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NEW ECONOMY AND GROWTH

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Abstract

While the New Economy came into existence a long time ago, it began to play a major role from the mid 1990s in not only the US economy but also the world economy. The purpose of this work is to explain how the New Economy is today and how it grows, by providing both empirical evidence and theoretical analysis.

First, some empirical evidence on the New Economy will be presented. Further questions will be addressed by studying papers from some scholars in this science in order to arrive at a definition of the New Economy. For the classical growth analysis theory, we used the Solow Model growth theory. We used the two major production factors: Labor and Technology as the main reasons for the development of the New Economy. We also study in more detail, the theory of four perspectives (Organization, Market, Products and the Innovation) in the firms of the New Economy. The growth analysis of the New Economy will be introduced in the second part of this work as a strong supplement to the Solow Model. Finally, the new theory of four perspectives is the highlight in this work in studying the development analysis of the New Economy.

1. Introduction to the New Economy

In terms of what is new in recent economic developments, we conclude that: it is because of these new technologies, especially in the field of information technology and the creation of the networking business (Cogley, 2003). This is an important component of IT, as are Information and Communication Technologies that are widely used not only in everyday life but also in business life (B2B Business).

Now, the New Economy Companies, which could also be defined as the ICT companies, have created much wealth to the total world economy in spite of the global credit crisis since the fourth quarter of 2008.

1.1 Sectors in the New Economy

In 1999, the office of Policy Development in the American Economics and Statistics Administration published a report entitled: "The Emerging Digital Economy II". In this paper, the data of the three most important sectors of the New Economy in the US were introduced. Between 1990 and 1999, we find that the growth of the New Economy in these three sectors has risen rapidly.

1.1.1 Hardware industry

In 1990, the number of companies in the US supplying computer hardware was 28,677 but by 1999, this number increased to 45,082. This means a growth rate of nearly 60% in the Hardware Industry during this 10-year period.

The growth rate in other areas of the Hardware Industry has also been astronomical. For example, the growth rate for semiconductors and printed circuit boards between the years 1990 and 1999 is almost 200%.

The overall average development rate in the Hardware Industry is 120%. Here, the total number of firms for the entire Industry in 1990 was 80,689 increasing to 176,500 in just 10 years.

1.1.2 Computer Software and the Service Industry

Not only has the growth rate for the Hardware Industry risen dramatically, but also the software industry has also seen a steady growth rate, especially for computer programming services, pre-packaged software (standard software), computer processing and data management. The growth rate for the software industry is almost 160%.

1.1.3 Communication Industry (Networking)

One could say that the telephone network was one of the first developments which would later expand to the introduction of the PC Networking system. Later, this would develop to the optical cable system. Thereafter, the firms in this industry are the third most important sector in New Economy. Using data from the Telegraph Communications sector, there were 9,619 firms in 1990, and just 10 years later, the number of companies rose to 17,374, a growth rate of 80%.

In the communications equipment industry, there were 11,278 firms in 1990 and by 1999, this number increased to 27,854, an increase of almost 150%.

By combining these three sectors from 1990 onwards, the total number of firms in the New Economy, was 152,264 and rose substantially to 350,958 in 1999. The total growth rate in this area is nearly 130%. It is almost impossible to find a comparable growth rate in other industries during the 1990s.

1.2 Growth in Communication Speed

Communication devices from the early telegraph system of 1844 to the high-speed connections available today has also increased dramatically.

On the technical side, we show the following estimation:

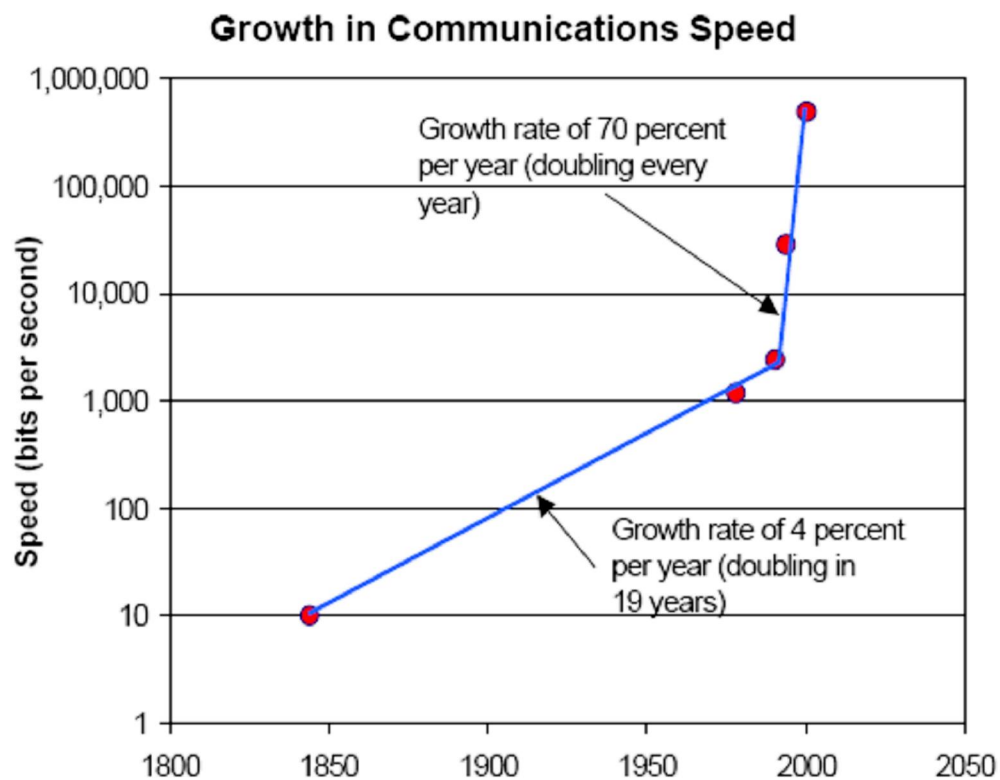


Figure 1: The Speed of Communications Equipment in the New Economy. (Reference: Nordhaus, William D., 2000)

Only from present-day technical know-how, can we say that telegraph communication in 1844 had a speed of 10 Bits per second, and now the speed of a modern computer can be almost 1 million bits per second.

What is apparent from these figures is that during the last 20 years, when the rate of improvement rose from 4% annually to a rate of approximately 70% per year. Thus the speed of the technical growth rate of the New Economy is said to be extremely high.

1.3 Other performance rates in the New Economy

Some other estimations of the New Economy performance rates will be taken into consideration when introducing the New Economy.

These measurement indicators include:

- a) On the Macroeconomic side: how does the total employment rate, i.e. Wage differences compare with other industries, total investment for the New Economy in the total economy, as well as the labor force in the New Economy.

- b) The measurement for this could be the business revenue growth rate, as well as the employment rotation rate, and the marketing and financial development for firms of the New Economy.

These economic data are not easy to obtain, some data are relevant to the single firm and are also more difficult to obtain. General estimations on these firms will be dealt with in Chapter 2.

2. Literature Selection for a Definition of the New Economy

2.1 Four Points Description of the New Economy (Delong and Summers, 2001)

Firstly, we will take the following problems of the New Economy into consideration from the points of Delong and Summers:

1. How important will the ongoing technological revolution in data processing and communications be, in the long run?
2. Could the crash of the NASDAQ tell us about the future of the New Economy?
3. How should governments regulate the economy to maximize the benefits of these technological developments?

4. How could terrorist attacks such as on the World Trade Center on September 11, 2001 shake public confidence as well as affect the overall US economy?

While Delong and Summers were not completely able to answer the four questions outlined above, they dealt specifically with regard to the New Economy.

Both scholars believe that:

For item 1, in the long run, (more than 10 years) the ongoing technological developments in data processing and information communication will be considerable.

For item 2: the stock exchange crash of the NASDAQ in the late 1990s could not provide us with enough information about the dimensions of the economic transformation for a long time. They further think that this economic phenomenon could tell us that the New Economy is more likely to be a source of downward pressure on margins rather than of

large durable quasi-rents, which are the remaining part of the profits from the investment minus the cost of the same investment.

For item 3: they believe that the New Economy is more likely to be "Micro" than "Macro". And for the government, to provide the property rights, institutional frameworks and rules of the game in the New Economy is a good way to underpin the market economy.

As for the last item: the terrorist attack on the WTC on 11 September 2001, they believe that on one side, the terrorist attack could really slow private investment in the New Economy but on the other anti-terrorist, US military spending is likely to increase. This government investment will concentrate on high technology, such as data processing and data communication products. Therefore, they also believe that the changes in economic structure in the area of the New Economy will probably not be greatly affected.

For example, Becker and Murphy (2001) estimated that the September 11th terrorist attacks resulted in a loss of 0.06 percent of the total

productive assets of the US economy. The empirical estimation of Abadie and Gardeazabal (2007) suggest that this terrorist attack resulted in a 5 percent fall in the net foreign direct investment of the country.

While Delong and Summers were unable to define the New Economy they nevertheless used these 4 points to describe it. However, we obtain some insight into these questions, especially on the technical side, such as data processing and IT. Second, on the economic side, the New Economy can not bring us the durable quasi-rents. It is just one of the many factors of the changing stock market. Third the New Economy is in the hands of local government (for technology rights), while it is the responsibility of the individual to use the new technologies correctly. Fourth, financial spending in this sector will surely increase in the coming decades.

2.2 Old Economy and New Economy (Robinson, 2000)

Robinson defines the new and old economy in her article "What is the New Economy" (2000). She writes that the old economy can be said to cover the years from 1938 to 1974 as time for old economy, or could be named as the industrial age, because this economy was built on a "manufacturing base geared toward standardized production" Robinson further points out that this old economy was "organized into stable, hierarchical and generally autocratic organizations"

Furthermore, as Robinson also pointed out, the old economy was based on organizations. We believe that production in these organizations could be faster and more economical in order for them to achieve a competitive edge in the market.

On the other hand, the organizations usually have the following aims: cost reduction and by establishing their place in the market; this was how success and prosperity were achieved in most cases.

Between the mid-1970s and the early 1990s, the economic order began breaking down. However, these crises, which occurred during that

period, could be overcome. Robinson believes this to be one of the reasons for the development of the New Economy.

The New Economy can be seen as a knowledge-based economy. Compared to the old economy, the key to being successful is the extent to which new technologies can best be used, so that ideas and knowledge could be enhanced in all sectors of the New Economy.

For example according to Robinson, 80% of the jobs in the US today do not spend time making things (such as during the Old Economy), they process things, or generate information. During the 1960s, 60% of jobs in the US could use unskilled labor, but now, it is only approximately 15%. (Robinson, 2000)

Evidence during recent decades of changes in the economy, such as: high speed telecommunications, personal computers, Computer technology and internet communication in everyday life, can be seen almost all over the world. Not only advanced technology but the internet connections make up a large proportion of the New Economy. For many people today, their working life is being organized around technology and evolving with technology rather than simply by using it.

The main focus of the New Economy is new organizational models, emphasizing teamwork, thereby empowering people and businesses. In contrast, the Old Economy focused on local, state and national markets. The New Economy, however, has a global focus. For instance, just as Robinson pointed out, between 1960 and 1997, U.S imports and exports grew at a rate 1.5 times faster than growth in domestic targeted production.

Robinson also stated that, in terms of how states try to attract business, there are two key differences between the Old and the New Economy.

It can be said that the first major difference between the Old and the New Economy is in the area of infrastructure: especially with regard to information flow. Just as one scholar reportedly said: "Highways are necessary, but information highways are more important."

Second, labor is no longer from low-priced and unskilled to skilled workers but these are now better educated. Education is more important than cost to the New Economy companies.

For example, in 1950, 60% of the workforce worked in unskilled jobs, and in 2000, only 15% of the workforce is employed in unskilled jobs. The percentage of technical jobs has remained steady at around 20%. The unskilled jobs have more or less disappeared in favor of skilled jobs.

Robinson states that the two main differences of the Old and New Economy are named as time and age, with two growth factors in the Solow Model, namely human capital and technology. Although she did not explain this in greater detail, these two growth sectors could help to define the New Economy more easily.

Using the explanations of Robinson, we could see that the New Economy emerged from the beginning of the early 1990s as follows: the workers of the New Economy were skilled labor forces, while technology for the New Economy is mostly with regard to the Information and Communication Technology.

Other issues could also not be sufficiently explained by Robinson, such as government behavior, as well as products in the New Economy, how the monetary policy and how the developing market for the New Economy is not defined. (Hämäläinen, 2001). Nor could these be found in the work of Robinson.

2.3 Weightless Economy (Quah, 2000)

What is the difference between ICT and any other kind of technology, such as oil and steam locomotives of earlier centuries? How does economic development with ICT differ from any other kind of knowledge-driven economic growth? Quah (2000) used these questions to introduce his article on the New Economy.

Quah answers these questions, with his concept of the weightless economy. Just from the theories of Quah, we can observe the following:

1. Information and communications technology, including the Internet and telecommunication;
2. Intellectual assets broadly speaking - not just patents, but also copyrights and trademarks for the music and video entertainment industry, advertising, images, industrial trade secrets, financial consulting services, health and medical consulting, education, etc;
3. Electronic libraries and databases;

4. Biotechnology: Carbon-based libraries and databases.

While Robinson concentrates on theoretical perspectives, Quah focuses on technology improvement, but he does estimate the differences in human capital, such as the labor force. Quah on the other hand, attributes only these 4 main technological findings to the growth in the New Economy:

In this chapter, the New Economy has been explained by using the aforementioned three theories. However, these three theories are not enough to obtain general ideas as outlined in Chapter 1.

Developments in the New Economy are continuously growing. These results show a high growth rate in the long term, in all sectors of the New Economy.

3. New Economy Growth Analysis using classical Growth Theory

Labor productivity and technology are the two major factors in economy growth, as seen in the Solow Model of the 1960s. We investigate how these two factors contribute to the growth of New Economy.

3.1 Labor Productivity Factor

Productivity growth in the New Economy sectors has made a significant contribution to economic growth (Eliasson, 2004). Nordhaus (2000) points out that: for the business sector, there has been an approximate increase in labor productivity growth of 1.82 percent in the last three years, and 0.65 percent was due to these New Economy sectors. One third could be attributed to the total US economy in the late 1990s.

At this time, productivity growth rebounded sharply. Bosworth and Triplett discuss this rapid growth in productivity in their works. At least

part was clearly due to astonishing productivity growth in the "New Economy" sectors of information and communications (Cortright, 2001).

Removing the direct effect of New Economy sectors, the productivity acceleration was 0.54 per cent of the total GDP, 0.65 per cent for business output, and 1.18 per cents for well-documented output. It is clear that the productivity rebound is not narrowly focused in a few new-economy sectors (Nordhaus, 2000).

As already mentioned, we can easily see in the empirical literature, that the New Economy has increased productivity, and therefore contributes to the total US economy.

This empirical data underlines our findings that the increased labor productivity in the New Economy resulted in an increase of total Labor productivity in the economy that is proved by the Solow growth model: increased labor productivity contributes the total economic growth. (Solow, 1956).

3.2 Information and Communication Technology (ICT) Factor

We believe that in the Industrial age, information plays an important role in operating the economy. The aim here is to provide a simple analytical framework within which to treat the effects of increasingly widespread diffusion of information technology and the Internet on productivity and economic welfare.

The basic thrust is that IT (Information Technology) and internet connection technology have, for a long time, increased economic growth rates by substantially lowering transaction costs (costs of using markets) and thus significantly extending the boundaries of relevant economic markets. This will therefore afford greater opportunities for competition, economizing efforts and productive specialization that expand economic productivity, which is a thousand times greater than two hundred years ago.

Some empirical data, which was introduced by Fair in the year 2003, shows that the performance of the U.S. economy has been outstanding in recent years. During the 1990s, the U.S. economic growth rate has far

exceeded the levels of the 1970s and 1980s. Furthermore, the U.S. economy has surpassed the economies of almost all other industrialized countries such as Japan and OECD countries. A consensus is emerging among economists that IT contributed significantly to this outstanding performance. Nevertheless, as we noted, the extent of IT contribution to economic growth remains controversial.

There is also considerable controversy regarding the contribution of industries that use, as opposed to produce, IT (Information Technology). This controversy remains largely because of problems in measuring productivity growth.

The two major factors in the Solow Model have increased so fast in the New Economy era. Some empirical data also supports this view. But the overall growth of the New Economy itself cannot easily be explained just only from these two sectors. In the next Chapter, a more detailed analysis is used to explain this.

4. Model Theory: ICT FirmsöPerspectives Analysis

4.1 Introduction

In this work another Growth Analysis Theory will be introduced and discussed. This Theory was first introduced by Meijaard in 2001 in his paper óMaking Sense of the New Economyô.

Based on several contributions to the managerial and economic literature, he derives five causal chains that can also be called óLogicsô in order to better understand the relation to the strategy, structure and performance of firms. The ôfirmsô to which Meijaard refers, are the ICT firms in the New Economy. These firms in the New Economy sectors are the hardware and software industries as well as the networking industry. In the Chapter 1, these sectors have been introduced and discussed in detail.

These five causal chains cover various relationships between information and communication technologies and economic growth.

Meijaard writes that these five causal chains are in different perspectives in the firms of the New Economy:

1. Organizational processes;
2. Market process;
3. Product processes;
4. Socio-cultural processes; and
5. Innovation and Learning.

The fourth Chain by Meijaard is the socio-cultural process. It seems that Meijaard does not entirely define that this process consists of distinguished relationship between the firm and the economic growth.

Meijaard writes that: "information and communication technologies are an important facilitator for a number of social and cultural trends, especially in the areas of globalization and consumer empowerment." Is ICT a really important facilitator for social and cultural trends? This issue is always debated by academics. Furthermore, globalization is also a very topical issue in the recent economic literature. We could not agree

with the arguments by Meijaard that the ICT development could make the social changes, and that this in turn benefits the economic growth.

“The ICT development could make the changes in the social and cultural processes, and then benefits to the economic growth” (Meijaard, 2001) will be discussed. He believes that ICT could change the social processes, and then the changed social process could indirectly change the organizations and innovation of firms, thus benefiting the total economic growth.

By further examination of Meijaard’s paper, we found that Meijaard gave little supporting evidence of this and that he did not give any empirical data to support his arguments.

Based on the above, we could not accept the fourth process to the perspective analysis theory. Just from the firms’ internal and external side, these four perspectives should be re-defined as two larger perspectives: firms’ internal perspectives and the firms’ external perspectives.

So the author of this work defines the ICT FirmsöPerspective Analysis has two major perspectives: Firmsöinternal perspectives; Firmsöexternal perspectives.

Firmsöinternal perspectives include:

- a. FirmsöOrganization perspective,
- b. FirmsöInnovation perspective.

Firmsöexternal perspectives include:

- a. Market perspective,
- b. Product perspective.

4.2 Firmsöinternal Perspectives

4.2.1 Organization Perspective



Firmsöinternal perspective 1: Organization

As one can see from the above graphic, ICT development creates the improvement and innovations in the firmsöorganization; developed

organizations could also increase their efficiency and productivity, thus benefiting economic growth.

This is a short analysis of the organizational perspective. Meijaard states that: "the opportunities to use improved information processing and communication tools affect the critical conditions for the key business processes" Here, the key business processes should be considered as the primary processes, just like the manufacturing processes and the support processes, also for instance, the office administration in the manufacture.

ICT development also brings improvements in the efficiency of the firms in different areas, such as coordination and communication as well as interaction within and across the organization.

Meijaard believes that the reduction of overall costs could create new opportunities for "optimal solutions for flexibility and responsiveness in the market place".

For instance, a firm develops an administrative network, in turn creating an ERP system (Enterprise Resource Planning) in order that managers

in different areas could obtain faster and easier connections than before. Certainly, the overall costs of the firms' communication will decrease, and further structural and organizational changes in other areas could be introduced.

Based on these situations, organizational boundaries should also be reconsidered, once such changes have taken place. Meijaard also states that organizations can pursue efficiency and flexibility by:

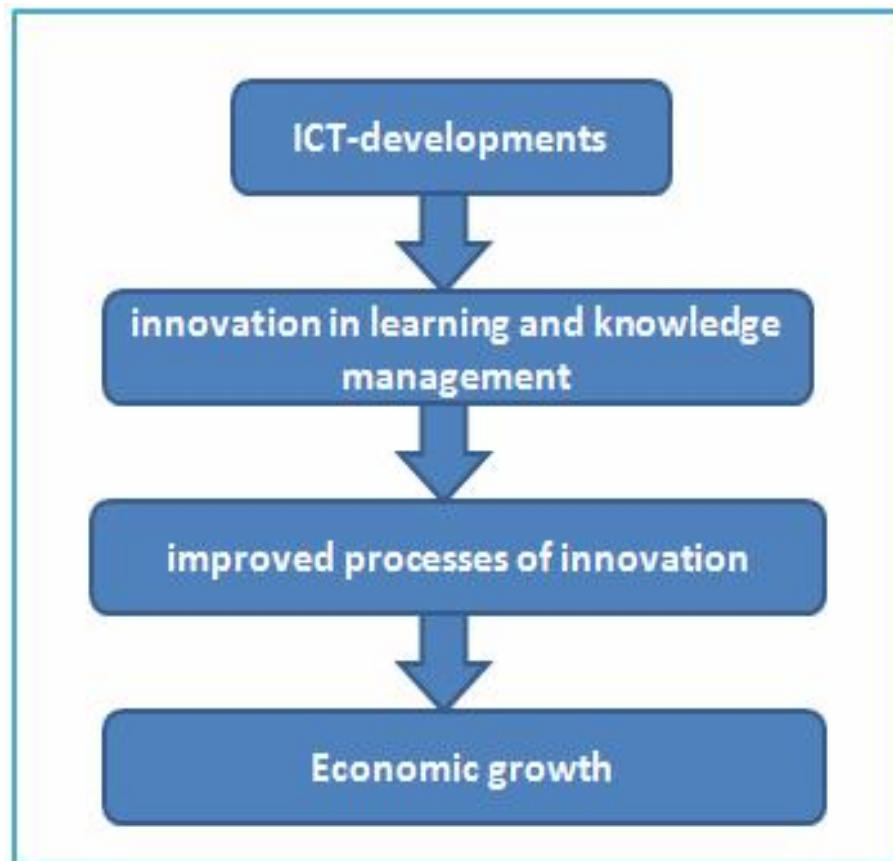
1. Outsourcing,
2. Creating new models;
3. Introducing new kinds of linkages, and
4. Adopting new cost and performance allocation mechanisms.

By changing their use of ICT, firms could increase the quality and quantity of the information. Just as the amount of ICT used by a company increases so too does the complexity of decision making increase. Managers now have more access to information than they have ever had before. Meijaard has stated that: in relation to the

organization of economic processes, the effects of improving information and communication technologies are complex.

Managers have increasingly to take responsibility for their decision making. As Meijaard stated, "increasingly, optimal decision making involves the incorporation of an enormous variety of arguments, including the valuation of 'soft' factors like trust and culture. Especially when shifting operations outside organizational boundaries, new mechanisms may try to fix things that cannot break."

4.2.2 Innovation perspective



Firmsöinternal perspective 2: Innovation

ICT development could also bring improvements to the firmsöinnovation processes in learning and knowledge management. Meijaard emphasises that this perspective is potentially one of the main mechanisms of the New Econo my.

Why should we think that is potentially the most important mechanism in the New Economy?

In the first perspective, organization, we should not forget that as information and communication technology increases, managers are faced with an increase in problem solving and decision making. The right decision making of managers is just as important as the firm's ICT development.

Meijaard argues that 'effective management of knowledge within and between organizations can improve by the application of ICT'. Here the effective management of knowledge could also be considered as the decision making in the firms by the managers.

Furthermore, he believes that: 'within and across the boundaries of the firm, the allocation of entrepreneurial and innovative capabilities can benefit, if information becomes cheaper'. This means that entrepreneurial initiatives may result in the most productivity.

From the firm's point of view, innovation means the new tools to communicate and process. This could fuel technological progress, if the information can easily be transferred and exchanged. When considering innovation in a global perspective, ICT-enhanced technological progress can be greatly improved. Meijaard believes that this may create opportunities for a rise in permanent economic growth.

Meijaard concludes that the ongoing changes in the areas of innovation and knowledge management in ICT can be outlined as follows:

Firstly, effective management of knowledge within organizations can improve organizational learning and innovation; this in turn creates opportunities for the new information and communication tools which then trigger new incentives for both researchers and entrepreneurs to communicate and share information, thus enhancing technological progress.

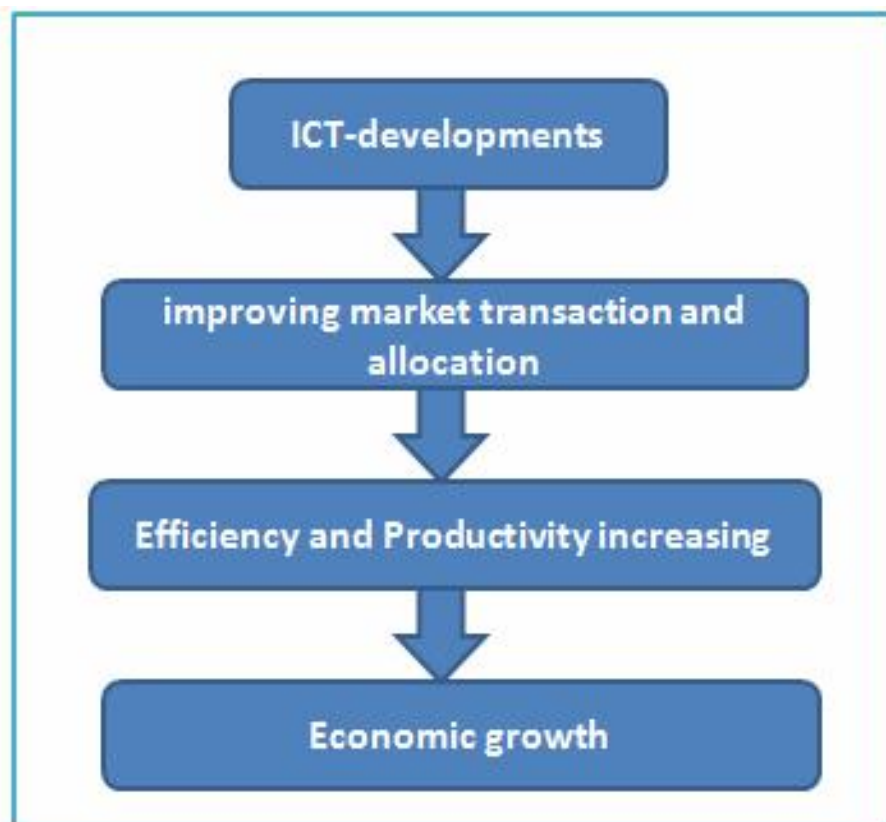
Secondly, and indeed which is more significant, the potential efficiencies of a new organization consists of many value chains (business value creation) and this seems to create a trend towards smaller and more

competence-driven units of operation. This further fosters a firm's innovation and positive entrepreneurial dynamics, thus contributing to an entrepreneurial, networked economy.

The two aforementioned features are the two sub perspectives in the firm's internal perspective. We will also analyse the firm's external perspectives: the market and the product.

4.3 Firmsöexternal Perspectives

4.3.1 Market per spective



Firmsöexternal perspective 1: Market

The first firmsöexternal perspective, that is, in which way the ICT s could be positively affect economic growth is through the changes in the market processes. This relates to the impact of new and i mproved tools

of information processing and communication on the mechanisms of allocating goods and services from business to consumer (B2C) and from business to business (B2B). That is to say, ICT could alleviate a range of the market imperfections. (Meijaard, 2001)

The benefits of ICT in the market can be seen by reducing the costs of transactions and increasing the allocation mechanism, which could result in the firms' overall efficiency and productivity, thus creating economic growth.

In the New Economy, the definition of the market has changed considerably. Today the definition of markets is based on products and services and is no longer limited by geographical borders. According to Meijaard, this means that value chains will be organized on a more global basis. The adoption of ICT applications can widen the relevant boundaries of competition for a range of products. This can greatly improve the efficiency of market allocation, such as the online market in the New Economy, for example: eBay.

The classical market theory of supply and demand could further be enhanced by using the ICT applications. This could not only be better

and faster for the consumer market, but also for the B2B market, such as the material and the investment goods market.

By using ICT applications in the market, some problems could also arise. Meijaard believes that, the quality of the products and quality of information about these products cannot easily be obtained.

These problems could be like the information transparency, product price dispersion and the information asymmetric (Meijaard, 2001). These things could occur everywhere in the internet, such as the product descriptions could be seen, but at the same time, we could not see the real product. Internet just gives us the information, but the quality of the information about the products cannot easily be determined.

Just as firms provide product information to customers, on the internet market, there is really a lot of information available to customers. How the information's quality is depicted is another problem for the internet user. Just as Meijaard states, customers and suppliers will be tempted to spend more efforts in search processes that were previously considered irrelevant and unfeasible. The efficiency thereof will become a less and less relevant argument, while quality issues will remain unresolved.

Although there are really a lot problems with regard to the quality of the information, the ICT applications in the market could result in cost reductions and faster availability of products, services and information.

4.3.2 Product Perspective



Firmsöexternal perspective 2: Product

This causal sequence of the firmsöexternal perspective in which the ICTs may be raising economic growth relates to product innovations. It is also included the creation of new customer value and the specific

attributes of ICT-based innovations, which was put forward by Meijaard, 2001.

To understand the relevance of specific product features, two types of products will be introduced:

- (1) New products from ICT-sectors and
- (2) Renewed products from old sectors

Meijaard gives us clear definitions of these items:

The new products above, such as hardware, software and e-commerce can be seen as innovative goods or services. They are applied throughout the economy, mostly as investments in process innovation. The 'renewed' products, for instance are like information products and improved e-services. They can be seen as product innovations that create new markets and close substitutes for adjacent existing products.

Meijaard believes there are three points necessary for the New Economy goods to establish the economic growth:

Firstly, information intensive products have very low marginal costs. That could be easily understood, the cost of the first CD is really higher than the thousandth, just because of the research and development costs for the New Economy industry is too high, and the CD production, just as the marginal cost is too low. Therefore, the firms must learn to price discriminate through image, quality and service.

Secondly, the pay-offs to the marginal client are minimal for the first users of the network. Most importantly, the pay-offs to customers that paid in the past are increasing as the network grows, providing room for additional periodic fees once a critical mass is achieved.

And thirdly, effective knowledge management can cultivate network externalities. The increased opportunity to process information and communicate over networks therefore has two efficiency bonuses: to the individual user of the network and to the network as a whole.

Based on above three points, Meijaard argues that, these New Economy Firms could obtain competitive advantages by introducing both new and renewed products. The Firms can show flexibility as providers of diverse applications and services. As for finding a better marketing strategy for

the New Economy firms, the aggregated marketing could be the right choice for them.

4.4 Critical Comments on Perspective Theory Analysis

These four internal and external Perspectives from Meijaard discussed above are an attempt to present a systematic view of the changes in the economy due to the opportunities created by the developments in information and communication technology (ICT), but he further states that there may be barriers to the aforementioned positive shocks and shifts in economic growth.

Firstly, direct barriers to progress exist, due to:

- (a) Increased investment costs,
- (b) Investment risks,
- (c) Incorrect judgement and decision making,
- (d) Failure to organize.

Secondly, scarcity remains very relevant on a local level and this will continue for many years to come. Labour and other inputs are still geographically bound, although this is beginning to change.

Management costs for transaction for the physical and non-physical goods remain considerable. Coordination costs risks to switch to the different organization of the value creation process are slow to decrease.

Thirdly, not the highest but the lowest speed of innovation and growth really count in the economic system. In this case, just as Meijaard comments, the realized speed of growth is determined by the lowest link to economic growth.

5. Conclusions and further working

The New Economy has been a major contributor to economic performance in the total economy for decades. Defining exactly what the New Economy is, is not an easy task. But some scholars, such as Robinson, Summers, Quah and De Long, have provided some insight. Their theories about the New Economy have given us a great theoretical working base.

The Solow model provides us with a good way to measure and analyze the growth of the New Economy. These two factors, human resources and technology, have really proved their contribution to the growth of the New Economy. Like it or not, Information Technology has been a revolutionary power that deeply impacted our lives. From the 'New Economy' perspective, information technology is a very important boosting power. The creation of the New Economy is indeed the contribution of both economic policies, i.e. the human elements as well as technological developments. (Meijaard, 2001)

The influence of information technologies on productivity, cost reduction, and globalization are not independent of, but interconnected to one

another. That is to say, the development of information technologies would benefit all areas.

By using the classical Growth Theory to describe the New Economy has also not been an easy task, but by using the logics of the growth model, we could see an overall growth in the New Economy; this is indeed a better view of the whole.

In conclusion, the 'New Economy' is not a bubble, although it is experiencing a downturn, which is normal for any kind of economic phenomenon. Sustained by strong technological advancement and stable economic policies, the 'New Economy' will certainly make a comeback and when it does, will be even stronger.

While this work concentrates on the theory, it is clear that, further empirical analysis will help us to more easily understand the overall picture.

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Appendix

KURZFASSUNG

Auch wenn die "New Economy" schon seit längerer Zeit existiert, begann sie seit Mitte der Neunziger Jahre eine wichtige Rolle, nicht nur in der US-Wirtschaft, sondern in der gesamten Weltwirtschaft zu spielen. Es ist das Ziel dieser Arbeit zu erklären, wie die "New Economy" heute funktioniert und wie sie wächst, unter Zugrundelegung sowohl empirischer Daten als auch theoretischer Analysen.

Zunächst werden empirische Daten, die "New Economy" betreffend, präsentiert. Weiters werden Unterlagen einiger Gelehrter dieser Wissenschaft Fragen unterworfen, um zu einer Definition der "New Economy" zu gelangen.

Für die klassische Wachstumsanalyse wurde das Solow Modell der Wachstumstheorie angewendet. Berücksichtigt wurden die beiden Hauptfaktoren der Erzeugung: Arbeit und Technologie, als vornehmliche Gründe für die Entwicklung der "New Economy". Mehr im Detail werden auch die vier Perspektiven (Organisation, Markt, Produkte und Neuerungen) in Unternehmen, welche die "New Economy" eingeführt

haben, untersucht. Die Wachstumsanalyse der "New Economy" wird im zweiten Teil dieser Arbeit als starke Ergänzung zum Solow Modell eingebracht. Letztendlich ist die neue Theorie der vier Perspektiven der Höhepunkt dieser Arbeit, die die Entwicklungsanalyse der "New Economy" untersucht.

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