpha platforms with 21 corporate Web servers and 21 country Web servers .
- AltaVista Tunnel and AltaVista Firewall are now available on Windows NT running on both Intel and Alpha-based platforms.
- SPEC announces industry-standard SPECweb96 benchmark. Digital announces best SPECweb96 performance data in the industry based on Alpha technology.
- BEA Jolt added to Digital's Internet Commerce portfolio. Combined with Digital's tunneling technology, Jolt provides secure transaction processing between Tuxedo-based back-ends and Java-based front-ends.

July

- Digital's external Web presence now spread across 14 distinct gateways around the world.
- Digital launches TP Internet Monitor for fast, secure enterprise transaction processing over the Internet.
- Epsilon and Digital introduce GIGAswitch/IP -- the industry's fastest IP switch.
- Digital becomes first computer company to operate an Internet Network Access Point (NAP) when it opens the Digital Internet Exchange in Palo Alto.
- iCat Electronic Commerce Suite now available on Digital's Alpha platform.
- Lycos selects Digital UNIX, AlphaServer 8400 and StorageWorks products to power the Lycos search engine.
- AltaVista gets personal as "AltaVista My Computer Private eXtension" is made available for free beta-testing over the Internet.

o In a worldwide study of Internet consults and Internet systems integration providers, the Gartner Group names Digital one of the top four firms.

June

o Digital's own Internet-based Customer Ordering facility ends fiscal year with over $210M in revenue
o Internet transport support added to DEC/EDI software product.
OpenVMS Internet Product Suite quickly and painlessly transforms an
o OpenVMS Alpha or VAX system into a web client or server.
o Digital Firewall for OpenVMS provides secure Internet connectivity for Digital installed base.
o Yahoo! becomes first customer in AltaVista Search mirror site program and integrates AltaVista Search as the Internet search engine of choice.
o Internet AlphaServer technology selected to power Canada's first Internet payment processing service, The PayPro Network.
o AltaVista Search receives c/net award for Internet Excellence.
Digital's Intranet now has 1,100 nodes containing over 600,000 URLs.

May

Internet AlphaServers lead the industry in WebStone performance metrics. Test reveal that the AlphaServer 1000 4/266 can sustain 6 to 9 times the network traffic of SGI's or SUN's systems.
Digital's AltaVista Search Web site receives Internet World magazines "Industry Award for Outstanding Service".
Formation of Internet Software Business Unit and a realignment of all Internet software products underneath the AltaVista brand.
A four prong AltaVista Search product strategy is revealed with a mirror site licensing program, an Intranet-focused Enterprise Edition, and both Workgroup and Personal Editions.
AltaVista Mail introduced and made available for free, 60-day trial evaluation over the Internet.
Digital's StrongARM microprocessor chosen by Oracle to power Java-based network computers.
Windows NT-based Internet AlphaServer wins "Best Buy" award from Internet Magazine.

April

Co-marketing relationship with CyberCash announced.
Existing relationships with Netscape and Open Market are extended into Internet commerce market.
Boston Marathon project.
Digital, Microsoft, and MCI announce alliance to provide integrated Intranet solutions in the United States.
Digital announces TruCluster high-availability technology for Digital UNIX. This remarkable software supports virtual IP addresses within a

clustered environment and allows http servers, proxy servers, news servers, and mail relays to restart in seconds after being taken off-line.
Digital opens ISP Solutions Center.

March

AltaVista Search extended to help locate Java applets.
Digital's use of the Internet is profiled in "The Internet Strategy Handbook: Lessons from the New Frontier of Business", available from Harvard Business School Press.

February

Digital announces four Internet solutions sets that bring together partner applications, Internet server technology and Internet systems integration into a single market offering.
Digital teams with Washington Post, ABC News, and Newsweek on "Election Line" Web server.
BYTE Magazine rated the Internet AlphaServer 100 4/266 "Best Overall" in their "Heavy-Duty Web Servers" Shoot-out.
Workgroup Web Forum wins PC WEEK Editor's Choice award.
External Web presence now spans 13 countries.
AltaVista Search identifies 39,000 incoming hyperlinks to Digital's World Wide Web server.

January

AlphaServer sets new RSA public-key encryption processing record.
Internet AlphaServer Software Kit, V2.0, includes bundled News server and PPP support.

1995

December

Digital endorses JavaScript.
AltaVista Search launched, instant "Cool Site of the Day".

November

Digital's intranet now has over 97,000 nodes.

October

Digital joins PICS, the cross-industry working group assembled to develop easy-to-use Internet content labeling.
Digital Internet Tunnel introduced (Encrypted IP Tunneling).
18 Internet-specific services are launched as part of the "Digital Internet Services Roadmap".

Internet Innovators Program is launched to help Internet start-up organization port leading edge Internet applications to the Alpha platform.

September

Digital forms Internet Software Business Unit.
Primary Destination: New Hampshire project
Web-based Collaboration Tool introduced (Workgroup Web Forum).
Pre-packed Windows NT Internet Servers are introduced.
Digital's External Internet presence in 11 countries.
Digital helps launch CommerceNet CALS Pilot.

August

Digital platforms power Microsoft's Windows 95 Web server
Internet AlphaServer packaged as software kit
Digital drives first IPv6 interoperability demo at TCP/IP Expo

July

State of Queensland (Australia) Election Web Server
First major Internet gateway in Valbonne, FR (europe.digital.com)
Millicent protocols for electronic "micro" commerce presented at first USENIX workshop on electronic commerce

June

Digital's own Internet-based Customer Ordering facility ends fiscal year with over $150M in revenue
Digital named finalist in NII awards (Election Project)
TOWN HALL Web site launched with Heritage Foundation
Belgium Elections Web Server
European Internet PartnerNet established

May

2nd generation firewall products are launched
Digital User Society (DECUS) hosts its first World Wide Web track
WAIS relationship announced
French Election Web Server project

April

Digital Web server named one of the top 25 by Advertising Age
NewsPage project with Individual, Inc.

March

Wireless PDA Web Browser research presented at COMPCON95

February

Sports Illustrated Swimsuit Project
Process Software relationship formed, first commercial Windows NT Web server software announced

January

Washington/Moscow Internet videoconferencing project

1994

December

Canadian Museum of Civilization project

November

State of California Election project
Digital runs it's first Internet television ad
Turnkey family of Internet servers launched
Digital/Netscape relationship formed and Digital becomes first Netscape OEM

October

Digital is a founding member of the World Wide Web Consortium (W3C) -
Harvard Business School releases Case Study, "Digital Equipment Corporation: The Internet Company"

September

Interactive DECdirect Catalog goes live on Web

August

Digital's Internet Business Group formed

July

Capability to run Internet over Cable TV (ChannelWorks Brouter)

May

Software Patch server goes online
Digital wins "Internet Marketing Award" at Internet World'94
Digital launches 1st generation firewall product

First company advertisement that includes URL call-to-action
Digital publishes proxy server characterization study at 1st International World Wide Web conference

April

Digital is one of the original sponsors of CommerceNet
California Virtual Tourist Project launched
Digital endorses VRML

February

"Glimpse of the Future" World Wide Web Video released
Corporate WAIS server goes online (wais.digital.com)
Internet Electronic Connection goes online to support interactive customer ordering

January

City of Palo Alto and Future Fantasy Bookstore projects

1993

December

Digital User Society (DECUS) hosts its first Internet track
Digital's use of the Internet is profiled in "Doing Business On The Internet".

November

Email traffic through corporate gateway reaches 2,000,000 messages per month.

October

Corporate Web server goes online and becomes first commercial Web server from a Fortune 500 company (www.digital.com)

September

digital.com domain established to reinforce corporate brand identity
info@digital.com corporate email address established August
External Web access for employees enabled through corporate firewall
Digital hosts Interop'93 World Wide Web server

June

Digital launches first external Web server and registers in "NCSA

What's New" listing.

May

NCSA Mosaic enters the corporation.
First Departmental Web server established on Digital's Intranet.

Alpha Test-Drive systems available on Internet.

1992

Secure HHA (Cryptokey) support implemented with corporate firewall
Corporate-wide TCP/IP network becomes official
Digital Firewall technology deployed as Systems Integration service
Product Information FTP archive introduced in support of the Alpha product launch

1991

FTPmail launched to support FTP file access by email
First Internet-based Customer Newsletter launched

1990

Public USENET Newsgroups used for customer support
Digital forms Network Systems Lab to focus on Internet research

1989

Digital internal TCP/IP networks span 15 countries.
Digital announces the world's first commercial Internet print server, with bundled in multivendor support.
Digital becomes the first computer company with a 10-MBPS link to the Internet. The growing popularity of Internet services within Digital cause us to outgrow our existing links.

1988

dec.com established as a "class A" TCP/IP network.
Digital internal TCP/IP networks links 100 sites.

1987

Digital internal TCP/IP networks link 10 sites
Gateway moves to multi-host configuration as individual servers are broken out onto separate systems

1986

gatekeeper.dec.com launched as major FTP site on the Internet
Digital creates the first Internet firewall

1985

Digital becomes first computer company to register an Internet domain (dec.com established as a "class B" TCP/IP network).
Digital creates first Corporate Internet mail gateway -- this gives every email user in Digital full access to the Internet.

1984

Digital builds second Internet gateway in Palo Alto, becoming the first organization anywhere to have two geographically separate gateways.

1983

Digital establishes Internet connectivity, initial Email, FTP archive, Usenet News hub established.

1977

The ARPAnet is 60 nodes. Digital is the first computer company or networking company to connect. We use a PDP-10.

X-Sender: davenport@mail.utexas.edu
X-Mailer: Windows Eudora Light Version 1.5.4 (32)
Date: Mon, 29 Sep 1997 15:17:36 -0500
To: Janusz Wielki <jwielki@ss5.po.opole.pl>
From: Tom Davenport <davenport@mail.utexas.edu>
Subject: Re: Reengineering - fad or not ?

Janusz,
Thanks for your thoughtful message. I think that reengineering did become a fad -- well after my book, so I couldn't talk about it there. It had all the attributes of a management fad, including overly high level of expectations, shallow understanding by many enthusiasts, worship of a guru (unfortunately not me!), and simplified adoption in companies. However, that doesn't mean that the components of reengineering weren't important. I agree with you that business process orientation, use of IT to change work, etc. are still very important points that companies should consider. The fad has died down in the US, though many companies still use IT to change how they do work. They just don't necessarily call it reengineering any more. I don't know if reengineering will be taught around the world - there are a good number of courses in the US, but I'm not sure how long they will last.

The only other papers I have available on the Internet about reengineering are on the Harvard Business School Publishing site, which can be reached through www.hbs.edu -- if you do a search under my name I think you will find, for example, a paper called "The Past, Present, and Future of Business Process Reengineering" and if you are an instructor (or if you can get your professor to do it for you) you can download a copy over the Web. I also have several papers on knowledge management which can be found at www.bus.utexas.edu/kman

Good luck on your thesis.
Tom Davenport

X-Lotus-FromDomain : AMAWORLD@AMAINT_ MUC
From: ralencar~amadeus.net (R. Alencar)
To: <jwielki@polo.po.opole.pl>
Date: Thu, 8 Jan 1998 10:32:11 +0100
Subject : Re : Amadeus bookinq throuqh Web site

Hello Janusz,

We provide booking engines to our usual business partners (travel agents, airlines, hotels, car rentals).

The first booking engines implemented provided AIR BOOKING facilities. We then added HOTELS, and are now going to add CARS.

If the customer is an airline, let us say Finnair, they are primarily interested in allowing booking on themselves. They may accept booking on other carriers if there is a connection with Finnair.

Later, to make the site more attractive, they may also allo HOTEL and CAR bookings .

From a travel agent perspective, they normally want to book all three types of providers.

I am sending below an "electronic brochure", which explains our product and gives some URL's for checking.

Brqds,
Ruy Alencar

Amadeus Traveller Link

Internet Booking Systems for Airlines

The Amadeus Traveller Link range of Internet solutions is ideal for any airline wishing to offer information and secure booking facilities via the World Wide Web. Based on the latest generation of Web browsers, you can rest assured that your data will only be accessed through secure controls with user validation protocols built in to our top-of-the-range Web reservation system: lA-Res Custom.

Accessible directly by your customers, this service queries the Amadeus Central System for up-to-date flight and travel information -- all under the brand identity of your airline.

Customers will expect you to have a strong Web presence with an online search engine that works from day one. Amadeus is already your partner and our development has been firmly linked with the airline industry. So we know what your concerns are, and we recognize how important it is for your Web-based services to be completely secure.

lA-Res Custom means you can incorporate ready-made, tried-and-tested Internet solutions of the world's largest GDS into your Web site facilities. The quality of data is guaranteed

because the information displayed to the user comes directly from our database centre in Erdinq, Germany. The data is exactly the same as if it were sourced from an Amadeus terminal in the traditional way. In addition, you can tailor the data to show the specific availability and fares that you wish to show on the Web.

Benefits:

* Secure access by the user with validation protocols.
* A ready-made solution that works efficiently from the start. Following simple acceptance tests, your Amadeus Web reservation system is available straight away.
* Your airline branding.
* Real-time access to the information held by the Amadeus Central System.
* The first Internet booking system available in four languages, and is customisable for more as required. The system currently is available in English, German, French and Spanish.
* No installation of hardware or software needed.

Examples

For an example of a typical installation, take a look at a site for a fictitious airline Amadeus created called World Airlines :

http: //wwwndt.amadeus-gtd.es/demo/WorldAirways/index.htm

LOGIN amadeus1a
PASSWORD juniper

Here are some live examples

Iberia's website, with our booking engine can be reached at this URL:
http: //www.iberia.com

Aerolineas Argentinas website in Buenos Aires is :
http: //www.aerolineas.com.ar

A Walk Through the Product

1) Accessing Your Home Page

The user points the browser to your existing home page on the World Wide Web and is presented with a variety of information and options -- including the opportunity to check schedules and availability. This is achieved using a link to the Amadeus Web reservation system- The process is completely transparent to the user.

2) Traveller Profile

Essential before making a reservation is the creation of a Traveller Profile. This profile

contains important information such as personal data, ticket delivery address, type of seat required, frequent flyer details and method of payment. This is needed to match user preferences and to confirm any online reservation. When this has been completed to the user's satisfaction, the details are saved by the system. A Traveller ID and Password must be created on the system and used each time the user logs on. This enables the Traveller Profile to be called up every time your Web reservations system is used. Of course, the Traveller Profile data created for your booking engine is only available to yourselves and the traveller himself.

3) Payment Information

The user wishing to book a flight has the option of how to pay. This may be achieved "on account" to regular or business customers who already have credit facilities with your airline. Your airline may also choose to offer an online credit card transaction service which is protected by the security and encryption features of the user's Internet browser and the Amadeus Internet server. A third option would be payment on delivery or collection of the ticket. The actual type of payment facilities offered will depend on the policy and preference of your airline.

4) Delivery Information

Various forms of delivery options are possible, depending on the user's requirements. Pick up can be specified for an airport or city ticket office, or delivered by post, courier or other arrangement. Optionally, you can include selected travel agents, providing they use Amadeus and have accepted to receive Internet bookings. Delivery information is also protected by the user's encryption features within their browser.

5) Flight Search

Schedules and availabilities are easily queried by the user by entering the required information; departure date and time, return date and time and the city name/airport code of the departure destination. No cryptic commands are necessary to make a flight query. Simple everyday words are used. You have complete control and discretion as to which airline flights are shown on this screen --- your own, code shares and any other airlines you have agreements with.

6) Flight Availability

Flight availability can be shown according to parameters set by you, such as which flights you want to make available through the Web reservation system, elapsed flight time, availability by cabin showing if the service exists and if there are seats available in the class chosen. Travellers can then chose the flights for pricing by a few simple clicks on the screen.

7) Flight Price

The system prices the itinerary according to the class selected (first, business or economy).

The lowest fare for the selected class is shown and can include restricted fares if required by your airline. You have the choice of showing public fares only, negotiated fares only, or a combination of both. The traveller can choose another combination by simply returning to the previous screen.

8) Booking Confirmed !

Having confirmed the flight requirements, the traveller will see the full booking , information on the screen : the record locator, PNR reference, itinerary and flight information, fares, payment and delivery methods plus other profile details (if they have been included) such as seat type and meal preference. The traveller can then print out or store this information for future reference.

And the journey begins!

From: Alan Powell <alanp@apqc.org>
To: "'Janusz Wielki'" <jwielki@polo.po.opole.pl>
Subject: RE: Question about labels used in Process Classification Framework
Date: Fri, 6 Mar 1998 07:38:32 -0600
X-Mailer: Microsoft Internet E-mail/MAPI - 8.0.0.4211
Encoding: 40 TEXT
X-Info: Via APQC Mail

Hi Janusz,

We have commonly used the lable "Macro Process" at the "4" level, and "Sub-Process" at the other levels.

Regards.

Alan Powell
Director, Information Services & Systems
American Productivity & Quality Center (APQC)
123 North Post Oak Lane Houston, Texas 77024
alanp@apqc.org <www.apqc.org>

-----Original Message-----
From: Janusz Wielki [SMTP:jwielki@polo.po.opole.pl]
Sent: Thursday, March 05, 1998 6:15 PM
To: alanp@apqc.org
Subject: Question about labels used in Process Classification Framework

Dear Mr. Powell,
Few months ago we exchanged e-mails concerning H.J.Harrington processes' model and labels used by him (macroprocess, subprocess, activity, task).
In my Ph.D. dissertation I would like to present both models: yours and Harrington's. Because of this I would like to know what labels do you use in your model. For example:
4. Market and Sell (Process)
4.1 Market products or services to relavant customer segments (sub-process ?)
4.1.1 Develop pricing strategy (task ?)

.
4.2 Process customer orders (sub-process ?)
It would be very helpful for me if you could clearify this issue.
Thank you very much in advance.

Sincerely,
Janusz Wielki
45-401 Opole
ul. Bielska 32/7
Poland

Reply-To : <dorota.wspanpl@it.com.pl>
From: ''Dorota Cichanska'' <dorota.wspanpl@it.com.pl>
To: <jwielki@polo.po.opole.pl>
Subject : Booking Engine
Date: Mon, 25 May 1998 15:57:54 +0100
X-MSMail-Priority. Normal
X-Mailer. Microsoft Internet Mail 4.70.1161

Panie Januszu,

Dowiedziałam się od znajomych w USA, ze poszukuje Pan rozwiązania dla jednego z biur turystycznych w Polsce, umożliwiającego zakładanie rezerwacji lotniczych poprzez Internet.

Reprezentuje system WORLDSPAN, który posiada takie gotowe rozwiązanie dla biur podróży, jeśli jest Pan zainteresowany to proszę o kontakt na mój e-mail, lub adres:
Dorota Cichanska
Worldspan Poland Sp. z o.o.
ul. Królewska 11
00-065 Warszawa
Tel. 022 - 827 77 26

Pozostaje z poważaniem,

Dorota Cichanska

Reply-To : <dorota.wspanpl@it.com.pl>
From : ''Dorota Cichanska'' <dorota.wspanpl@it.com.pl>
To: ''Janusz Wielki'' <jwielki@polo.po.opole.pl>
Subject: Re: Booking Engine
Date: Tue, 26 May 1998 10:06:08 +0100
X-MSMail-Priority –
Normal X-Mailer-. Microsoft Internet Mail 4.70.1161

Panie Januszu,
Jedyny problem jaki tu ewentualnie widzę, to konflikt interesów pomiędzy systemem używanym obecnie przez reprezentowane przez Pana biuro podróży, a systemem WORLDSPAN.

Nasz Ineternet Booking Engine może być używany pod warunkiem, ze biuro posiada nasz system rezerwacyjny, czyli WORLDSPAN. Wymog ten jest związany z faktem, iż po założeniu rezerwacji w inetrnecie, jest ona elektronicznie wysyłana do tegoż biura w celu np. - wystawienia biletu.

Jeśli chce Pan zobaczyć jak nasz IBE działa, to proszę zajrzeć na stronę biura Air Club, www.airclub.com.pl . Jeśli chodzi o rezerwacje wycieczek lub biletów autokarowych, to wprowadzamy obecnie na rynki Europy Zachodniej tzw. WORLDSPAN WAVE, który może Pan obejrzeć pod adresem www.worldspanwave. com.

Jeśli ma Pan pytania związane z tymi produktami, to proszę o kontakt telefoniczny ze mną, pod numerem 827 77 26 w Warszawie, a w mirę możliwości udzielenie wyjaśnień.

Pozostaje z poważaniem,

Dorota Cichanska

Date: Tue, 19 May 1998 20:28:11 -0400
From: Richard Eastman <74224.44@compuserve.com>
Subject: Infotec-Travel Request for Assistance
Sender: Richard Eastman <74224.44@compuserve.com>
To: Janusz Wielki <jwielki@polo.po.opole.pl>
X-MIME-Autoconverted: from quoted-printable to 8bit by polo.po.opole.pl id CAA10420

Hello Janusz...

<<Could anybody provide me with a reasonable solution of mentioned above issues ?>>

Of course, you must define "reasonable".

However, you might wish to visit our web site ... www.eastmangroup.com .

The Eastman Group, Inc. (TEG) offers a Rapid Application Development solution called AutoLink(tm). AutoLink has modules that include booking capabilities in the four major GDSs (including Amadeus). The booking function can handle air, car, hotel, tour (vacation), and other CRS functionality. AutoLink is also TCP/IP "intelligent" ... and can be used as an Internet gateway/interface. Information on the TCP/IP product has not been loaded on the web site yet -- but there is sufficient information there for you to review and consider.

AutoLink applications vary "widely" in price ... depending on the application, its use, and the support required. It is used extensively by Lufthansa throughout the world. It is used extensively by Cosmos Tours to provide GDS "connectivity" ... both to offer agents the tour products on-line and to interactively book the vendor products as the packaged tours are purchased. AutoLink is also being built to serve Abacus' "back end" accounting and audit needs ... and as a GDS gateway to the "front end" booking tool of the U.S. Department of Defense. At the "low end" of the price scale, AutoLink is the core "engine" that drives the APT-Series tools that are depicted under the "Travel Agency" on our web site.

Go take a look. If AutoLink is a viable alternative, please feel free to check back with me. I spend a great deal of time in Frankfurt working with Lufthansa ... and visit Austrian Airlines, Iberia, and Air France at least four times a year. Perhaps on one of my trips, we might meet.

Richard Eastman

The Eastman Group, Inc.
2240 University Drive, Suite 210
Newport Beach, CA 92660-3328
+1-949-574-1505 : Fax 547-3869
74224.44@Compuserve.Com
www.eastmangroup.com

From: "Richard Eastman" <tegi@email.msn.com>
To: <jwielki@polo.po.opole.pl>
Subject: Tardy response to your queries re: AutoLink
Date: Sat, 13 Jun 1998 16:11:52 -0700
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 4.72.2106.4
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Hello Janusz...

My apologies for not responding sooner. I have been in Singapore finalizing a contract with a new client there. You have written...

<<Since description I have found is not very detailed I would like to ask you for sending me more information about this system.>>

Please help with the type of information you seek about the system.

<<I'm interested how such a on-line booking system can be added to travel agency's Web site and what is the price of it (I don't mean exact price).>>

The AutoLink "engine"runs on any Intel based computer ... in DOS, Windows 3.x, or Windows NT. It can next on a web server ... or on workstations linked to the web server via a Local Area Network. The database can be interfaced to client specific web booking pages via (a) HTML, (b) a direct http: protocol interface, (c) through a Visual FoxPro Internet interface, (d) any internet based "front end" tool that uses OBDC or SQL command sets to effect links, or (e) via TCP/IP buffered interface messaging.

"Low end" AutoLink tools are marketed in the U.S. for under $1,000 USD ... although the current market price for the same tools is about 5 times that (i.e., what sells in the U.S. for $1,000 sells in Europe for about $5,000). The higher European price is a function of two factors -- one is demand and the other is the cost of support. However, the "demand" factor is currently the greater factor in the higher costs.

At the "high end", AutoLink tools sell for $500,000 USD. The buyers of these "high end" versions are airlines, very very large tour companies and the CRSs.

At the "low end", the products are virtually "shrink wrapped" ... on the web site, they are the APT-Series products. All APT-Series tools sell for under $1,000 USD. At the "high end", the tools are totally customized to fit the buyers business and operational needs. At the high end, the tool typically will pay for itself in days, once installed and operational. At the low end, the tools are designed to pay for themselves over a four to six month period. We do not like to sell the tool for uses that cannot repay themselves in a very short time -- mostly because technology is evolving so rapidly that a investment of any travel technology solution has a "shelf life" of only 18 months to 2 years.

For me to price a solution for your needs, I will need to know more. However, at any size client range, The Eastman Group (TEG) will be happy to

provide references. TEG has a very scalable "engine". While we call it by different names in different price ranges, the core tool is the same. That enables us to offer very rapid design and development for almost any travel solution -- and virtually any price range. The major "trade off" for us in deciding price is (a) the value that the tool brings to the buyer and (b) the number of times that we perceive we can "resell" the tool (i.e., the APT-Series products can be resold to many travel agencies -- the Lufthansa AutoLink/PASS solution can only be sold to one or two other airlines).

<<Can your system be used for all issues I mentioned (air ticket booking, hotel rooms reservations, coach ticket booking, vacation packages booking) ?>>

AutoLink and its derivative offset tool, AutoBook, provide complete booking connectivity via Internet, Internet and the major CRSs (Amadeus, Galileo, Worldspan, and SABRE) for all of the functions you noted. Further, AutoLink/Tours provides an inventory solution for vacation packaging tools. AutoLink/EDI provides banking industry connectivity for settlement purposes -- including some of the airline or government BSP's.

At the present time, no vendor client offers an "open" Internet booking access tool. All are "restricted" (i.e., a user needs a password or a privately owned "front end" booking solution to access the various sites). However, if you have access to a CRS that, in turn, has access to either Tour Source (Worldspan or Amadeus), Tourguide (SABRE) or Leisure Shopper (Galileo/Apollo) -- you can log onto Globus Tour or Cosmos Tours to see the AutoLink interface working with a CRS. The CRS "masks" are controlled by the CRSs -- but it is the AutoLink "engine" that provides the hosting function. You can also access Brendan Tours on Leisure Shopper.

In addition to seeing the tour package booking process at those sites, in the case of Globus and Cosmos, the air bookings for the tour packages is interactively handled using the AutoLink "engine". The tool also provides airline, hotel, cruise, tour, car rental, and limousine direct access booking if needed. Further, there is a back office (accounting) interface, as well as management information analysis tools and a complete set of process audit functions.

As noted above, the price and what gets included is entirely a function of the desire and needs of the buyer. What one company thinks is important, has no relevance to another. The needs of a Lufthansa are far different than the needs of a small travel agency. A International large tour operator like Globus has entirely different needs than does a local niche kayak tour provider. AutoLink is designed to fit either or both needs, as appropriate.

Having said that, right now is a very tight time for TEG to be "reaching out" to smaller companies. If our tools can not be easily and immediately "tailored" to fit the needs of the smaller packager or tour operator, we are quoting deliveries six months out. On the other hand, if we have already built what a user needs -- or can connect two or three modules that already exist to meet a specific requirement, deliveries can be achieved within a week or two. So the more you tell me/us about what you need and how you

want to use the tool -- the more likely we are able to respond fairly and accurately.

As a personal aside, I'd love to have an excuse to visit Poland. I've paddled there and have a few good friends that now coach the National Canoe and/or Kayak teams for Poland. So almost any "excuse" is good enough for me.

Richard

From: Johnny Thorsen <jthorsen@itn.net>
Reply-To: "jthorsen@itn.net" <jthorsen@itn.net>
To: "'Janusz Wielki'" <jwielki@polo.po.opole.pl>
Cc: "Johnny Thorsen (E-mail)" <jthorsen@itn.net>
Subject: RE: My previous e-mail to you
Date: Mon, 29 Jun 1998 15:47:54 +0100
Organization: ITN
X-Mailer: Microsoft Internet E-mail/MAPI - 8.0.0.4211

Dear Janusz

Once again I can only apologise for the delay in my reply to you, but the amount of interest that the European market have shown in ITN, have simply put me into an impossible situation, where I have been travelling non-stop since I joined the company.

I am now finally having a few days back home where I can acutally work, and you are one of the first to benefit from that.

I have attached a draft proposal document for the ITN Private Label product which I believe will be the right product for your Polish agency group, unless they want a much more advanced solution (which is normally phase 2).

The Private Label solution provides the travel agency with a website similar to the ITN public site (www.itn.net), and can be delivered 6 weeks after contract signing. The site can run on any one of the global reservation systems, and will have the name, logo and colours of the travel agency operating it.

The Private Label solution comes with a complete service bureau concept, which means that all technical work and support is done by ITN staff in California. There is 24-hour support and help-desk function as well, and all the agency has to do is to start promoting the site to both existing and new customers.

However, nothing comes for free, and there is also a price to pay for the Private Label product. The implementation cost is $10.000 which covers everything before startup, followed by a monthly access fee of $1.000, plus $4 per PNR created through the site. If you want to be able to change reservation through the website, there will be an additional charge of $1 per change, with a maximum of $6 per PNR.

I hope this helps you in your project, and look forward to your comments in the near future.

Regards

Johnny Thorsen
Director of European Business Development
Internet Travel Network
Email : jthorsen@itn.net
Phone : +44 1252 616 600
Fax : +44 1252 613 622

From: Johnny Thorsen <jthorsen@itn.net>
Reply-To: "jthorsen@itn.net" <jthorsen@itn.net>
To: "'Janusz Wielki'" <jwielki@polo.po.opole.pl>
Cc: "Johnny Thorsen (E-mail)" <jthorsen@itn.net>
Subject: RE: My previous e-mail
Date: Thu, 27 Aug 1998 15:36:38 +0100
Organization: ITN
X-Mailer: Microsoft Internet E-mail/MAPI - 8.0.0.4211

Dear Janusz

At present the Private Label product only supports what you can book in the CRS being used (i.e. air, car and hotel on Amadeus). We have however some customers who have created their own web-pages with functionality for booking / requesting holiday packages, and we then have the option of adding a link from the Private Label site to those pages.

The second question regarding the customer making his own package by selecting the element is already possible know, but again it can only be done with services available via the CRS. As an example you could imagine a web-site which only sells one airline with a special deal on certain or all routes, while the hotel database has been loaded with some preferred hotels in the relevant cities, again with the speciel deals for those hotels.

The elements which can not be booked through the CRS (rail or other transport, etc) can be requested through the special request section on the last page of the booking procedures, which is what most of our sites are using today.

Regards

Johnny Thorsen
Director of European Business Development
Internet Travel Network
Email : jthorsen@itn.net
Phone : +44 1252 616 600
Fax : +44 1252 613 622
Mobile : +44 403 173 807

From: Johnny Thorsen <jthorsen@itn.net>
Reply-To: "jthorsen@itn.net" <jthorsen@itn.net>
To: "'Janusz Wielki'" <jwielki@polo.po.opole.pl>
Subject: RE: Private Label
Date: Mon, 31 Aug 1998 23:17:36 +0100
Organization: ITN
X-Mailer: Microsoft Internet E-mail/MAPI - 8.0.0.4211

Janusz, the speciel request is simple a free text box available for the user to type additional requierements into. It is being used a lot amongst our existing web-site customers, and one of the benefits is of course that you can type in your local language, and specify "anything" you need in addition to air, car and hotel.

Regards

Johnny Thorsen
Director of European Business Development
Internet Travel Network
Email : jthorsen@itn.net
Phone : +44 1252 616 600
Fax : +44 1252 613 622
Mobile : +44 403 173 807