The Internet as a Technology and Catalyst for Growth

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Abstract: The Internet is often assimilated, or restricted to the dot-coms, considered creator of new business, of new rules and new worlds and fail to see how it has done so much more than that. How it has influenced dramatically the way we do business and the way we live our lives, keeping within the frames of our old business strategies or life paths. It has changed our rhythm. The Internet is to the business world what access to water or medical care is to population. It is the impact of the Internet that makes us take a close look at its development and raise the question whether the Internet represents a new business model, a new business era, significantly different from b.i.e. (before the Internet era), a completely new alphabet or it is a technology that makes new stories possible, written as they may be in the same old business alphabet. The worldwide penetration of the Internet gives it the global impact we are going to address the importance of the Internet and the dimensions of the phenomenon, its impact on growth. We will afterwards talk about its history and the peek of the dot-com era. The mature stage of the Internet and its numerous uses draws us to our conclusion that although the Internet did create new viable business models, it does more than that. It is a technology that influences present time the same as electricity shaped the world starting with the XIX century. I will draw a parallel between the Industrial Revolution's electricity and the Third Revolution's Internet.

Key-Words: Internet, dot-com, technology, Third Revolution

1. Introduction

United Nations’ no 8 Millennium Development Goal is to “Develop a Global Partnership for Development”. One of its targets is to “… make available the benefits of new technologies, especially information and communications.” The UNCTAD Millennium Development Goals Report 2012 [1] looks at fixed-telephone and mobile-cellular subscriptions numbers, number of Internet users and broadband subscriptions. The Internet has become so important for mankind that its evolution and accessibility is followed alongside indicators as such: people living on less than 1,25 USD per day, proportion of under-five children who are underweight, number of refugees, enrolment in education, HIV incidence rates, forest areas, etc.

One will consider, after reading UN publications, that the Internet is to the business world what access to water or medical care is to population. According to [2] ICTs can reduce business costs, help enterprises to manage their resources more efficiently, access the information needed for better business decision-making, reduce transaction costs, and enhance their ability to bring products and services to customers, promote transparent, rules-based systems, and improve communication between the public and private sector. Moreover, governments and their development partners need to ensure that the ICT infrastructure meets the needs of different kinds of enterprises.

It is the impact of the Internet on the life of the business world that makes us take a close look at its development. In the beginning of the article, we are going to address the importance of the Internet and the dimensions of the phenomenon. We will afterwards talk about its history and the peek of the dot-com era.

Then we are going to raise the question whether the Internet represents a new business model, a new business era, significantly different from b.i.e. (before the Internet era), a completely new alphabet or it is a (at first restrictive and in time more and more largely available) technology that makes new stories possible, written as they may be in the same old business alphabet. We raise this question because so many people assimilate (or restrict we would say) the Internet with the dot-coms, consider it
creator of new business, of new rules and new worlds and fail to see how it has done so much more than that. How it has influenced dramatically the way we do business and the way we live our lives, keeping within the frames of our old business strategies or life paths. It has changed our rhythm.

2. Dimensions of the Phenomenon

The worldwide penetration of the Internet gives it the global impact we have underlined in the introduction. One could say that a 15% penetration rate for the African population is low, but according to table 1 it has grown by 3,606.7% from the year 2000. Middle Eastern Internet users numbers have also grown from mere 3 million to over 90 million in the past 12 years. Moreover, according to figure 1 the proportion of Internet users from developing regions has grown from 56% in 2006 to 63% in 2011. It is this very evolution that gives this issue worldwide significance.

<table>
<thead>
<tr>
<th>World Regions</th>
<th>Internet Users 31 Dec 2000</th>
<th>Internet Users 30 June 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>4,514,400</td>
<td>167,335,676</td>
</tr>
<tr>
<td>Asia</td>
<td>114,304,000</td>
<td>1,076,681,059</td>
</tr>
<tr>
<td>Europe</td>
<td>105,096,093</td>
<td>518,512,109</td>
</tr>
<tr>
<td>Middle East</td>
<td>3,284,800</td>
<td>90,000,455</td>
</tr>
<tr>
<td>North America</td>
<td>108,096,800</td>
<td>273,785,413</td>
</tr>
<tr>
<td>Latin America / Caribbean</td>
<td>18,068,919</td>
<td>254,915,745</td>
</tr>
<tr>
<td>Oceania/Australia</td>
<td>7,620,480</td>
<td>24,287,919</td>
</tr>
<tr>
<td>TOTAL</td>
<td>360,985,492</td>
<td>2,405,518,37</td>
</tr>
</tbody>
</table>


There is one more dimension of the phenomenon that holds importance for our present analysis: the increase in usage of the Internet within a company. The pioneers might have thought they had reached peak performance by setting up the company web site and an email address. Little had they known of the future usage of the Internet for most company functions, of its altering these functions, of its creation of new ones as well as new business models. Today statistics deal with more that penetration rates. They also deal with types of Internet use by enterprises, including: sending and receiving e-mail, information searches or research, information about goods or services, internet banking or financial services, information from public authorities, providing customer services, transacting with public authorities, delivering products online, market monitoring, receiving digital goods or services according to [3].
Its many uses made the Internet a catalyst of growth. According to a paper published by McKinsey Global Institute [7] there is a direct effect between web index and company growth in over 4.800 small and medium enterprises in 12 different countries. They define a “McKinsey web index according to the number of technologies possessed by companies and the penetration of those technologies”. The conclusion of the research is that intensive use of the Internet helps SMEs grow more rapidly.

3. The birth, childhood and adolescence of the Internet

The Internet has come a long way in the past 50 years. Starting with the famous ARPANET as an academic experiment and financed by the military, it took over 20 years to be standardized and another 10 years to become available to the public. Everything started with an “L” and an “O” [4]:

"We set up a telephone connection between us and the guys at SRI...," Kleinrock ... said in an interview: 
- Do you see the L?
- Yes, we see the L,
- came the response. We typed the O, and we asked:
- Do you see the O.
- Yes, we see the O.
- Then we typed the G, and ... the system crashed...
- Yet a revolution had begun".

It was in 1991 that the first web site was put online with information about hypertext at the address: http://info.cern.ch/hypertext/WWW/TheProject.html

From then on, the evolution was exponential. There are several levels of business penetration the Internet went through:
- Business tool: e-mail and communication
- Company function: communicating with existing and/or prospecting clients through a company web site
- "Sales-person": www, directory listings, online presentations
- Creator of new business: digital products
- Creator of new opportunities: access to non-traditional markets and suppliers
- Cost-saver: lower communication costs
- Creator of new business models: dot-com bubble
- Efficiency drive: virtual workplace, virtual meetings, cloud computing

![World Wide Web](http://www.w3.org/History/19921103-hypertext/hypertext/WWW/TheProject.html)

Figure 2. Copy of the first web site available at http://www.w3.org/History/19921103-hypertext/hypertext/WWW/TheProject.html

It was the dot-com revolution that started the school of thought according to which the Internet matured into a new business model. The business world would have argued in the 1990s that communication functions or digital products were mere side-effects of the Internet and that the Internet represents an entirely new and revolutionary business model.

There was a large number of companies that raised significant financing by adding an “e-” and an “.com”. Prefix investment, as it was called, was driven by a strong belief that dot-coms were infallible and that ignoring all economic indicators of the investment was acceptable as these indicators were no longer relevant. It was the same when indicators regarding the number of hours it took a postal horse to run from city A to city B with a letter were rendered irrelevant by the invention of the telegraph. It was acceptable for these
companies to lose money in the first years as investments were to break even later. The rule of the thumb was GBF (get big fast). This strategy, which often implied selling without profit or even at a loss, was used to gain market share in times when there was an abundance of capital. The collapse of the dot-com bubble in the year 2001 announced the burial of most dot-coms and the survival of the ones with viable business plans. Interestingly enough these performed according to the same old, obsolete economic indicators. The collapse did not represent the end of the Internet or of the dot-com business model for a matter of fact. It was the end of a period of extremely speculative investing. It was the end of a period of drive testing most ideas of e-business. It was like an adolescent experimenting. The survivors were good businesses with innovative structures and innovative products, with strategies written in the same old business alphabet, who spoke the same language as their ancestors form the b.i.e. (before the internet era) did.

4. The grown up Internet = technology

Dot-coms and the Internet are iconic for Alvin Toffler’s third revolution [6]. “…the agricultural revolution [...] took thousands of years to play itself out. [The industrial revolution] took a mere three hundred years. Today history is even more accelerative, and it is likely that the Third Wave will sweep across history and complete itself in a few decades” Toffler said. This post-industrial era according to Bell is brought on by new possibilities in, not exclusively) methods of production that change the way we think. The assembly line is no longer what is used to be. According to a famous quote published in Forbes and attributed to Computer World Magazine [8] “If the auto industry had done what the computer industry has done in the last 30 years, a Rolls-Royce would cost $2.50 and get 2,000,000 miles to the gallon.” It is this very concept of technology-driven revolution I will use to prove my hypothesis that the Internet represents more than a business model. It represents a technology used by people and businesses for a variety of purposes. It has dramatically altered the life of businesses and people alike in remarkable a manner and depth. According to Google Internet Stats 61% of small business owners use social media to identify and attract new customers, 29% of people think the placement of a brand on the search engine results page reflects the importance of the brand company, 34% of people think an information about a particular company, service or slogan in an offline channel has driven them to search for information online. "The advanced economy could not run for thirty seconds without computers." Alvin Toffler said. I would argue that the advanced economy could not run for thirty seconds without computers with an Internet connection.

In an evolution and change driven world, the desire for modern means of communication and information sharing makes Internet users addicted. Since the beginning of the XX century, the Internet had one of the biggest impacts over mankind, both at personal levels and for business environments. One might compare this phenomenon with the impact electricity had in the XIX century. Electricity did more than influencing the industry. Although the foundation of the Industrial, or Second Revolution had been laid by steam power it was electricity that built the skyscraper – and it is now the Internet that puts the antennas on top. And even more, it is the Internet that puts the clouds on the sky as companies reach for cloud computing according to [5].

I suggest we compare the steam power and electricity driven Industrial Revolution (or Second Revolution according to Alvin Toffler) and the Internet and Communication Technology driven Third Revolution.

Birthplace:
• 2nd Rev: England due to its natural resources, colonial power, large demand for goods;
• 3rd Rev: United Stated due to their resources (research in the IT&C, computing power), great close-to-colonial power and worldwide influence, large demand for goods;

Transportation:
• 2nd Rev: Steamboats, steamships, steam locomotives made long-distance transport possible and accessible for both people and freight;
• 3rd Rev: IT&C made long-distance instant transfer of data and information possible and accessible;

Communication:
• 2nd Rev: the telegraph laid the ground for long-distance communication;
• 3rd Rev: the Internet made long-distance communication natural;

Impact:
• 2nd Rev: It was the textile industry who saw, at first, the biggest impact of the Industrial Revolution;
• 3rd Rev: It was the e-commerce that was created and saw the biggest impact of the Internet;

Influence of human life:
• 2nd Rev: changes in work patterns (muscle power), transportation, earnings, quality of life, levels of education, equality of sexes;
• 3rd Rev: changes in work patterns (brain power), smaller need for transportation, earnings, quality of life, levels of education, equality of sexes;

Our analysis is not intended to be exhaustive but merely to underline the idea that the Internet is a mature technology and is not to be limited to a dot com business model.

5. Conclusions

It is our conclusion that although the Internet did create new viable business models, it does more than that. It influences and nourishes most everyday activities, many of which have become completely reliant on it. We use it to communicate internally and externally, we evaluate or businesses, brands or projects based on search engine results, we use it to cut costs, we use it to manage investments and find new opportunities, we use it to find suppliers and clients, we use it to manage working in multiple locations, or virtual teams, or people who work from their home, we use it to share information and software with individuals who are either countries or a few meters away. We use it to monitor security, or heating systems, to order lunch, to connect with others or to hire new employees. We build our lives and business plans taking it for granted, like we do with electricity, or running water, or heating.

References
