



Faculty of Economics, University of Niš, 18 October 2012

## International Scientific Conference SERBIA AND THE EUROPEAN UNION

---

### TECHNOLOGY PIONEERS ON THE SOCIO-ECONOMIC DEVELOPMENT

Žika Stojanović, PhD\*

Bojan Sešel, MSc<sup>•</sup>

**Abstract:** *The latest analysis of trends of GDP in the world and selected regions and countries shows that the economies estimate insignificant progress, there fore some economics still face with recession. In todays globalize environment, the economy of each country depends on the result technological development and IT development as apply of innovations. The subject of this paper is to present the main trends in the global economy as well as measures to improve the positive effects of IT development. Advances in IT have enabled a high degree of coordination among the participants as well as their connections, which means that, at any moment, acting on information is very easy. The aim of this paper is presentation of individual methods and examples for promoting effects that allow an orderly and sustainable development of economy and society, and also prominent and measures which will be taken to minimize negative effects. The method which we will use in research, are standard economic methods. On the basis of all we can estimates that there are not enough number of countries which applies criteria for sustainable investment and IT progress, what is not accept, especially for countries which pretend to become the members of EU.*

**Keywords:** *information technology, innovation, development, society, economy, efficiency, technology pioneers.*

#### Introduction

The latest analysis of trends of GDP in the world and selected regions and countries shows that once again includes some of the economies in recession, while developing economies show recovery. It is anticipated that the total world production will increase by 3.5% in 2012 year and is expected to increase to 3.9% in 2013 year. of which 1.4 in the leading economies, in the euro area is projected to decline by 0.3% which will only show positive growth in Germany and France and the United Kingdom will achieve growth slightly above zero. (IF, 2012) The total global consumption, especially in developing countries,

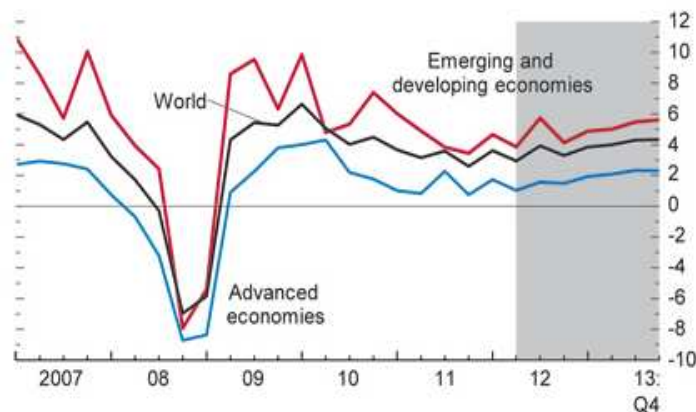
---

\* Higher Business School Leskovac; e-mail: stojanovic.zika@vpsle.edu.rs

• Higher Vocational College Celje, Slovenia; e-mail: bojan.sesel@guest.arnes.si

shows a positive trend last year. However, it is still high unemployment rate, and the risk of inflation, especially for intense injection of financial capital.

### Global GDP Growth



Source: IF, World Economic Outlook, 2012

Governments of all countries in the fight for the financial and economic stability must take into account the prediction of the so-called next waves. These waves are related to economic and social development that is expected in the coming years.

To be competitive in the global marketplace Europe needs to create higher quality and more innovative products and services. Higher productivity is the basis for establishing a good social model. New jobs and new skills are developed, as well as technology, innovation, demographic change and climate change, caused by new needs and require new strategies. Turbulence and exit strategies accelerate economic restructuring, which is an additional requirement for countries that are candidates for accession to the EU.

### Changes in Labor Supply

All this affects the kinds of skills and qualifications of personnel that will be needed. The planned results will be useful only for those involved in politics but also for people looking for or have a need to change the education and training or career, then for those who carry out education and training, then the agencies dealing with employment and the company itself and for other types of enterprises and institutions. If all personnel be better informed, then their decisions on investing in knowledge and skills to be effective. Recognition of skills is an important requirement to people in education and training must be met as well as facilitating mobility of staff.

### Developments in the Labor Supply of Skills - to the Higher Qualifications

Since the number of people and skills that have been largely predetermined demographic development and education and training decisions. These decisions are already taken, so that the majority of young people aged 15 to 24 years, are still in the process of qualification. The trend of the overall supply measured by the number of

## **Technology Pioneers on the Socio-Economic Development**

---

economically active people (over 15 years of age) with high and medium level qualifications remains positive. Significant increases are projected for those who qualify. It is anticipated that demand for labor with low qualifications will fall to about 15 million, while it is expected that in 29 European countries (EU plus Norway and Switzerland) at the same time the number of people with higher education will be about 16 million. It is also expected to offer those with secondary education, mainly vocational, increases by about one million, and they will still do most of the European workforce. This will be reflected in the effects that younger people who will appear in the labor market have higher qualifications, while less qualified older people leave the area of the active labor force.

Despite the recession, high and medium skilled labor force will always have more opportunities to find work than those with lower qualifications. Prediction results also suggest that many people with high and medium level qualifications will be in jobs which demand lower qualification. (Cedefop, 2010)

## **Leading Representatives of the Technology Pioneers**

In recent years information and communication technologies are changing the world dramatically. It allowing for increased new way of production and improving efficiency, and that made optimal condition by link people all around the world and gives possibility for better and quality life. During the time when changing the way an individual life, work and interaction, Information and Communication Technology have also proved Information and Communication Technology have also proved as the *condition sine qua non* for any company or institutions to be competitive, to modernize economic and social environment and one of important instruments for leveling the economic and social divisions and poverty reduction.

Each state, institution, or social group, in the last 10 years changed the way its interaction with the technologies goals. For example, governments have only concentrated on specific subjects such as construction of infrastructure and ensuring access for citizens begin to realize IT technologies are not inherently important, than the ways in which they operate as social and economic results that it can enhance, and through health programs, services, and electronic forms of electronic networks involving digital technology. The fact is that people are aware of that knowledge in the field of communications and information technology is a way to reduce costs and achieve more efficient operations, but it is also one of the key ways to establish dialogue with specific customers and other stakeholders in this process. This can be achieved in various ways: digital communication, advertising which has a mobile character, marketing who is also digital, some social networks, and with the e-commerce by itself. (Weforum, 2010) The new digital world is accepted by consumers, so-called generation C, and there are consumers who were born in the early 90-is of the last century, and they are connected to communication, computerized and socially oriented.

NRI - Networked Readiness Index (an index that measures the ability of the affinity of the countries to seize the opportunities provided by information and communication technologies are), for the period 2009/2010 shows that in Sweden in the first place, followed by Singapore and Finland and so on., while Serbia is the 93 place, behind all the neighboring countries, except Bosnia and Herzegovina. (Weforum, 2009)

## Social Networks

Technology pioneers whose number is steadily increasing in the world and one of their representatives is the "Twitter", a technology used to increase the power of individuals, thus resulting in changes in the whole society. In the first election campaign, President of USA gives the special attention to recruiting a large number of people to work in electronic media. The President has used social networks like, Facebook, which allowed him to easily engage a huge number of volunteers across the country and thus has provided effective collection of funds that had been necessary to successfully completed campaign.

The new President of Chile requires the entire cabinet to start using twitter. Based on data from the print world, many politicians are using social networking services. Increase the use of social networks has led to changes in hierarchy, and now much more activity from the base to the top than it was formerly the top to the bottom. A good example of moving the center of power and giving more importance and power of the so-called periphery is a social network, Twitter, and it all thanks to IT. Such a case is to enable non-democratic dissidents in the condition that their voices are heard, as well as charitable organizations to collect money and draw attention to them on a global scale. In the modern world, many rescue workers, especially doctors, were assisted by the social networks that their effects are more successful in work and so allow the crews not only to be more effective and easier to obtain and connect information that are vital to their operations.

IT used to increase the power of individuals, especially in a much undeveloped countries in the regions of Africa and Asia. It can all contribute to the improvement of human health and the spread of cultural influences. On the other hand, it requires all companies to realize that, thanks to technological innovations, more power to transfer "in the hands of customers," so that all companies need to reassess their attitude towards customers. (Cedefop, 2010)

An interesting example of an author who is at the end of his literary work rather than to publish it in the traditional way, he publishes his work through social networks. This allowed him to instantly e-publishing and then drew a publisher who has agreed to this classic book printing and publishing. New technologies make it possible to avoid the obstacles that prevent the products and services easily due to the customer.

## The Power of Cooperation and Accountability

One of the pioneers of technology who specializes in energy efficiency has the intention to close the energy consumption in terms of supermarket sales, and that is, to allow the consumption of energy has its ingredients, its purpose and its price, and not after 30 or 40 days receives the bill for the consumed energy where there is only debt and any other information. Lot of new information to be gained from the energy sector for every customer to provide the level and quality of information which they receive as consumers that purchase goods in stores and conventional supermarkets. Based on this information, consumers will be able to act on energy consumption similar behavior when analyzing bills they receive when buying goods in supermarkets.

Technological development, IT and the innovations that enable people to cooperate and connect in new ways, affecting both the business and on humanitarian efforts. Companies that fall under the so-called technology pioneers provide customers

## **Technology Pioneers on the Socio-Economic Development**

---

ability not only to understand how they account for energy consumption, but also to obtain accurate information as to the amount of energy consumed and provide them the opportunity to actively relate to the consumption with their reports and data, and to take more responsibility for reducing energy consumption, thus saving money and helping reduce negative impacts on the environment. An example is a company that analyzes the work of machines, using algorithms to provide the essential understanding of energy consumption. In this way allows the comparison of our own energy consumption with neighbors or other companies and provides advice on how to reduce energy consumption. Group technology pioneers in 2011., were influenced on consumers and business environment, and as a result of this influence is to enable businesses and consumers to influence at the environment in which they are located, on a variety ways Interestingly, the pioneers of the technology when it is officially recorded, and that means 11 years ago, have same number of companies that use environmentally friendly technology, and the number of IT companies. The request for increased energy efficiency for both companies and consumers are constantly increasing, not only by operation of law when it comes to companies, but also for consumers because they like as all the other companies which have to be socially responsible. A special requirement is that the company must also be registered as a socially responsible.

In this field there a help of technology pioneers some people give the new environmental options when construction of houses or factories, using different technologies to build environmentally friendly buildings.

Environmental, social and corporate governance, and ESG, are the three main areas that are considered as main factors in the measurement of sustainable development and ethical consequences of investments in companies or other activities, and when all these factors we take into account the so-called social responsible investing. Effects of ESG focus can help to identify new opportunities to improve profits, for example, when new "green" products and services, then, reduce costs, such as for example the elimination of waste and inefficiency in the production process. (Esgshares, 2011)

Technologies have to help individuals to take responsibility for their own education. It is expected that in the next 10 years be all texts in electronic form, and they will be shipped via enhanced electronic reader. Students wherever they may be information technology will allow they to take classes which are accredited through the Internet. Such download video lectures will be controlled by the best specialists. Students are also allowed, by representatives of one of the pioneers of technology that is in its business program has developed a special algorithm, that directly and on the best way access online content and the appropriate mode of learning, adapting educational content to their individual needs.

### **Determination of Technological Pioneers Based on the Following Criteria**

The first criterion is that the company must meet in order to be accepted as an innovative and to be really innovative and not to use the already accepted and known solutions in the field of technology is to own and develop genuine innovation. This innovation and its importance for the overall market should be absolutely new. The next part of this criterion is that the company invests significantly in research and development.

The second criterion relates to the potential impact. This means that the company is in a significant period of time significantly affects their business.

The following criteria apply to the growth and sustainability. The company should have the potential to allow it to be a market leader on the long term. Development and growth of the company must specify precise plans.

The fourth criterion relates to the company's own products that are accepted by markets or technologies that have been proven with practical application

The fifth criterion related to the management and his visionary ability to set goals and direct whole management to achieve goals.

All companies which has been selected as the technology pioneers for 2012. Year have to come in tree main categories:

- Information technologies and New Media
- Energy and environments
- Life sciences and health

There are 25 companies, and some of them are:

1. Altobridge Limited
2. GSM
3. Appirio,
4. CloudFlare,
5. Dropbox,
6. Financial Inclusion Network & Operations,
7. Kickstarter, Inc., to pioneer peer-to-peer financing
8. Living PlanIT SA,

The global community is facing many challenges, a technology pioneer with his dedication and his ingenious solutions provide answers to many problems of the global community. Certain contributions pioneer technology can only solve some of the problems around the world, but what is characteristic of the modern world is that all of these pioneering technologies have a common denominator and that is to force all of us to look in the future with the new way in entrepreneurial manner.

Technology offers unprecedented possibilities for improving business conditions, but technology also provides a wide range of options for amateurs, people who are against the system, the criminal structure and terrorists. At the present time the myth that technology can provide tremendous opportunities to man becoming a reality. It's hard to predict what people can do with all the newly discovered possibilities of technology. There is a risk that a kind of hunger for democracy and general internet access leads to populism and produce people who are broadly under-informed. What is common to all information technology development and the results of this development that is difficult to control positive or negative effects of this development, by individuals, organizations, groups, and even countries.

The above selection of technology pioneers trying to cover various aspects of technology development, namely: the internet security field, the field of so-called clean technologies, creating the conditions to ensure availability and improve healthcare efficiency and social welfare. This selection also means better solutions to new

## Technology Pioneers on the Socio-Economic Development

---

transportation systems, the development of modern and cost-effective tools for easier and better access to and joining the population that have so far been unable to join the network in the financial world.

### Conclusion

The latest analysis of global economic trends point to a recession, especially in some EU countries, but also still have high rates of unemployment and the threat of inflation due to the intense injection of financial capital. For Europe alone is essential to create more innovative and better products and services. The current turbulence and the need for exit strategies accelerate overall economic restructuring. Changes in labor supply will move to the demand for higher qualifications. Information and communication technologies dramatically change the world, connecting people and society, increasing living standards and have proven themselves as a *conditio sine qua non* for achieve the necessary competitiveness as well as social and economic modernity as a convenient and effective tool that will enable the reduction or complete elimination of economic and social divisions, and also reduce poverty, but also provide the ability to manipulate and abuse.

Each state, institutions and social groups in the last 10 years changed the way its interaction with the goals and technology. The relationship of technology and economy points the possibility to open a dialogue with other participants in this interaction, and to enhance the socio-economic results and avoid possible negative consequences.

### References

1. Accelerating the Transition towards Sustainable Investing, World Economic Forum, (2011), [www.imf.org](http://www.imf.org) (04.05.2012.)
2. David, Paul and Aghion, Philippe, (2008), Technology and Innovation for, Economic Growth: Linking Policy, Research and Practice in "STIG Systems", Stanford University, Harvard University, Munich Personal RePEc Archiv, Science
3. Empowering People and Transforming Society, World Economic Forum, (2011), [www.weforum.org](http://www.weforum.org), (10.05.2012.)
4. IMF, World Economic Outlook 2012, [www.imf.org](http://www.imf.org), (20.05.2012.)
5. Pax MSCI EAFE ESG Index ETF (EAPS) Q2 2012 Fact, [www.esgshares.com](http://www.esgshares.com), (22.05.2012.)
6. Skills supply and demand in Europe Medium-term forecast up to 2020, Publications Office of the European Union, Luxemburg (2010), [www.cedefop.europa.eu](http://www.cedefop.europa.eu), (07.05.2012.)
7. Skills Supply and Demand in Europe, (2010), European Centre For The Development Of Vocational Training, [www.cedefop.europa.eu](http://www.cedefop.europa.eu), (12.05.2012.)
8. The Global Information Technology Report 2012, World Economic Forum, (2012), [www.weforum.org](http://www.weforum.org), (23.05.2012.)
9. The Networked Readiness Index 2009-2010: Benchmarking ICT Progress and Impacts for the Next Decade, [www.weforum.org](http://www.weforum.org), (11.05.2012.)

## UTICAJ INFORMACIONIH TEHNOLOGIJA I PIONIRA TEHNOLOGIJA NA SOCIO-EKONOMSKI RAZVOJ

**Rezime:** Poslednje analize trendova BDP-a u svetu i pojedinim regionima i zemljama pokazuju da ekonomije sa velikim teškoćama ostvaruju neznatan napredak dok se pojedine još uvek suočavaju sa recesijom. U savremenom globalističkom okruženju ekonomija svake pojedinačne zemlje zavisi od posledica tehnološkog i razvoja IT kao i primena inovacija. Predmet ovog rada jeste izlaganje osnovnih trendova u svetskoj ekonomiji kao i mera za poboljšanje pozitivnih efekata razvoja IT. Dostignuća u IT omogućila su visok stepen saradnje među učesnicima a isto tako i njihovo povezivanja, što znači da, u svakom momentu, delovanje na bazi informacija je veoma olakšano. Cilj ovog rada je i predstavljanje pojedinih metoda i primera za promovisanje efekata koji omogućuju stabilan i održivi razvoj privrede i društva, kao i prikazati mere koje će biti preduzete da se minimiziraju negativni efekti. Metode koje ćemo koristiti u radu su standardne ekonomske metode. Na osnovu ovoga može se ustanoviti da nedovoljan broj zemalja primenjuje kriterijume za održivo ulaganje i progres IT, a to je nedopustivo za zemlje koje pretenduju da budu članice EU.

**Ključne reči:** informacione tehnologije, inovacija, razvoj, društvo, ekonomija, efikasnost, pioniri tehnologije.