THE PREMISES AND THE EVOLUTION OF ELECTRONIC COMMERCE

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Abstract: Inevitably, the boom in technology and informational technology have had an impact on the business world since the late ‘80s, when the Internet began to penetrate the lives of millions of users around the globe. Currently, concepts such as e-business or e-commerce have found their place and applicability inside the global economy with ease, knowing it promoted models exhibiting an accelerated rate of development, well above the usual average growing rate of the traditional economy. Although the industry (especially the American one) saw a critical moment in the early 2000s, the obstacles have been overcome, confirming a continuous rise of electronic commerce in the last twenty years. The purpose of this article is to highlight some of the characteristics of electronic commerce, the global implementation stage, reviewing in the process the main steps taken in this area up to the present and last but not least to identify possible development trends for the future.

Keywords: e-business, e-commerce, Internet, dot.com

Introduction

Internet and e-commerce had followed, inevitably, a similar road since these concepts can not be mutually excluded one from the other one. Innovations in the field of Internet technologies have had instant repercussions in the online business world. From a simple usage having a regional origin located in the United States of America, the phenomenon of electronic commerce has seen a rapid spread globally, according to the innovations related to Internet technologies. The projection of electronic commerce is in perfect accordance with the development stage of the real economy. Due to the low level of development, some states have managed to create and maintain a solid base, especially the one related to IT infrastructure. Thus, due to lack of this essential element, electronic commerce has suffered. The real losers, however, are the consumers, who are deprived of a more convenient way to purchase goods and services, since nowadays almost any product from any corner of the world it may be purchased without further difficulties.

E-business and e-commerce

The Internet technologies (World Wide Web, intranet, extranet, etc.) and the knowledge on how to implement them in the business area is the starting point for the concept underlying the symbiosis between technology and business, bearing the name of e-business. To be more specifically, what is the definition of e-business? According to IBM, which has defined this concept in 1997, "e-business can be the key in transforming business processes using Internet technologies." Analyzed from a general perspective, e-business may gather under its umbrella three major components:

- The human dimension that includes processes and activities related to research, development, marketing, manufacturing, logistics, management, etc.
- The technological-only component, akin to information-related technologies.
• Commercial or e-commerce component, taken as a whole and perceived primarily as a phenomenon – having a different meaning that the term known e-commerce, basically the purchase of goods and services through Internet technologies.

At first, closely linked (the confusion was unavoidable most of the time) to the concept of e-business was the notion of e-commerce which later on had differentiated itself, now being seen as an integral part of the first. Most definitions emphasize e-commerce as being the type of transaction in which the parties interact primarily through electronic media.

E-commerce features. Models and concepts of e-commerce.

The adapting of worldwide companies to the technological realities forced them to take into account an attempt to enter the online market, virtually re-drawing and transforming the entire economic process that hadn’t experienced any major mutations prior to the trigger of this phenomenon. Technology means also access to information, to avoid the adaption to new technologies available can have major consequences in the long run, most oftenly highly unpleasant for the competitors inside the economic race. If by the time of the e-commerce acknowledgement some companies have neglected the aspect and importance of technology, now these companies have adapted to the new requirements of management and production. There have appeared new approaches to advertising or marketing strategies. At the same time, a fierce fight sparked out and the companies became more interested to attract clients, since the number of their potential customers has increased significantly.

The legislative vacuum in this field has been corrected in the process, which has had at least a few repercussions since a potential buyer can have more confidence in the online trading act. Yet, the reticence regarding the methods of securing the commercial act is still present, despite countless insurances expressed by the solution providers in this sector. Electronic commerce has succeeded, in terms of accessibility to the consumer, to print a more personal note on the interaction between the ones who offer products and services and those from the category willing to pay for them. It should be noted that the electronic commerce was present before the Internet breakthrough, starting from the usage of credit cards, ATM machines or telephone banking, especially in the '80s. Nowadays, the M-commerce component (PDAs, smartphones etc.) is advancing step by step, alongside with the classic instruments of the Internet commerce.

Paul Timmers identified since the 90s a number of organizational models such as e-commerce virtual store (e-shops, e-malls), e-procuring (or the electronic supply, e-commerce activity encountered at all levels), e-auctioning (online auctions sites like eBay, for example), virtual communities of users and consumers with common interests (e.g. Geocities), collaboration platforms (the creation of instruments, especially software to implement and maintain electronic communication channels between companies), e-brokerage, third party marketplaces, supply services (value chain service providers: e-payments or e-logistics) etc.

The main concepts related to e-commerce which form the basis of business organization are mainly the business-to-business and business-to-consumer categories. This terminology describes in a schematic manner who are the main actors involved in the economic process and what is the purpose of these processes, namely who are the ultimate beneficiaries.
Business-to-business (B2B) is currently perceived as the most important segment of e-commerce, representing transactions (supply) goods and services between companies (manufacturers, suppliers, distributors, retailers, etc.) in order to obtain the final economic assets. The main components of this concept are e-infrastructure (which ensures the minimum requirements related to logistics and operating software) and e-markets, or websites that function as virtual meeting places where buyers interact with the bidders. The purpose of B2B finds utility in the transactions geared towards the consumer.

Business-to-consumer (B2C) is the second element of e-commerce, being centered around the mechanisms able to satisfy the consumers' interests (sale/purchase of goods and services, information, etc.) through trade between producers and buyers. The main markets are the e-retail (or e-tail) and e-banking (online financial instruments designed for personal finance management) platforms.

Business-to-government and government-to-business (B2G/G2B) represents the ways in which commercial transactions take place between companies and public sector. In the first case, companies carry out activities for the benefit of the public sector (procurement contracts, auctions, etc.) while through G2B the public institutions are mainly informing the private sector about the legal framework or cooperation opportunities with them.

Consumer-to-consumer (C2C) is the type of trade between buyers and individuals. One of the best examples is eBay with his e-auctioning system.

Advantages and disadvantages of e-commerce activities

The advantages of using these technologies can be classified according to various criteria, which include:

1. advantages for the producing company:
   - With only a minimum capital, they can contact the suppliers or even business partners worldwide.
   - The reorganization and streamlining of internal structures within the company
   - Providing logistical flexibility
   - Maintaining and strengthening relationships with customers and suppliers
   - Reduced costs associated with various business processes
   - Improved communication speed
   - The adoption of online sales as an alternative way of trade

2. buyers’ advantages:
   - Quick shopping without taking into account the time element; fast delivery and high convenience for the customer
   - Participation in activities such as online auctions
   - The possibility to perform a more effective comparison between different products

3. producers’ advantages:
   - The opportunity to attract new customers
   - Easy access to markets that were inaccessible otherwise
• Reduced costs beyond what concerns the provision of goods and services

4. **Overall advantages:**
   • The ousting of intermediaries from the economic activities
   • Reducing the time devoted to various activities, from the double perspective of the supplier and the buyer
   • Some of the Geographical barriers are dissolved

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<tr>
<th>INTERNET CHARACTERISTICS</th>
<th>IMPACT ON E-COMMERCE</th>
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<tr>
<td>INTERACTIVITY</td>
<td>MASS ADAPTATION TO THE CLIENTS</td>
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<td>CREATIVE USERS</td>
<td>PULL-TYPE STRATEGIES</td>
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<td>PERMANENT ACCESABILITY</td>
<td>LARGER PULL-TYPE DEMANDS</td>
</tr>
<tr>
<td>GLOBAL ACCESS</td>
<td>DIRECT ACCES TO THE WORLD MARKET</td>
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Figure 1: The Internet and its usefulness in e commerce

**The disadvantages** are inevitable in any business and in regard to this area, they are mainly related to security issues connected to transactional processes and the lack of necessary infrastructure. Other disadvantages:

• Lack of a proper legal framework
• The cost of an investment is not justified given that in some geographical zones or areas of activity there are not enough customers
• The Internet access is too expensive

**The Internet and its influence on global commerce activities**

<table>
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<th>Table: The overall level of Internet use in 2010</th>
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<tr>
<td>Africa</td>
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<td>Europe</td>
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<tr>
<td>Middle East</td>
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<tr>
<td>North America</td>
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<tr>
<td>Latin America/ Carribean zone</td>
</tr>
<tr>
<td>Oceania and Australia</td>
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<td>TOTAL</td>
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As shown in Table nr. 1, the Internet has experienced an accelerated spreading worldwide in the last ten years. Except the major areas around the globe that own a proper infrastructure and consequently a booming e-commerce activity, significant portions yet remain behind the general rate of advancement, especially in many developing countries, who have to fight against many obstacles, mainly related to poor development of means of telecommunications and IT not to mention the citizens’ low income which is well below the average incomes of developed countries. States like the majority from Africa, the Middle East or even South America haven’t developed a technological culture able to support at least the efforts of the small and medium companies to manage to enter into the online space. Activity and the evolution of e-commerce industry is different from case to case for each continent as follows:

- **Africa.** Having just a small percentage of users and generally benefitting from a low level of development, African countries have some reduced connections with the B2B models (implemented mainly in South Africa) and B2C. One of the potential directions towards B2C assertion can represent the sale of artisanic handicraft products.

- **South America.** The main states connected to online trade are Brazil, Argentina, Chile and Mexico. B2C is continuously expanding, especially in the automobile e-retail industry.

- **Asia.** This area has the highest number of Internet users worldwide and the largest potential for development and implementation of e-commerce. China has already surpassed the number of visitors compared with the United States, as well as showcasing a high e-commerce expansion rate. Only for the Chinese m-commerce market there have been analysts announcing total revenues of approximately one billion dollars in 2010.

- **Middle East.** In this area the main interests towards the Internet technologies are limited to accessing the Internet and the e-mail, since access costs are still quite high, constituting a major obstacle. The rate of development of B2B and B2C are low - the fact that they prefer payment in cash at the expense of credit cards can be perceived as a barrier in the way of introducing the concepts of B2C.

- **Europe.** E-commerce transactions vary from state to state, even within the European Union. If it was to summarise the situation, it can be said that the main countries interested in e-commerce are Great Britain, the Scandinavian states and Germany, where a high percentage of Internet users (up to 80%) are also frequently using the online platforms for commerce. The second echelon is represented by France, Italy and Spain, while Eastern Europe still has plenty to recover, in terms of such issues.

- **North America.** As the country of origin and the global leader in e-commerce, the United States will receive in a special attention this article. As for Canada, it is quite remarkable that a country with a population so small in relation to its size is a world leader in terms of IT infrastructure and Internet technologies. Moreover, the overall percentage of users in this country at the end of 2008 amounted to an impressive 84%. Canadian Internet users have the habit to purchase goods and services in much greater numbers than their American counterparts.

**The beginnings and expansion of electronic commerce**

Electronic commerce has its origins in the implementation of EDI (Electronic Data Interchange) or the exchange of data from one computer to another through networks.
During the ’70s and the ’80s, the subject of transactions were the information exchange or banking transfers. Since 1983, the Internet has become the main medium of transmission of data (at first only in the United States, the country of origin), having a non-commercial character. The implementation of some components later proven to be vital for the later development of the Internet (such as graphical user interface or GUI, HTML and World Wide Web) has basically proven to usher a new era. In 1991, the National Science Foundation (having to perform the management role for NSFNET, the precursor of TCP/IP) removed the prohibition on commercial-type activities on the Internet. The decision triggered within a few years a major revolution in e-commerce. Analysts mention the period between 1995 and 1999 as a true golden era for the Internet, at this time now being developed and emerging the main browsers and other utilities, as well as the first top brands over the years, veritable symbols of the e-commerce phenomenon - Amazon (established in 1994), Ebay and Yahoo (in 1995), GeoCities (an early model for virtual community, established in 1994). With the momentum of these types of transactions, increasingly more companies began to enter the online market, the growth rate and the results being outstanding. For example, in the United States, in 1996 there were recorded total revenues of 707 million dollars, 2.6 billion the next year, following the record of 5.8 billion dollars in 1998. Again, Amazon distinguished itself by increasing the turnover from 16 million in 1996 to 1.6 billion dollars in 1999.

The Dot.com bubble. Causes and consequences.

The peak of the expansion of such companies and other dot.com firms was registered on 10 March 2000, when the NASDAQ Composite Index reached 5133, after a week losing about 9% from the previous value. Until April 14, the same index has dropped 34.2% while the Dow Jones Internet Composite 53.6%. After a year, the percentage of NASDAQ fell somewhere below the 2000 points. All companies listed on these exchanges either had very large losses related to the cost shares, regardless of scale and business-size – for example, eBay's stock price fell by 27.9% of those from Amazon by 29.9% or 72% for Internet Capital. If these companies have survived the so-called dot.com bubble, many others have bankrupted or at best have been acquired by others.

What were the causes that led to the collapse of this system? Regardless of the enumeration of cases, two of the common denominators were failure to stick to the game rules are and moreover, the failure to emulate the real economy and its basics. Most companies who have failed considered this newly-founded business platform to function according to its own laws, ignoring aspects related to management and marketing.

- Towards the end of the 1995-1999 period, during the dot.com frenzy that swept the United States in particular, many companies were established with the sole purpose of entering the market and growing in a short time (months even) by infusion massive capital, setting their price according to their own strategies, without taking into the account the economical realities. It's the case for resounding examples such as Webvan.com, Pets.com and Kozmo.com. As a particular case, Webvan, which functioned as a mobile supply chain of food, during the year 1999 issued shares worth 375 million dollars. The major mistake was that the company wrongly tried to invest in infrastructure and logistics huge amounts of money that exceeded by far the value and business capacity.
- These companies also have taken some huge risks in an era when everyone directly or indirectly involved in this phenomenon (from the Wall Street economic analysts
to state officials) predicted a sure success. This vicious chain-reaction led to the overrating of stock prices and thus to imminent collapse.

- **The selling prices of products and services had not been taken into the account, after serious considerations.** For example, Kozmo.com, specialized in delivering small consumer goods in most major American cities, has not given any importance to the fact that a very quick delivery (one hour) requires much higher transport costs, costs can not be sustained since that delivery is free (considered to be the main attraction of the brand).

- **The budgets for advertising were badly used.** Pets.com has invested huge amounts of money in proportion with its income - only in 1999 it used 11 million dollars for advertising purposes, though it reported an income of only 620,000 dollars.

- **Many companies established overnight did not order any market research.** Again, Pets.com failed to foresee that a business in an area such as the sale of consumer goods for pets can not make huge profits in a very short time.

The consequences were that, along with the bankruptcy or takeover of many companies, it resulted in lowering the amount of unjustified investments in this sector, the drop of revenue generated at firm level (not at the industry level, however) or lowering the market’s value. Apart from this, a proper legislation was drafted to regulate online commerce more efficiently. A lot of companies have disappeared but those who survived, especially Amazon, Google and eBay, have managed to establish itself permanently. The reason? Years of experience, an already existing and well-defined brand or the variety of goods and services. And yet, if we look at the figures for U.S., the sales through e-commerce have followed an upward trend, despite the crash which represented a peak moment in the industry.

**The Dot.com Bubble post-era.**

Getting past the dot.com disaster and trying to regain the pattern of a coherent management, the companies involved in the electronic commerce felt that a more well-planned strategy it needed, which takes into account the improvement of e-commerce platform and last but not least a marketing emphasis on practicality, visual impact and quality of content.

As was expected, the dot.com crash sites did not really affect the American industry, the overall percentage of online transactions being very small compared with total retail value. Table nr. 2 shows the evolution of e-commerce business in the United States at the time of the crash, the conclusion being as positive as possible. The rise can be attributed to the evolution of Internet technologies, independent of factors such as economic fluctuations.

**Table 2: The growth rate of online commerce in United States between the years 2000-2009**

<table>
<thead>
<tr>
<th>Year</th>
<th>Billions $</th>
<th>Growth %</th>
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<tbody>
<tr>
<td>2000</td>
<td>27.563</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>34.411</td>
<td>24.84%</td>
</tr>
<tr>
<td>2002</td>
<td>42.92</td>
<td>30.54%</td>
</tr>
<tr>
<td>2003</td>
<td>57.633</td>
<td>28.30%</td>
</tr>
<tr>
<td>2004</td>
<td>73.294</td>
<td>27.17%</td>
</tr>
<tr>
<td>2005</td>
<td>92.16</td>
<td>25.74%</td>
</tr>
<tr>
<td>2006</td>
<td>113.936</td>
<td>23.63%</td>
</tr>
</tbody>
</table>
Already after about two years of recession, e-commerce market in 2009 showed signs that it had not been affected by recent economic events, keeping the same upward trend, far superior to traditional industry. The Internet is, at this point, one area of retail activity where there has been recorded a stable growth. To illustrate this, there can be advanced the statistics and figures recorded by major online companies in the U.S. market\textsuperscript{23}. For 2009, total revenue derived from e-commerce was at about 134.9 billion dollars, up two percent from one year earlier. The amount is insignificant if trying to make a comparison with the total retail, prognosticated turnover being at around 4.13 trillion dollars; on the other hand, the e-commerce activities are making every year major leaps unsustainable by the traditional retail industry (which has recorded a decrease of two percent for the second consecutive year, according to U.S. Department of Commerce). Average growth in the area's commerce until the past few years was somewhere around twenty annual percentage rate, currently being much lower (table nr. 3).

The figures speak also when considering the individual performances of large companies or those of the whole branch. The 2010 edition of Top 500 Guide, published by the internetretailers.com, states a much confirmed hypothesis namely that increasingly more consumers are willing to acquire goods and services through Internet.

- Combined sales of the first 500 online retailers saw a rise from 116.28 billion to 126.38 billion dollars in 2009.
- The same company saw an increase in sales, reaching a total of 601.8 million, up from 2008 (585.1 million).
- Traffic generated by the top 500 Online Retailers increased from 2.10 to 2.58 Billions of hits.
- Each company present in the charts has increased its market share.
- The fastest rate of growth was managed exclusively by the online retailers (or web-only retailers). Amazon is clearly the leader in this area. Main web-only companies received a total sales growth of approximately twenty percent (42.94 billion dollars). Moreover, Amazon has grown in a spectacular fashion in 2009, holding this clasament a share percentage of 19.4% of all Firms and 57.1% of all web-only companies. If Amazon had revenues of 24.51 billion dollars in 2009, another industry giant, this time part of the traditional retailers, Wal-Mart, increased by only 1%, however at an income figure of 405 billion dollars\textsuperscript{24}.

**Directions for future development**

The main medium-term forecasts in the trade through Internet technologies give attention\textsuperscript{25} to the following areas:

1. **M-commerce** or mobile commerce through the means of various devices such as mobile telephony (with a growth rate during the last decades rather more than spectacular, reaching a global total of over 4 billion subscriptions), PDA's (Personal Digital Assistant) or the smartphones. The main services are supervised by *m-banking, m-ticketing, m-brokerage*, sales of audio video content and last but not least, the acquiring of daily information (news, sports, weather, traffic, etc.). When
analysing the expansion of m-commerce, the main fact is that the number of smartphone owners is increasing at a fast pace. To illustrate its popularity, could be enough to mention that on iPhone launching day through Orange in the UK, there were sold approximately thirty thousand pieces.26

2. Social trade based on the presence and user activity on common sites or social networking sites (Facebook, Twitter, MySpace, Bebo, etc.). Potential customers make decisions based on reviews or recommendations from other customers. Facebook has already introduced e-payment and m-payment services already joined by about 20% of all users (2009).27

3. Placing advertisements in video content (e.g., Youtube) and the increased number of users willing to pay for access to video and audio content. In Europe, there is an increasing number of registered users who want access to paid content. The U.S. company Netflix, leading in video streaming across Internet, recorded that the number of subscribers increased from approximately 9.5 million (2008) to 12.5 million for 2009; it also forecasted for 2010 a number of exclusive users at around 14 millions. There is no doubt that there will be a rivalry between the companies that offer free content and those that charge a fee.

4. Personalization of products and services to meet the tastes and preferences of a very small group of consumers inside the B2C concept.

5. Rise of small and medium companies in e-commerce through online search engines, web-sites and social networks.

Conclusions.

E-commerce remains only a small part inside the economic mechanism, representing only a few percent at the macroeconomic level. Considering the current globalization process, this activity will gain more scale in the coming years if it is meaningful to take into account especially the emerging world markets at this moment, some of them still in the early stages of expansion. If evolution can be appreciated globally and according to key indicators, the question remains what will happen to the evolution of individual firms and companies. Some analysts ask themselves if there can rise problem in the future more or less followed by a second Dot.com Bubble, considering the fact that investment in companies such as these exceeds, as percentages, even the events leading up to the famous crash which happened in 2000. The takeovers of companies are now requiring hundreds and even billions of dollars (Google bought DoubleClick for 3.1 billion dollars or Skype, which was acquired by eBay 2.6 billion). The other related issue is about the high market value, either justified or not. Thus, Microsoft paid 240 million dollars for a share of only 1.6% of the total shares of Facebook or that the same company, Microsoft, wanted to buy Yahoo in 2008 for the sum of approximately $45 billion, an amount considered to be too high in comparison with the value of the traded object.

Endnotes

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