

# SMART SOLUTIONS FOR THE DIGITAL ECONOMY IN SEE

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*SMART SOLUTIONS  
FOR  
THE DIGITAL ECONOMY  
IN SOUTH EAST EUROPE*

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Sofia, 2018



## **Smart solutions for the digital economy in South East Europe**

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# EDITOR'S NOTE

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This is a collection of speeches given during the Conference "Smart Solutions for a Digital Economy in South East Europe" in June 2018.

More than one hundred participants discussed the societal and economic advantages and challenges of what is known as the next technological revolution. It is important to note that debates were not technology-centred, but people - centred. All the parts of Europe from North to South and from East to West were represented and most of the aspects of the digital future discussed. Such as regulation, employment, education, regional development and even politics.

Unfortunately, the discussions during the pannels can not be presented, but we hope this publication will give a good picture of a very vivid day long event.

*Zinaida Zlatanova, Teodora Mihaylova*

*Liberal Institute for Political Analyses*

*Editors*

# Chapter 1

## INTRODUCTION

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*Introductory remarks by Vice President Olle Schmidt, ELF, at the Conference "Smarty Solutions for Digital Economy in South East Europe" in Sofia, Bulgaria, June 5, 2018.*



Dear Liberal Friends,

The digital transformation is not happening at the same pace across countries, companies and households, and this translates into unequal opportunities, stated the OECD Secretary General presenting an OECD report last year. We must empower our citizens and business for the digital world by providing everyone with affordable access to digital tools and the skills to use them fully, he added.

I fully agree with the conclusions of the OECD.

As liberals I think we are the ones that can push the development in the right direction, politically and economically.

Politically we need to stimulate research and create an infrastructure for an equal access to these new technologies. The political system has also to be conscious of the misuse of internet and protecting consumers by

firm legislation concerning integrity and on-line crime.

Economically we have to boost these parts of the economy without being afraid of losing traditional jobs.

Indirectly the digitalization also demands a new legislation related global cross border cooperation for instance related to cooperates taxes.

These rapid shifts create social uncertainty and a fear of losing jobs.

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## INTRODUCTION

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Therefore, there is a need of a sustainable social welfare system to cover for those job losses. In this context it is also worth mentioning AI, Artificial Intelligence, and its challenges.

The digital economy is transforming the way we interact, consume and do business.

Digital companies are growing far faster than the economy at large, and this trend is set to continue, the Commission states. Digital technologies bring many benefits to society and, from a tax perspective, they create opportunities for tax administrations and offer solutions to reduce administrative burdens, facilitate collaborations between tax authorities as well as addressing tax evasion.

But digitalization is also putting pressure on the international taxation system, as business models change.

In my own country we have always been keen in adopting new technical achievements.

One can say that the Swedish consumer is driving the digitalization of the economy and is now rapidly becoming familiar with using mobile devices to access the internet and make on line transactions.

The Swedish Government has presented a strategy for how digital policy will contribute to competitiveness, full employment, and economic, social and environmentally sustainable development. The strategy outlines the focus of the Government's digital policy. The objective is for Sweden to become the world leader in harnessing the opportunities of digital transformation.

– The industrial revolution changed the world. The ongoing digital transformation of society is a contemporary revolution of the same order. Clear political and state leadership will be crucial for creating the necessary pressure for change. This strategy is a whole-of-government commitment to leading the change, underlined the Minister for Digital Development.

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Digital Strategy – five goals

Digital skills – Everyone in Sweden will be able to develop and use their digital skills.

Digital security – Sweden will provide the best conditions for securely taking part in, taking responsibility for and building trust in the digital society.

Digital innovation – Sweden will provide the best conditions to ensure that digitally driven innovations are developed, disseminated and used.

Digital leadership – In Sweden, the digital transformation will promote relevant, targeted and legally sound efficiency improvements.

Digital infrastructure – All of Sweden should have access to infrastructure that provides high-speed broadband and reliable mobile services, and that supports the digital transformation.

– Jobs will disappear. But continuing to produce and work as we have done is not realistic and trying to slow down development by introducing an innovation-impeding robot tax is not an option. Instead, we want to be at the forefront of development. This will enable us to influence how technology changes our society. We will see a whole range of new jobs and activities, said the Green Minister.

My Liberal vision:

Today Sweden has a strong position in the IT area, but many people living in rural and sparsely populated areas still do not have broadband or digital connectivity. The State should in some cases be able to co-finance broadband expansion and the companies should be able to work over municipality boundaries. Digital public services should be developed, and computer literacy should be expanded school. The new technology requires the copyright law to be modernized.

A Liberal Policy

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The state will continue to co-finance broadband expansion and digital connectivity across the country

Disconnect the copper network only when broadband and digital connectivity are expanded

IT and computer literacy should have a natural role in the school

A new copyright law is needed for a better balance between the interests of the copyright owner and public interest. IT and computers increase the individual's freedom, simplify everyday life and tie people together.

People's freedom and prosperity benefit from good communication. We live in the age of digitization, a revolutionary time where constant technological development has become a part of every person's everyday life. It is particularly important to enable better IT capabilities for people outside cities and in rural areas. To compensate for high development costs in these areas, the state will be able to co-finance the expansion if necessary.

Administrative limits should not hamper construction of necessary infrastructure.

As more public services become digital, inhabitants in the sparse parts of the country must be given the opportunity to step on it digital train. Strategies are needed for how telecommunications and communications networks can support future service needs transport and communication.

Digital services can be expanded when more and more citizens have access to broadband and digital connectivity. It does not affect just the opportunity to communicate, socialize and enjoy entertainment, but also the ability to run companies across the country. More and more welfare services are also developed based on digital opportunities. Partly to handle the private economy and work but also to take part of the future's healthcare and care.

Having basic knowledge of programming contributes to the understanding of how all digital technology and, not least, the entire

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## INTRODUCTION

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internet works and is structured. In order for this to be a part of the school, competence development of the teachers is required. An opportunity to:

Increasing the teachers' digital skills is to carry out an education in special projects. The samples should be digitized and corrected externally to increase the equivalence.

New technology places new demands on copyright. I think that a new and modern copyright law needs a better balance between the interests of the copyright owner and the public interest.

To conclude:

The step into the digital world is as important as the industrial revolution in the 19th century.

Your Smartphone can be compared to Spinning Jenny!

The IT-revolution is here to stay.

Thanks!

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## INTRODUCTION

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*Introductory remarks by Liliana Pavlova,  
Minister for the Bulgarian Presidency of the EU  
at the Conference "Smarty Solutions for Digital  
Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



Your Majesty,

Dear Mr. Schmidt,

Dear Prof. Gerdjikov,

Ladies and gentlemen,

For five months now, Bulgaria has a very responsible role - presiding over the Council of the European Union. The whole period is filled with many important initiatives and it is a unique chance for our country to put key themes on the European agenda. Political relations are complex, many challenges face Europe and the world.

The summits in Sofia on May 16th with EU leaders and on May 17th with leaders of the Western Balkans and financial partners and donors have remained in history with two important accents.

One is that we have regained the focus on the European perspective for the Western Balkans. We talked about connectivity.

Connectivity, which is digital, transport, social, infrastructure and education, creates economic growth and jobs.

We talked about building regional economic cooperation, increasing investment and raising the standard of living of people in the South East region.

The other focus was the achievement of communication, communication between the leaders of all countries and the European institutions, conducting talks and negotiations. (for example, the meeting between Tsipras and Zaev)

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Yes, each country has its own national political interests, but it was time to think and act for Europe's united future. And we did it!

That is why the motto of the Bulgarian Presidency is Unity is making the power.

These facts are a political breakthrough that imposed Bulgaria as President of the EU Council, a presidency, to which various analysts were skeptical. Today's conference has gathered the political and academic elites with liberal beliefs on smart solutions for the digital economy.

This topic is part of the top priority of the Bulgarian Presidency.

Innovations, the search for new and more advanced technologies, creativity and "smart" solutions flood us daily, hourly. And we politicians had to react adequately.

Our country has traditionally been linked to digitization, innovation and the development of new technologies.

Among our inventions are the computer created by John Atanassov, we have discovered the sixth heart tone, answering machine, electronic wristwatch, even a tablet for the blind.

The Bulgarian Presidency is aware of its important role and attaches particular importance to digitalization, because it is the biggest challenge, digitalization offers the greatest opportunities but also presents serious risks.

The sphere of the high-tech economy is developing rapidly, and Bozhidar Danev (who we lost recently) has previously said, "the digital revolution has a serious impact on the labor market."

The digital economy is not a threat but an opportunity for development and cooperation.

The machine can not displace human creativity.



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## INTRODUCTION

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That is why we need to stimulate digital technology and to develop the business, the economy of the states; to encourage entrepreneurial initiatives and young people to find a livelihood in their homeland to create jobs. Digitalization is a strategic opportunity for the future of Europe.

The digital economy is growing 7 times faster than the real economy, but how do we benefit from it?

For nearly 90% of jobs, digital skills will be required, and by 2030 it is expected to reach 95%.

Only 59% of European citizens have access to 4G networks and the tendency is to increase their number.

Over 11 billion euros savings have been calculated for consumers when shopping online.

And small and medium businesses can save 9,000 euros on the market for legal and translation services if they use digital tools.

An interesting fact is also that in the year 2017 95% of the enterprises in Bulgaria consider the speed of the fixed internet connection to be sufficient compared to France and Austria (both 79%) and especially Germany (73%).

5.6% of Bulgaria's GDP is formed by information technology. In 2017 our country ranks 27th in the world in the Digital Economy and Society Index (DESI). During these 5 months, the Bulgarian Presidency is actively working to complete all the dossiers in the Digital Single Market and in the Digital Europe.

This is a period of negotiations, effort, sleepless nights, no days off in Brussels and Sofia. I will mention only a few of the key dossiers on which we have achieved, such as the Electronic Communications Code, known as BEREC (European Electronic Communications Regulatory Authority,

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the Single Digital Market Copyright Directive and the Regulation on Online Transmission and Retransmission, the Online Regulation European citizens' access to news, cultural, educational programs, the cyber security package, personal data protection and e-privacy, the launch of the European Supercomputer (EuroHPC) project, the Single Digital Portal, the Anti-Fraud Directive for Online Payments, the Gambling Regulation when shopping online.

The Estonian Presidency has helped a great deal in this area, and we hope the Austrian Presidency will take the lead.

We must work and invest now with the realization that we will capitalize in years.

At an informal dinner in Sofia on 16 May, EU leaders reaffirmed and united on the future of digital politics and innovation.

The European Commission has proposed a 64% increase in the EU budget for the next programming period 2021-2027 for research, innovation and digitization investments. Our national goal is with this funding to build an integrated European digitized hub in the Balkans.

Last week, Varna was officially declared the first digital innovation hub in the country to operate on a one-stop-shop and would give customers access to new technologies and financial mechanisms to support and network. Separately, in the sphere of the economy, we lay the foundations of a comprehensive long-term Industrial Strategy. Our vision for building this Strategy is to improve innovation, access to finance for small and medium-sized enterprises, access to third-country markets.

The Bulgarian Presidency will continue to work actively in the remaining one month and then as a Member State to build a strong, digital and united Europe!

Thank you for your attention!

# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

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*Presentation by Stjepan Čuraj, Member of Parliament,  
Croatia  
at the Conference "Smarty Solutions for Digital  
Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



# THE ROLE OF INSTITUTIONAL FRAMEWORK FOR BUILDING DIGITAL CITIES OF FUTURE (IN SEE)

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=IF FOR DC (in SEE)

Stjepan Čuraj, MP

# IF FOR DC

## TABLE OF CONTENTS

- Digital economy in Croatia – how we stand?
- Institutional framework of Croatia
- Case study Osijek
- Conclusion and discussion



REPUBLIKA HRVATSKA  
Središnji državni ured za  
razvoj digitalnog društva

OSIJEK  
SOFTWARE  
{ITY\_



# DIGITAL ECONOMY IN CROATIA – HOW WE STAND?

**The Digital Economy and Society Index (DESI) – 2018 (22<sup>th</sup><24<sup>th</sup> in DESI 2017)**

- Accumulated score of 46,7– Croats are advanced users of the web and croatian business are skillful users of digital technologies

**1. Connectivity – Broadband market developments in the EU (27<sup>th</sup><28<sup>th</sup> in DESI 2017)**

- Croatia did not make significant progress in this area compared to 2017, although it improved its overall score. On fixed broadband coverage of households (99 %), Croatia performs above the EU average (97 %) which is the category where the highest improvement over the last year was achieved. However, fast and ultrafast broadband coverage remain very weak.

**2. Human Capital – Digital Inclusion and Skills (18<sup>th</sup><19<sup>th</sup> in DESI 2017)**

- Croatia is making good progress on human capital. The number of ICT specialists increased from 2.7 % to 3.3 % and the share of graduates in Science, Technology, Engineering and Mathematics (STEM) in the 20-29 years old cohort went up as well, reaching 1.7 %.
- A number of reforms have been prepared in the context of the Strategy for Education, Science and Technology and the associated curricular reform (obligatory ICT classes in 5<sup>th</sup> and 6<sup>th</sup> grade in primary schools and participation of schools in the experimental stage of curricular reform)

# DIGITAL ECONOMY IN CROATIA – HOW WE STAND?

## 3. Use of Internet Services (11th<14th in DESI 2017)

- This continues to be the dimension where Croatia scores best and well above the EU average. Croatian Internet users read news online (91%, 2nd in Europe), listen to music, watch videos and play games online, watch films and make video calls over the Internet. They use social networks and online banking and use Internet for online shopping.

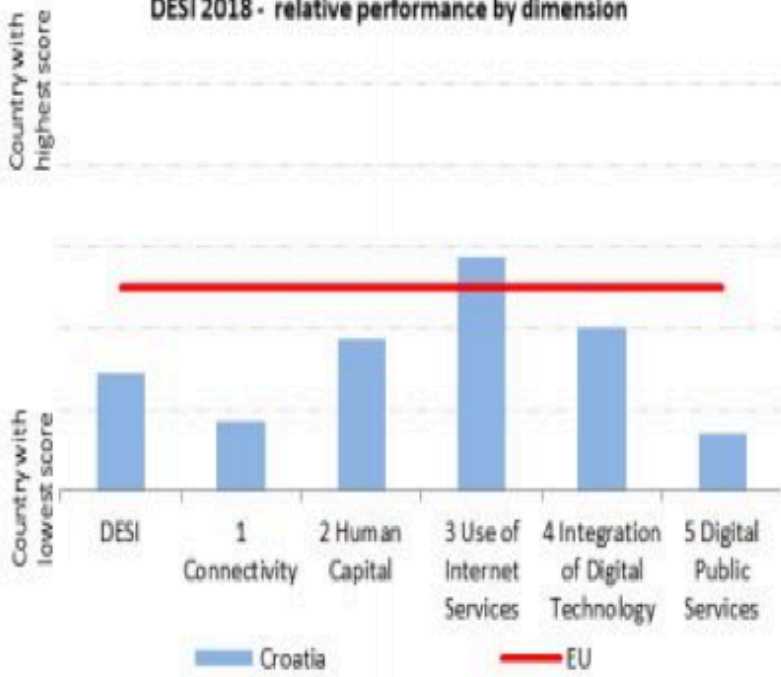
## 4. Integration of digital Technology (21st<17th in DESI 2017)

- Over the last year, Croatia made slow progress on the Integration of Digital Technology by businesses, and fell back from rank 17 to rank 21 because other countries were progressing faster. Croatian enterprises are above average users of cloud technologies and they take advantage of the possibilities offered by online commerce: 17.1% of SMEs sell online, similar to the EU average of 17.2 %. E-Invoices are slowly gaining popularity, while 17 % of enterprises have high levels of Digital Intensity (compared to the EU average of 21.5 %)

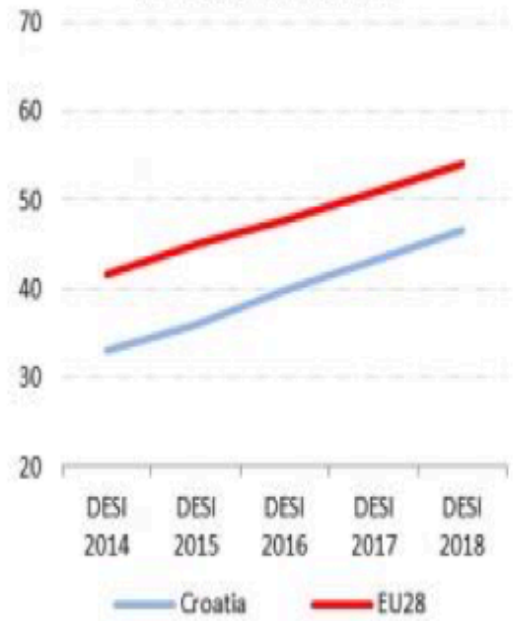
## 5. Digital Public Services (25th<25th in DESI 2017)

- At 66 %, the number of eGovernment users is above the EU average. However, there has been no progress with the delivery of services and services for businesses. On Open Data, Croatia continued to make considerable progress over the last year and still scores slightly above the European average. As to eHealth Services, Croatia is performing well and ranks 10th among EU Member States when it comes to people who used health and care services provided online.

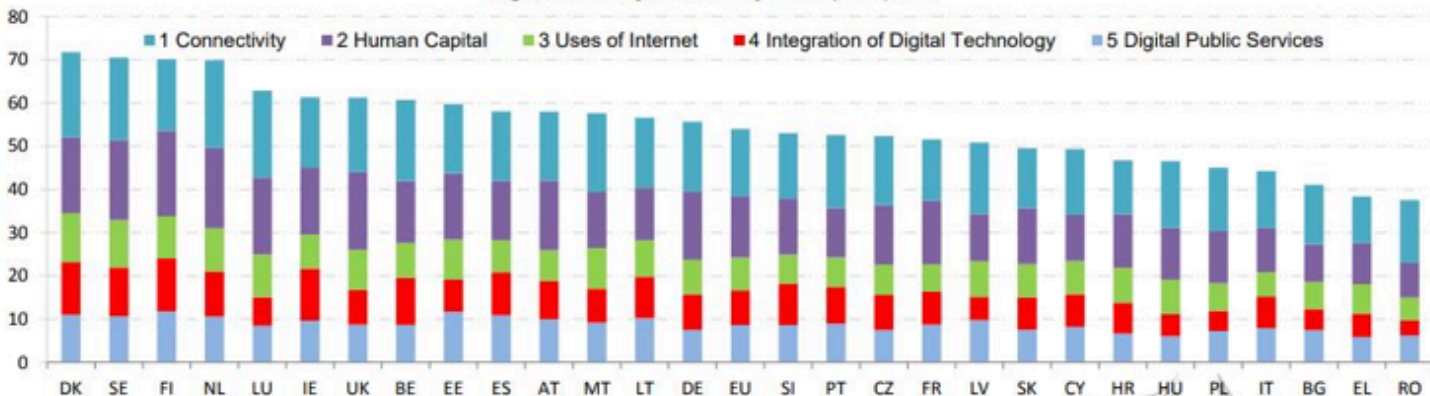
**DESI 2018 - relative performance by dimension**



**DESI - evolution over time**



**Digital Economy and Society Index (DESI) 2018**



Source: DESI 2018, European Commission

**DESI Report 2018 – Connectivity**





# INSTITUTIONAL FRAMEWORK OF CROATIA





# CENTRAL OFFICE FOR THE DEVELOPMENT OF THE DIGITAL SOCIETY ~ SCOPE OF WORK ~

- Takes part in forming and monitoring of legislation implementation and other legislation in field of digital infrastructure and public digital services
- Takes part in promoting and systematical improvement of digital infrastructure in Croatia as well as improving the public access to web services and contents
- Coordination of development and implementation of ICT in public digital services
- Suggests the Strategy for popularisation of informatics literacy in Croatia to the Government
- Defines activities and methodology for tracking the development and evaluation of efficiency of policies for development of digital societies
- Manages and offers expert and administrative support to the Council on State Information Infrastructure, takes part in preparation of project documents for application to the EU funds and programmes
- Ensures unique and permeant availability, and re-use of public state documents and information to all users, under same conditions and fairly
- Professional work in establishing and managing digital **Central Catalogue of Official Documents of the Republic of Croatia** and data input to Central Government Portal – part **My Administration** and **Open Data portal**.
- And other work prescribed by special Acts



## Središnji katalog službenih dokumenata RH

**Pravni propisi**

Međunarodni ugovori

Službena glasila tijela  
lokalne samouprave

Dokumenti i  
publikacije

Pojmovnik EUROVOG

Opis zbirke



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Što je Otvorena Vlada?



[Pogledajte više >](#)

Statistički pokazatelji



[Pogledajte više >](#)

## Moja uprava

### Zdravlje

Zdravstveno osiguranje, prava iz obveznog osiguranja, pravo na povrat troškova, zdravlje na radu, privremena nesposobnost za rad...

### Rad

Traženje posla, radni odnos, prekid radnog odnosa, mirovine, nezaposleni, međuljudski odnosi...

### Državljanstvo i isprave

Hrvatsko državljanstvo, isprave, potvrde i uvjerenja

### Pravna država i sigurnost

Pravna zaštita, prava potrošača, prevencija i prijava kaznenog djela, žrtve zločina i nestale osobe, javni red i mir, službe za zaštitu i spašavanje...

### Promet i vozila

Registracija, dozvole za upravljanje vozilima, sigurnost na cesti, kupnja i prodaja vozila, cestarine

### Financije i porezi

Porezi i prijava poreza, plaćanje internetom, upravljanje dugovima, štednja i ulaganje, osiguranja

### Obitelj i život

Brak i izvanbračna zajednica, roditeljstvo, pomoć i savjetovanje, socijalna skrb, treća dob, smrt i nasljeđivanje, prava osoba s invaliditetom

### Hrvatski branitelji

Prava branitelja i obitelji, stambeno zbrinjavanje, olakšice i subvencije, zapošljavanje, zdravlje i invalidi, centri za pomoć, udruge i okupljanje

### Obrazovanje

Predškolski odgoj, osnovno, srednje i visoko obrazovanje, e-Usluge...

### Stanovanje i okoliš

Izgradnja i obnova kuće, kupnja, prodaja i najam nekretnine, vlasnička prava, područja od posebne državne skrbi, održivo gospodarenje otpadom...

### Poslovanje

Pokretanje poslovanja, potpore poslodavcima, poljoprivreda, turizam, razvoj otoka, zaštita intelektualnog vlasništva, poslovni prostori

### Aktivno građanstvo i slobodno vrijeme

Udruge, volontiranje, na putovanju, šport, građani u političkom životu, kulturna događanja, u prirodi



# CASE STUDY OSIJEK

## OSIJEK SOFTWARE WARE CITY

A PLACE FOR YOU TO DEVELOP

# NON-GOVERNMENTAL ORGANIZATIONS

- Osijek Software City (NGO)
- Beginning in 2012 as project (2013 registered as Association)
- Members: Local IT Companies (>30)
- Goals:
  - Increase attractiveness of working as developer in Osijek
  - Increase competitiveness of programmers on the market (Education seminars)
  - Support the ICT sector (>100 registered ICT companies in Osijek)
- Role: Expert advisor to City of Osijek
  - Coworking space (30 work units for rent) in Osijek Business Incubator financed by the City of Osijek

# PRIVATE SECTOR – „FOCUSED TO FUTURE”

- New Investment - Ericsson Nikola Tesla
- Goal: Developing new 5G technology
- R&D center (employs up to 20 young scientists)
- Josip Juraj Strossmayer University in Osijek is the main partner in science part of the project
  - University functions as a „pool” from which future employees will be hired
  - **Potential for applying for EU funds**
  - Will increase competitiveness of Students on the market

„...Result of excellent combination and cooperation between public, private and science sector ... We expect that in next several years Ericsson Nikola Tesla will employ from 200 to 300 people in Osijek. We believe that future will bring more projects like this one”, Ivan Vrkić, Mayor of Osijek



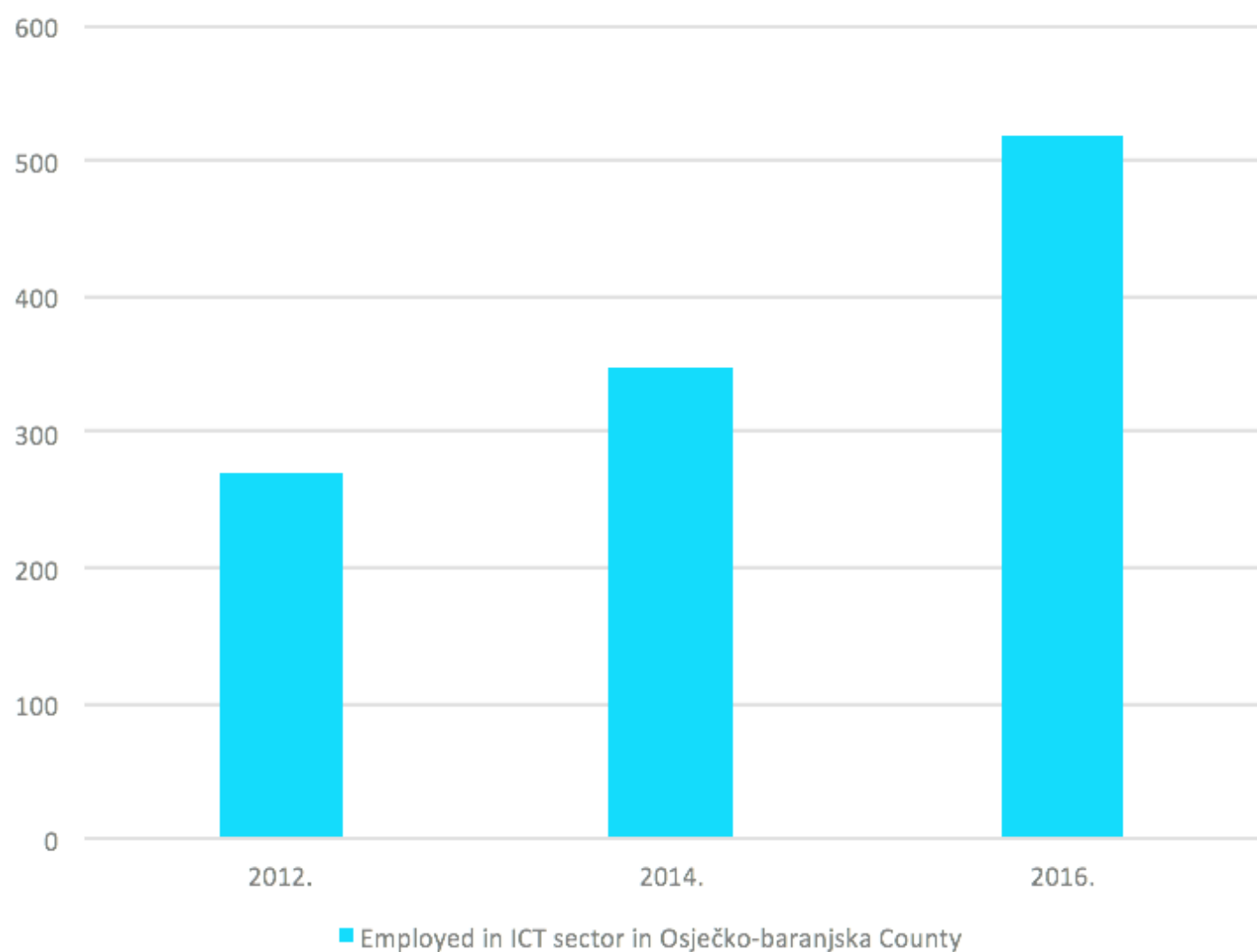
# PUBLIC SECTOR

## Role of City of Osijek:

- Attraction of new Investments (Ericsson Nikola Tesla)
- Project Wi-Fi Osijek
- Development of Technology-development center in Osijek
- IT park and IT business center



## Employed in ICT sector in Osječko-baranjska County



# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

*Remarks by Lubomir Minchev, Founder and CEO, Telelink at the Conference "Smarty Solutions for Digital Economy in South East Europe" in Sofia, Bulgaria, June 5, 2018.*



We start with the word "transformation". Digital transformation. This means change. That is, change is the most unnatural condition. That is, we have to start thinking differently. To think not only that change is inevitable and it is actually not only happening but accelerating. Society is changing at an accelerated pace. And here I will quote a very old scholar who deals with the evolution saying that not the strongest or the smartest will survive, but the most adaptive. And I think by listening to the examples that our colleague from Croatia gave, we have to realize that we have a small economy in Bulgaria, yet one of the large ones in the European Union. If we go back to Mrs Pavlova's words that we are stronger together, this is really the most important thing that I want to talk about thinking about how we can work together as Europeans. In the EU, in the context of a united Europe, the challenge is that many times China even overtakes us as a country that transforms knowledge into economic means. In fact, in the knowledge economy in which we live, the interesting thing is that it is not a zero-sum game, that is, my profit is not your loss, which makes it more possible for us to look for a way to collaborate. The most important thing I want to talk about is the future of private and public investment as it is what was given as an example from Croatia. Pooling the efforts of educational institutions, the government and the private sector. This example gives exactly what is a model we should seek to replicate, to learn from these examples given that Croatia has entered the EU much later than Bulgaria and Romania, has managed to overtake us by using its digital skills and digital means. Digitalization or

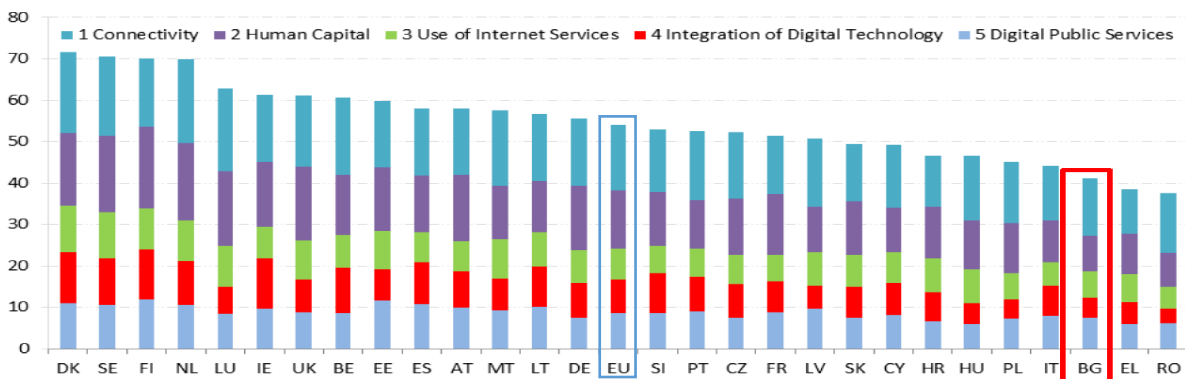
# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

digitization is ultimately a tool. How will human capital be able to use this tool to turn it into economic elements that will bring us more goods.

Investments in education. Change in many sectors as well as in education is necessary for this adaptation to take place. The second thing I want to emphasize is the word collaboration. This is the meaning of a united Europe and between ourselves, it is the point of seeking the path between the non-governmental sector, the government, the business and the educational institutions to create a higher value in the products.

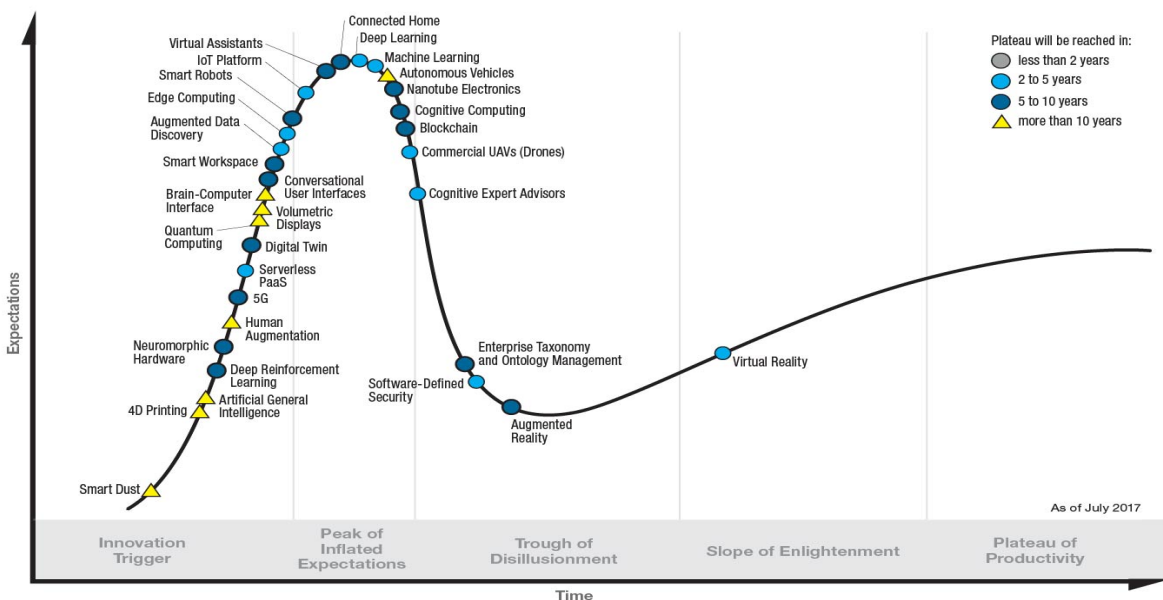
In this index I have outlined where Bulgaria is. We were in the second last place. I will not analyze all 5 indicators, I will just mention that one of the reasons we are lagging behind is the use of digitization in the public sector, we are also lagging behind in human capital. That is, we have internet that is used for entertainment. If we want to use these tools for productivity, we need to rethink how we teach our children, what we show them, what digital skills we teach them. We will not all be able to invest in all technologies. Even in the United States and China they fail, but they still find the means and united Europe really has to think about how we can find specialization.



# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

This is the curve of expectations. Some technologies create extremely high expectations. I will give an example that might provide some clarity and explain why I use this graph. For example, artificial intelligence, machine learning. Very few countries have been able to afford in the last 30 years to continue investing money in order to be among the leaders. I mean that we, as a small economy, have to choose the technologies in which we can afford to invest and at the same time aim at this orchestrated EU investment so that we could be competitive through specialization and collaboration.



Some of our Digital Commissioner's Digital Spectrum initiatives, the first digital dividend at 700 and 800 MHz, the second digital dividend in 600 and 400 MHz. These are efforts that can achieve a result that we all aspire to. Without using extremely fast connectivity, many of the future

# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

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applications will not be able to work. Ultimately, digitalization is a tool and if it cannot work with it, we have not realized the goals we set ourselves.

As a company to put a context to what we are trying to do, we try to replicate some of the technologies we already see that can be accessed and try to create our customers the opportunity to benefit from them, to make them more productive. The main ones are cloud technologies, cyber security, internet of things and augmented reality, which I think will be a major tool for all kinds of operational activities, including in construction. Virtual reality will be a major learning tool. We try to see how we can use them in the right direction rather than just use them as entertainment. I think smart cities will be an inevitable part of our society. Cities represent over 85% of the world's economic activity overall. We need to think about the technologies we can adapt, those that we can develop quickly and which can give a very good return, because as long as a person can save time from travel and from standing in traffic or from other administrative challenges, they can use this time on productivity or even for leisure.

Let's hope that the Bulgarian government will continue with its vision and that digital adhesion will be not only on the European level, but it will be embraced in Bulgaria.

Thank you!

# Chapter 2

## PRIVATE AND PUBLIC INVESTMENT IN THE DIGITAL ERA -THE BEST STRATEGY

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*Remarks by Daniel Kaddik, Project Director, Friedrich Naumann Foundation Southeast Europe at the Conference "Smarty Solutions for Digital Economy in South East Europe" in Sofia, Bulgaria, June 5, 2018.*



Dear Prime Minister, ladies and gentlemen, dear friends,

Let me try to give you my speech in English instead of Bulgarian because, otherwise, it might take a little bit longer for me, trying to search for the words that I want to give you.

I will do two things. Number one, I will go 'old school' on you. I think a castle like this is a very good environment for that, meaning that I don't have a PowerPoint presentation for you. I don't believe in PowerPoint. And second, I will read it, more or less, to you and try to be as concise and entertaining with that as possible. I hope you bear with me for the time being. And I am also trying something else and that is: I am trying to stick to the topic of today's panel, which was named "Private and public investment in the digital era - the best strategy".

It should raise some suspicion if someone tries to sell you the best strategy because that does not work. If you are selling the best strategy, it is not the best strategy anymore because everyone would use it and therefore your strategy is obsolete at the end of the day. We also cannot talk about the best strategy because we need to factor in different realities. Germany is a completely different story from Bulgaria, which is a completely different story from Sweden, or even my beloved Estonia, where I am also an e-resident.

But it is still important to both acknowledge that change is happening and

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to adapt to the change. This goes for both the public and private sectors. And, yes, change is the natural state of being, being it evolution or businesses.

The only difference now is that change is happening at an unprecedented speed. Therefore, making strategies to adapt to it is becoming ever harder.

So, where does the EU currently stand when it comes to fulfilling its digital potential? Well, it's not so good. According to surveys in the EU, only some 12% of the digital potential is actually used. My own country, Germany, only uses 10%. Just to put that into perspective, if Germany fulfilled its digital potential, it could grow its economy by 500 billion euros annually until 2025. The digital single market in the EU alone has the potential of 450 billion euros a year. Still, an untapped potential.

Why? Mostly because of regulation the very strong danger of focusing on start-ups only. When we talk about digitalisation, this is always what we talk about: "Have you heard about this new app, have you heard about that programme?" No, that's not what it's all about. If you look at companies, taking the German example again, companies that embrace digitalisation in the workplace have 27% higher productivity. But that also has some other consequences – the workforce becomes partially obsolete. And that is another challenge that has to be factored in strategies, especially by the public sector. If we focus all our attention on the private sector, why do companies digitalise and how do they use that? Number one, they create alternatives to scarce, precious resources - time being one such thing. But also natural resources that can be replaced via new technological means. Computer technology and biotechnology allow you to do completely new things. For instance, there is a heavy

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investment in alternatives to meat - meatless meat, so to speak - which is only happening due to the enormous calculating power of ever stronger computers plus advances in biotechnology.

Still apps, programmes and services are also a completely untapped source of potential, especially here in Bulgaria. The increase in immaterial goods, whether apps, music, arts, or literature that are being distributed via digital means, is the result of heavily investing in them. A higher degree of the division of labour is what's actually at the core of all of that. Why do we have all of that and why do we use it? Because it is an even finer degree of the division of labour that our economies are based on. But it's also the replacement of labour, and that is something (and we mentioned education previously) that we should talk more about and that I will touch upon later today.

But we also see, and that is also part of the ever more rapid changes, that these new technologies, especially in the digital sphere, rely more on trial and error. I don't know if you have read the news in recent days about the Cayman Islands start-up Bit One raising 4 billion dollars and being the highest initial public offering this year. And the funny thing is that they don't even have a product yet. They say that they will have a new cryptocurrency, but no one knows if it's actually working. So, this 'trial and error' becomes ever more rapid because people see there might be a potential revenue yield, but it's not guaranteed. You see this massive investment in cryptocurrencies at the moment. It is not clear whether this will yield results, it is actually unclear where it will go, but people are investing in that rather heavily at the moment and it could be another bubble that is being created there. Long story short, trend cycles become ever shorter. Product lifecycles become ever shorter. Therefore, you need a higher degree of division of labour. Therefore, you have a higher degree



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of change potential. So, at the end of the day, I can only tell you if I had the best strategy for how to overcome that, I would not be standing here today. I would both be making loads of money and sitting in Silicon Valley.

Let's take our eyes over to the public sphere now. Public investment in Europe has significantly declined since the crisis, although developments might vary in the different countries. This has led to an effect of stimulating public investment in an environment of low borrowing cost for governments, which is quite dangerous, and I will come back to that a little bit later. So, the literature suggests that the increase in public investment has a positive demand effect and can contribute to the economy's potential output by increasing the stock of public capital. And Mr Karolev already starts to shiver when I say something like that. It follows the classic Keynesian AD-AS model - aggregated demand and aggregated supply. And according to Keynes, that means that the investment rate in the economy is mainly influenced by two factors - marginal efficiency of capital and rate of interest. That means that if we decline the rate of interest, we have an automatic increase in investment. Translated to politics - that means let's spend more. That is very much a double-edged sword, as we will see in a bit.

We have investment costs for governments of close to zero, as the ECB has the lowest interest rate for years and years. We have the EFSI Juncker Plan with the planned 350 billion Euros, we have the national investment plans, we have the European Central Bank's (ECB) liquidity flood, but this is mostly and very often throwing bad money after good. Just take into consideration the 2015 discussion about creating a European Google. Central planning always results in running after trends. You see something that works, the public sector wants to invest money in that and, meanwhile, especially with digitalisation, the economy and businesses

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are lightyears ahead. This is almost a textbook example of throwing good money after bad, is create bubbles or monopolies. And it stifles growth by draining money from successful businesses and giving it to ill-performers. And why is that? The answer lies in the issue of responsibility. If you compare private and public investment, you also have to ask the question: Who eventually carries the risk? There is a very nice analogy that was made by Milton Friedman in the 1970s. He gives the example of using someone else's credit card to buy dinner or a gift for your wife or your spouse - you don't care really how much that costs, you just want to give them a nice present. It gets even worse if you take Zinaida Zaltanova's credit card and just pick a random person in the audience and just buy something - you don't know what she wants to spend her money on and you don't know what the person in the audience wants to have. So, you have a complete mismatch and that is both a general problem and an integral problem of public spending and public investment. Therefore, and I think my libertarian friends, especially in the middle of the room, know that sentence by heart, the most dangerous words in the English language are: "I am from the government and I am here to help".

That is something you have to keep in mind, especially as these new economic models and increasing digitalisation are Schumpeter's creative destruction on speed. Creative destruction is happening ever more rapidly. This also means that intervention and protectionism have a negative effect on speed. If you start stifling growth in a growing sector now, that will have a magnified long-term negative outcome.

Let's take, and I will take that as my last example, e-scooters. Everywhere in Europe, you see now e-scooters popping up. In Bucharest, I have seen them a lot, also in Paris, or even Sofia. Well, in Germany you don't see them. Why? Because they are not in alignment with the German traffic

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code. The German traffic code does not know how to handle them, so therefore, they are forbidden. That has a stifling effect on the expanding market of e-scooters, for instance, and start-ups in that field in Germany cannot flourish, so they go somewhere else. Let's take the case of Uber in Bulgaria. Uber is officially forbidden here. Why? Because some taxi owners didn't want them so much. And we have hefty fines, therefore, taxi service quality is not as high as it could be here. So, the consumer loses at the end of the day.

So, what is left for public investment? Infrastructure. Of course, the question of creating a digital infrastructure as a job for the state at all might be raised here, and the answer will be completely different if you go to California, China or Germany, for that matter. China and Saudi Arabia have programs in robotics and artificial intelligence, for instance, but they rely mostly upon standing on the shoulders of the giants of invention that have been made in other countries and just further developing, and they are only now getting into the proper R&D sphere.

We have good examples in Europe. Take my e-residency in Estonia. I can create a company in 10 minutes in Estonia. And it's 10 minutes only if I am slow because it allows for me to do it a lot faster. We have the smart cities that you already mentioned that offer great examples. But we don't have to go that far or so abstract. We just have to look at the Doing Business Report, for instance and there, especially for Bulgaria, we can take a lot of lessons. Starting a business is OK here. Dealing with construction permits - not so much. Getting electricity in Bulgaria might be a bit of a problem here and there. Registering a property, getting a loan for opening a company, protecting minority investors, paying taxes. Trading across borders is fine, enforcing contracts is a problem and resolving insolvency or dissolving your company is virtually impossible here on the market, and

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then there is the labour market regulation. So, translated to Bulgaria, that means when you come to the solution, and that is my final point, to where the public sector can and needs to invest, especially in Bulgaria. That is first and foremost education, in both schools and universities. And not the classic way, where we sit 30 students in a room and have one teacher telling them something, but rather we should have an enlightened approach to education in a Kantian sense. The Kantian definition of enlightenment, making use of your own mind. Something, in that direction, is desperately needed. In the last PISA survey, Bulgaria scored 45th out of 72 when 9th graders were tested. Almost 38% of students in Bulgaria at that age do not meet the required level of functional literacy in science. That means that they cannot comprehend the material, read charts, or make headway in those subjects. 41.5% of 9th graders are functionally illiterate in this country. 42% have the same issue in math. So that is something where the state needs to invest and to harness the potential of digitalisation.

The labour market needs to adapt. We need labour reforms. 1986 is when the labour code of Bulgaria was written and has only been amended a couple of times since. Still, I think most of you remember what 1986 was like here in the country and how the labour code was written.

Investment in physical and digital infrastructure is very much needed, and regulation on starting a business does not need to be changed. Regulations on how to maintain or close a business need to be changed. We need a change of the red tape here in this country.

And, last but not least, we need sound institutions. If you do not have sound institutions here in the country, we will not see a massive increase in digital infrastructure, so we will not see an increase in digital companies. We have the start-ups here in Sofia in the co-working spaces,

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but what do they do? The mostly bring their company in, market-ready, then launch it in a third country – the UK, Germany or others - and then shift the company, not the back end, to the third country. So, the added value is created somewhere else and that is dangerous. Also, we are talking about so many digital jobs here in Bulgaria. What are those digital jobs? Call centres. These are not digital jobs. These are digitalised jobs and they can easily be transferred to another country again. So, this is not an investment in the future and therefore we need sound institutions so that these companies that are created here actually stay here in the market. We can have some joint ventures, especially an investment from both sides, when it comes to education. We have been talking for years and years about dual education here in Bulgaria, yet still, nothing has happened. And that is a responsibility of the companies, as well: investing in the future of the labour force so they can actually stay here, grow their business, create more jobs.

And one last thing before I go off stage. I find it very funny when politicians from Europe talk about shaming Trump for raising tariffs. The European Union is the most protectionist system in the world. Why is everybody talking about raising tariffs on Mr Trump and on the United States instead of suggesting that he revives TTIP, so he does not have such a bad deal anymore? A lot of the tariffs on the European side are already higher than on the US side. If the European Union would reduce its tariffs on the average consumer, prices for food would be reduced by 20% overall in Europe and that is something that needs to be taken into account. But I understand why that is not being done. Because most of the EU budget comes from where? Tariffs. So, therefore, I think we should be a bit more cautious and, instead of falling into the trap of following Mr Trump's speeches, rather embrace TTIP and rather go for more trade than for less trade, especially in times when we need to rely on our partners in the digital era.

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## NEW VALUES FOR DIGITAL BUSINESS MODELS. SHARING AND PLATFORMS.

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*Remarks by Ilija Lingorski, Chief Economist,  
Bulgarian Development Bank  
at the Conference "Smarty Solutions for  
Digital Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



Thanks for the invitation and the opportunity to participate with ideas and questions in this discussion. I am very intrigued by the interesting messages in the speeches of Minister Pavlova and the participants so far, and especially from the presented point of view of the business sector. I take the first panel as a bridge to the discussion that is ahead of us. Integrating and uniting the various stakeholders' efforts in the digital services and economy sector is particularly important. It is in this area of economic development that we can expect some of the most significant problems and challenges over the next decade. And as we all know, the biggest problems are our greatest opportunities.

The competitive environment for the digital market and e-commerce in the world is developing in a specific way, much more dynamic than anything known from the era of the Industrial Revolution. According to Eurostat, 66% of consumers in the EU shop online, with commodities and sports goods being the main products. These 66% of European consumers now form only 2% of total EU trade through online transactions. I recently had the privilege of visiting China and gaining direct insight into the development of the digital sector and trade.

Last year, 17% of China's sales turnover was made over the Internet, with the forecast being to reach 25% until 2020. Chinese consumers and suppliers are forming a very large online internal market that is to a large extent more integrated and developed in some areas than we do in

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Europe. This stems from the pursuit of efficiency and economy in logistics and distribution as well as geographic and demographic challenges.

Traditionally in Europe, classic commercial infrastructure and access are some of the world's most advanced, with objective challenges and constraints practically overcome in most of the continent. The question is "Where are the niches for smart solutions?", as our hosts have very well titled today's conference. Very often when talking about infrastructure and infrastructure investment, first of all, our vision is road and transport infrastructure. But if we look at what is happening in recent years, combined with the EU's development priorities, we will see a wider picture. Infrastructure is of course of the utmost importance for the connectivity, access and expansion of economic opportunities within the common market. However, it is not limited to transport and logistics. Over the past 5 years, the European Fund for Strategic Investment (EFSI) has not accidentally placed a priority on the development of digital infrastructure. If until last year EFSI realized and accounted for over 270 billion investments in various projects - mainly in small and medium-sized enterprises and in the energy sector, almost as much money was devoted to digital infrastructure and the development of digital connectivity. One of the current topics today is the next generation of digital connectivity and resp. 5G networks. Their development can be sophisticated and planned at a central European level. Realistically, however, it happens first within urban concentration and economy. One example: the pilot projects currently planned and implemented in some cities in the Netherlands are paradoxically at first glance but quite logically motivated economically by the upcoming European Football Championship. The challenge is to find effective economic models to speed up the construction and development of 5G networks and digital connectivity in general. For such new infrastructure and capital-intensive development, a very useful,



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catalysing and complementary role could be played by the sponsoring financial institutions in the Member States, together with the municipalities, the central budget for digital services and infrastructure and the European financial instruments and financial structures as it is EFSI. More and more important will be the combined mobilization of the various resources and instruments to be able to absorb, manage and share the complex, complex risks in this area with the aim of catching up with economic development. One of the significant advantages of digital infrastructure is that its accelerated development does not necessarily imply the availability of highly developed traditional other infrastructure. Even on the contrary. Digital infrastructure offers solutions for both trade and economic exchanges, as well as for communication, where and when classical infrastructure still needs to catch up. In other words, investing in digital infrastructure and connectivity can very often lead to faster and more effective solutions to offset the difficulties faced by economic development as a result of underdeveloped classical infrastructure. This is an excellent opportunity for the EU's convergence regions, which are in the process of convergence and are aiming to accelerate their catching-up.

The evolution of transaction habits across the value chain and sourcing chain is a catalyst for the development of a digital economy in Europe. Given that 16% of the EU's trade turnover and transactions are at the business-to-business level, only 5% or less than one third of them are related to final consumption and customers through websites or mobile applications. The other 11% are through EDI (Electronic Data Interchange). These electronic data exchange systems automatically carry out transactions between individual businesses to ensure their supply and logistics. This shows that the field of development in this European economic sector is very large, due to the challenge of a traditionally more

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fragmented national market due to geographic, linguistic or other constraints. Targeted strategic investment in digital infrastructure and connectivity creates preconditions and offers solutions to overcome such fragmentation. These investments and good examples, which we will be implementing in the next 5-10 years in our region and in other member states, can set a model for expanding public-private partnerships in this area across the EU.

The second pillar, which is extremely important to finding and implementing smart solutions in our EU region, is to support innovation and start-ups. Again, the role of support financial institutions, which have already gained considerable experience in implementing support programs and providing access to finance for SMEs and start-ups, is very important here. The fascinating thing about startup and innovative startup companies in the digital sector are the accelerated cycle and resp. the shortened development process in the ecosystem of this type of entrepreneurship. The underdeveloped for historical reasons on the EU capital market can again be compensated by the role of the sponsoring financial institutions, also attracting private capital to provide new equity investment instruments and programs. This is not so much in the start-up phase, but especially in the acceleration phase, in order for them to reach more sustainable capacity and growth, to realize their potential for a further phase and more access to the whole common EU market.

In summary, smart solutions, investment in connectivity and digital infrastructure for our region combined with support for a start-up and innovative business are not just the challenge, but an opportunity that I believe will add a new catch-up time for the economies in New Europe.

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## REGULATION AND THE DIGITAL FUTURE

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*Remarks by Prof. Maria Slavova, Law Faculty  
Sofia University  
at the Conference "Smarty Solutions for  
Digital Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



And we must never forget that there are few countries that in the 150 years three times change the object and the subject of government. This is the state of tremors. This explains why changing the object and subject of ownership leads to some serious problems. Euro skeptics in Bulgaria are few, because we soon realized that the values of the former system should be replaced by the values of the European Union. The European Union does not particularly care about Bulgarian values, but we Bulgarians, and especially Bulgarian lawyers, strive to adopt European principles and include them in our laws. It is true that much of the legislative reform in Bulgaria should be seen as part of the digital economy management reform. This is the impossibility of regulating the economy (unbearable lightness of regulation, because there is no choice). There is nowhere to go. We will have to find this form.

This is a very old question, this is the question of regulating the public and private spheres. "Who is going to regulate my property?" - Nobody could, but the legislator was mistaken, accepting in 2000 an administration law, he could only adopt a law on the state administration. But the state administration in our everyday life in fact is a local administration because we are all local people and that's where things happen.

The development of the digital future is actually happening locally. We talk about smart cities. I would talk about smart villages, we are a peasant nation and thank God, because there happens the birth of the values, there is born bread, there is born the Bulgarian digital model, which, just as the model of tolerance is devious, starts from our people psychology. We have no objection to being digital, have we? However, we ask how the

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Parliament could, how could politicians, best regulate this legally.

In this panel we talk about regulation. The European term regulation came wrong in Bulgaria because it came through the field of radio and television, once there was such a body as The Council for electronic media. Right in this area, legal regulation is very strong. But in the sphere of the economy, especially when it's digital, and that's my suggestion to you, the state is small. It should be limited, absolutely no possibility of over regulation should be allowed. There can be no over-regulation in the sphere of the economy, because the market there shifts the state where and when it is. In our country - still weak, but the prospect is clear. This is the prospect. Out of these 386 laws, a large part has elements of the digital economy. In fact, they are without real application. That is, the public relations that need to be settled are there, but what Parliament adopts as a law is not there. I give you a dramatic example, telling it to our guests from Europe - do not do like us. We have adopted a public-private partnership law and we have revoked it. This has not happened for more than 50 years. This, of course, could not have happened in socialism, but the fact that in the financial framework of Europe 13/20 it is argued that public-private partnership is the main financial instrument, it should control the Bulgarian MPs and not think at all that they can dare to revoke the law on public-private partnership. This was done with amended additions to the Concessions Act.

Now I would like to be a bit more specific. Regulating the digital economy gives us an invaluable quality, a trend that comes to us, whether we want it or not. This is the wonderful unification that technology gives us. We could not fluctuate. The unification requires us, even when we have not transposed the directives, such as the GDPR Regulation and those 3 directives that were not transposed, that they operate in our country. The unification requires from us, even when we have not transposed the directives, to obey them, for examples such as the GDPR.

And the principle of the Bulgarian Constitution is that when European law applies a better standard, Bulgarian citizens will choose European law.

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They will not remain in the context of national legislation. I say this in relation to the administration of justice - forcing the preliminary ruling to form the Bulgarian court. The Bulgarian court resists, is constantly offended, and says it is unbearable that we do not believe in it and make it turn to the court in Luxembourg.

My hope that the International Court of Justice in Strasbourg or the Court of Justice of the European Union in Luxembourg will succeed with its suede gloves to repair the Bulgarian justice system is small, but e-justice comes to us inexorably even when we do not have real e-government or good e-governance, there is nowhere to go, because we have the examples of court that are binding on us.

That is, of course, we will correct ourselves because the economic sanction comes, saying that if the Bulgarian court does not allow a preliminary ruling within the meaning of Article 276 of the Treaty on the Functioning of the EU, it must compensate the Bulgarian citizen. So I see the regulation of the digital economy.

Firstly, Parliament will be relieved of a very clear process of discussion - everyone can discuss, everyone can write, send their opinions, the executive will be pressed by the need to legislate as long as parliament adopts the law, because the European law requires a set of regulations.

Let me say again, the regulation means that the state is equal, it does not impose the form, it agrees with the principle of private law - and thank God, because there is equality of the subjects, such inequality in the digital economy is unknown could not have been validated.

After the economy where we look first and foremost in the budget that has to plan the funds for digital development comes the so-called public procurement. Public procurement is magnificently arranged, we have wonderful examples. In our country, however, public procurement is so confused with state aid, so many unrecognized corrupt practices exist that we will really have to rely on restoring the model of public-private partnership.

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To see how the private sector will decide on those tasks that the state can not decide in the public interest. This is the limit of regulation of the digital economy - the public interest. A very fuzzy concept, a concept that only citizens with their desire to ask the court to correct it can achieve. In social activity, the digital economy gives us some great chances in education. In Croatia, it is compulsory in the 5th grade to give a digital education. In our country this is already in the 1st grade. Bulgarian children have a sense of digital technology, they have no sense of economy, but I think it will come gradually. Healthcare, social care, above all in the area of unemployment is the framework that the digital economy could eventually impose. Thank you!

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*Remarks by Gregor Plantaric, Zavod14, Slovenia  
at the Conference "Smarty Solutions for  
Digital Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



Dear colleagues,

we are living at a time of extraordinary opportunities and fundamental changes in our business and personal environments. Fresh challenges lie ahead. The world is entering a period of extreme and disruptive changes while the fourth industrial revolution represents a new chapter in human development. Its driving force is the increasing accessibility and interconnectivity of various technologies for the purpose of solving social challenges.

Today's fast-paced global development is built upon competition among nations as to which will be the most desirable destination for companies developing new high-tech, tech that has completely unknown and often unexpected consequences. Along with that comes the political responsibility to develop ways to regulate the emerging technologies that support innovation whilst protecting the investors (and citizens generally). This is, of course, a tough task because technology and the related business models are still at an early developmental stage, albeit such development and innovations are occurring much faster than legal regulations are being put in place. On the other hand, regulating such technology too quickly or too broadly might hinder the development of industry or even make it impossible.

Our primary focus will be on the blockchain technologies used in FinTech, including initial coin offerings also known as ICOs. First, we must emphasize that ICO transactions are just one of the possible applications of the technology. The collection of funds with the help of an ICO has



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created novel opportunities, including for many start-ups, that otherwise would be unable to raise the necessary funds. Whilst ICO transactions

might show the potential to develop into an effective mechanism for financing companies, many challenges and questions have to be addressed first. ICO transactions in this early adoption stage entail many risks for both the entrepreneurs and investors and users involved. The future effectiveness of ICO funding (in its current form) is highly questionable. While some enormous speculative profits have been made, the average investor seems to benefit little.

It should be noted that ICO transactions are already widely regulated. But since cryptocurrencies, blockchain technology and the related business models are still largely untested, considerable space and opportunity remain for “smart regulation”.

European countries are today already playing a vital role in the ICO industry. As European Liberals, we should aim for the European Union to become a leading world player in the development and use of blockchain technology. We will simultaneously have to work to ensure that these technologies in the first place are improving the quality of our lives.

### **The rise of ICOs**

It would not be too controversial to say that one of the biggest causes of today's flourishing of ICO market is the global financial crisis that started back in 2008. In response to the trust lost in the banking system, a document entitled “*Bitcoin: A Peer-to-Peer Electronic Cash System*” was published in 2008 by the still unknown Satoshi Nakamoto (<https://bitcoin.org/bitcoin.pdf>). This was the birth of the blockchain technology and the cryptocurrencies, current the best known product of blockchain technology.

Parallel to this, due to the credit crunch when individuals and especially companies had limited access to bank funding, new forms of financing (equity or debt) started to emerge. One of the most popular is

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crowdfunding in all its different forms – donation, loan, equity, and debt-based. Crowdfunding has been recognized by the European Commission (EC) as the most important alternative financing for Small and medium-sized enterprises (SMEs), which are the backbone of the European economy. The EC has issued several documents on crowdfunding, the last coming in March 2018 as part of the so-called “Fintech action plan” where it was proposed that crowdfunding service providers be regulated.

ICOs are a hybrid of cryptocurrencies (and blockchain technology) and crowdfunding. We could say that ICO is crowdfunding on steroids.

The ICO market is definitely expanding. Exponentially. According to Coindesk, the total funds collected in 2017 was USD 5.5 billion, entailing around 350 successful ICOs

According to ICOBENCH, the top countries by the number of ICOs per million people include four European countries: Estonia, Cyprus, Switzerland and Slovenia.

While Europe has so far been unable to compete with the USA and China in the so-called platform economy (Amazon, Google, Alibaba) blockchain technology provides an opportunity for Europe to jump on the digital transformation train and become a world leader in this segment of the industry.

This is a chance for Europe that should not be missed. The world economy is in the middle of Industry 4.0. where everything is connected.

Blockchain technology is the most disruptive force within the digital transformation and is linking all other disruptive business models and technologies together, such as a sharing economy, circular economy, the Internet of Things, artificial intelligence and others.

### **Slovenia – a blockchain nation**

Successful Slovenian companies already rank among the world’s leading developers of digital investment platforms. Since then, the government in

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cooperation with the Slovenian start-up community has adopted an action plan with a view to making Slovenia the most desirable destination for start-ups in Europe. It has realised that cooperation amongst all key stakeholders in the process – entrepreneurs, government, regulators, experts, and civil society – is essential for the accelerated development and application of blockchain technologies. Therefore, forces and knowledge have been pooled and in the last two years Slovenia has taken significant steps to develop this area. But the government is also calling on entrepreneurs, experts, and all stakeholders involved in developing blockchain technology to create new business models and conduct business with due diligence, in line with the applicable legislation and rules, and to consistently observe the principles of good governance; on top of that, to establish a culture of self-regulation and ethical business. In doing business, they should take account of all recommendations and examples of good practice from national and international organisations.

The result of all of this should be self-regulation and regulation coexisting in the form of “smart regulation”. A side intention is to apply this regulatory model to other emerging technologies.

### **Has the “crypto-crowd” really gone?**

As we have seen, the ICOs in today’s “wild” form involve many risks for both entrepreneurs and their investors and users. Many regulators already argue that ICOs are high risk and speculative investments in nature, and often offer no protection to investors. The European Securities and Markets Authority (ESMA) notes the considerable risks associated with ICOs and stresses that investors may lose all of their savings. More than half of all ICOs worldwide could already have failed and many legal proceedings are underway. Crypto currencies can also be used as a mechanism for a variety of scams, for overnight-profit, “pump and dump” schemes. The major risk for the entrepreneurs is the legal uncertainty. Countries take different approaches to how they regulate cryptocurrencies. It is becoming even more complex because the

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regulation can depend on the nature of the cryptocurrency itself. Namely, from a regulatory perspective, there are two main types of cryptocurrencies: utility tokens and asset-backed tokens. Utility tokens, such as Bitcoin, may have value because they enable the holder to exchange the token for a good or service in the future. Asset-backed tokens, on the other hand, may have value because there is an underlying asset which the holder of the token can attribute value to. There is also a third function as payment tokens, which are used as a means of currency or payment. For the issuers of cryptocurrencies this makes it complex to analyse the different regulations of tokens applied in each country.

Although ICOs may provide fair and lawful investment opportunities, bigger investors are already shifting back to the well-established and more secure methods of financing, such as classic start-ups, business angels etc.

However, asset-backed token ICOs could perhaps still gain momentum if they “transform” into a so-called Security Token Offering (STO) where the responsibilities and obligations of the market players are clearly known and understood. Security tokens are actual financial securities, meaning the tokens are backed by something more tangible like e.g. assets, public and private equities, debt, profits or revenue of the company. Tokens released in this way should be compliant with KYC (Know your customer) requirements and securities laws, while they still take financial institutions and middlemen out of the equation. This “security” could act then as a motivation for more investors to invest.

### **Possible vectors of future regulation**

In general, technologies are evolving much faster than regulation can follow. This is especially true of the blockchain industry where technology is developing in leaps and bounds in all sectors, such as fintech, healthcare, the public sector and others. This poses a major challenge for all regulators – how, when and what kind of regulation to impose on specific segments of these technologies, in particular to all kinds of

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transactions, business models and forms of funding related to cryptocurrencies.

Regulation has some pros&cons. But it is not only question of whether to regulate or not to regulate that is materially important. Also, the matter of the timing and the intensity is important. Should regulators wait for the industry to regulate itself and then prepare regulation? Should the regulation be implemented at the outset, when some categories of stakeholders have the greatest risks imposed on them or should regulators only monitor the industry, knowing there will be some rotten apples among the good projects but that, all in all, technology and everything surrounding it will gradually mature and the stakeholders will be properly protected.

### **No legally binding rules – self-regulation**

Minimum standards for the industry can be established in any form – as written guidelines, business conduct between partners, independent institutions acting as a mediator, etc. We are talking about self-regulation of the industry.

There are many positive sides of self-regulation. Most importantly, that it is put in place by industry insiders. This may at the same time be risky because the industry follows its narrow interests, which could collide with those of other industries or regulation. If the industry sets its own rules, these rules will most probably not slow the rapid development of the technology, while self-imposed rules are also much more flexible, able to adjust quickly to market conditions.

The most important weakness of self-regulation is that there are no legally binding rules, no potential penalties and legal consequences for those in breach of the rules. From the perspective of some categories of stakeholders, such as consumers, this means they are left without proper legal protection vis-à-vis the companies and individuals offering products/services within ICO transactions.

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### **Strong regulation in force**

The fast and intensive regulation of ICOs would definitely benefit investors. Clear rules about the responsibilities and potential measures in the event of a breach would bring legal certainty for them. These rules and clear sanctions for breaching them would most probably discourage most ill-intended ICO projects from even coming to the market. But prompt and in-depth regulation would also most probably slow down or in some cases even halt the fast development of the ICO industry and blockchain technology generally.

A lack of regulation means the legal framework is not clear and predictable. Consequently, there is huge compliance risk for every ICO issuer. Legal clarity and predictability are something every serious ICO issuer would demand before starting an ICO project. Issuers will therefore search for jurisdictions where the compliance risks and related risks of regulators imposing sanctions are minimal.

### **Towards “Smart” regulation**

Based on the above pros&cons of regulation and self-regulation, I believe that the right balance between regulation and self-regulation needs to be found. Smart regulation would mean exactly this. To let industry regulate itself at the start and then, once the industry becomes more mature and relations between stakeholders are clearer, for regulation to be imposed to complement the self-regulation.

While industry is engaged in self-regulation, measures to protect stakeholders need to be prepared. Not necessarily in the form of “lex specialis” for the ICO industry, but more generally. Some legal institutes from the outstanding systemic regulation could be imposed on ICO transactions, protecting investors on one side and not impacting the industry’s development on the other. An example would be some institutes from Markets in Financial Instruments Directive (MiFID), such as the prevention of inside information trading, prevention of market manipulation, etc.

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At the end, we see smart regulation as a combination of self-regulatory rules in the form of soft law and regulation as a hard law, which would provide a framework. This kind of a soft law–hard law balance would be flexible and up to date while simultaneously ensuring legal clarity and protection for the stakeholders.

### **What's next?**

Blockchain and cryptocurrencies hold the potential to reshape many business models and, despite some healthy scepticism, companies are already showing growing interest in the technologies. Many applications are at an early stage of adoption, yet we need to identify areas where the impact may be most significant and discuss potential challenges with stakeholders. The term “smart regulation” is sure to be often one of the most overheard in conversations, roundtables and panels focusing on ICOs and cryptocurrencies. Smart regulation will be the result of a search for the right balance between regulation, which establishes appropriate legal premises and self-regulation of the blockchain industry, which, in accordance with the technology’s development, fills the content between the legal provisions.

All European countries face similar challenges of how to achieve regulation in a smart way while not blocking the innovation and potential of blockchain technology. There is a need for strong political will and also responsibility to cooperate and learn from each other in the European Union so as to develop a harmonized regulatory model together.

The outcome of the technology is often quite unpredictable and typically more questions are raised than are answered. As a liberal society, we must evolve together with it.

I wish you successful chaining of ideas.



# Chapter 5

## FUTURE OF WORK AND EDUCATION

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*Remarks by Gergana Passy, Digital National Alliance at the Conference "Smarty Solutions for Digital Economy in South East Europe" in Sofia, Bulgaria, June 5, 2018.*



Let me start with a quote for the future that says "The future is not what it was." These words, which belong to the colorful baseball player Yogi Berra, are more relevant than ever. We live at a time when any forecast for the future is premature and inaccurate. It seems that none of us has an answer what exactly the future will offer to us – to the individual and to the society as a whole. At a time of such fundamental change brought about by the Internet and the new technologies, two topics - education and the labor market - arise.

In fact, as Eric Schmidt, the man who turned Google into an empire, notes in his book "The New Digital Age" - "The Internet is the only creation of man that one does not fully understand." This is because the Internet and technologies are opening a new world and opportunities on the one hand. On the other hand, the change is so exponential that it is difficult to conceive through the human brain. It sets very specific moral and ethical issues that are not easy to answer. Unlike the steam engine in the 19th century and the robots in the second half of the 20th century, which are widely used in the industry, modern technologies and robots do not come to save the physical effort of man. They come and take on functions that until recently were reserved only for us, people - knowledge, analysis and evaluation of information. This creates enormous opportunities that both enhance the quality of our life and challenge us to a whole new reality. A recent study among the world's most renowned technology researchers predicted that artificial intelligence would do better than man in foreign-language translation (by 2024), essay writing in high school (2026), truck driving (until 2027), writing a bestseller (until 2049) and surgery (by 2053).

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All this changes or requires change in virtually all areas. The theme that emerges as the main one is education. I started with the fact that the future is not what it was, but education is exactly what it was. Look at these two pictures - how an operating room looks like in the 1920s and how it looks today - 100 years later. Obviously, with such a change, the most brilliant surgeon 100 years ago would be helpless if he entered a modern operating room.

Now, let's take a look at two more pictures - of a random classroom 100 years ago today. What do we see? The same, except for the progress in photography. And here comes the big question - how do we prepare people who will live in a completely different world, how do we prepare our children?

The Digital Alliance has proposed a package of four measures that are far from exhausting the talk about reforming education with a view to the digital agenda:

- 1st – by 2020, to have high-speed internet in all schools. Of course, we are talking about a web with controlled educational content;
- 2nd – heavy textbooks and all classroom necessities from school bags should be replaced with tablets. This will remove a lot of weight from our children's shoulders compared to only 300 grams of electronics.
- 3rd - mass and ubiquitous inclusion of content from National Geographic, Animal Planet, History Channel in the curriculum, etc. We will blow the dusty boredom and turn the tuition into a sought-after computer game that we are trying to limit today.
- 4th - intensive, annual, but not formal, qualification of each teacher. New times require new care for teachers without which change cannot

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happen. That is why our Alliance has launched two major parallel projects for teacher training - one with Google, the other with VMWare and America for Bulgaria where teachers teach teachers, that is, all innovative teachers who are already making education much more interesting to students, bring their colleagues into the world of technology. Today, more and more teachers find that technology enables them to make more interesting content, to communicate more easily with students and parents. They are aware that the time they were monopoly carriers of knowledge has ended in the epoch of Google. Today, their role is more complex and difficult, and requires intensive preparation for new times.

I finish with a quote from the book I now read – The Geography of Genius. In it, the author Eric Weiner gives his reasoning for why in some geographic regions the genius flourishes, and when he speaks of the ancient Greek culture he says that the thing that great minds like Plato, Socrates have preached was " What is honored in a country, will be cultivated there". Now let us ask this question in a contemporary Bulgarian context. The answer may not be liked by everyone.

Thank you for your attention!

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*Remarks by Dr. Todor Yalamov, Vice Dean,  
Faculty of Economy and Business, Sofia  
University  
at the Conference "Smarty Solutions for  
Digital Economy in South East Europe"  
in Sofia, Bulgaria, June 5, 2018.*



I want to start with one question. Those of you who have read Toffler's "Future Shock" in the 70s or 80s, do you remember which aspect of the book shocked you then? The most shocking thing for me when I read it, before the changes was that the most constant thing would be change and its speed would increase. Today almost every presenter said something like that in their speech. For me this was the most surprising then and almost none of his other predictions. I have titled my presentation "The Future Today" and will try to argue with some of the biggest myths that are, related to the future related to technology, mostly coming from various concerns.

For example, technology will kill jobs. In fact, such predictions have been made since the Industrial Revolution, and this is never the case. What is happening is that some types of jobs are transformed into other types of jobs. There are several examples from Bulgaria about how digitalisation affects some sectors.

The first sector I want to focus on is the beer industry. I like to drink beer and this industry has always been interesting to me. The first thing I noticed when a very large digital penetration has taken place in the industry is that a lot of people in the beer industry have been replaced, have been sacked even if they are warehouse keepers, even if they are of the lowest level of workers, by people who understand from computer technology because very quickly all production processes have been replaced by modern computer technologies. At the same time, I would

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like to give an example with the high tech electronics in Botevgrad, that you know is our pride from the time of socialism. Back then my aunt worked in these factories, all of the employees there were excellent PhDs diplomants, engineers. Botevgrad was the city with the most engineers, perhaps except from Zelenograd, in the world, per capita, maybe 80-90%. At the moment I do not know whether anyone is watching what is happening in Botevgrad, but there are some buses that go to Roman and Mezdra, for our foreign guests, these are extremely poor and abandoned settlements, which are almost entirely ghettoized, where mainly Roma people live. These Roma, however, work in these factories. You see how digitization, on the one hand, discards low-skilled people in the beer industry. At the same time, however, it provides work for people who almost could not find a job anywhere else.

The next example is the tailoring industry where many people complain that everything done in Bulgaria is extremely bad in terms of innovation, but has also proved to be one of the fastest digitized industries and the reason is that our tailoring factories are also very well integrated into the supply chain of its end-users in Europe and the United States. Our industry, despite all the apocalyptic predictions, this particular industry that will lose from China, actually wins from China, paradoxically. In fact, during the crisis, you will see that there were more appointed seamstresses, more enterprises opened in this sector. Why? Because we specialize in a niche of this industry, which is to provide a quick response. When they see in H&M in Germany, for example, or any other company, that several articles from their summer collection are sold out already, on Thursday let's say they call, on Friday, Saturday and Sunday we produce, because everything is sent electronically. On Sunday evening the trucks are loading and Monday evening they are already unloaded in the first warehouses. Everything, of course, in order to be cheap, must be digitized, labeling, barcodes, absolutely everything should be done by us. That is, you see how digitalization transforms even our low-technology sectors and enables them to compete, and if that did not happen, we would really lose from China.

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Education and programming. I have one more question. When did you write your first code? Is there anyone who has written code in this room? When did you write them, at what age? Why do I ask? Because I do not know if you know, from September every month in all schools both state and private all third-graders will study computer programming, called computer modeling. And, of course, a lot of people said, "But how, they cannot, there are no teachers to teach," The first code I wrote was in 1984, the summer between 5th to 6th grade. And it wasn't just me, there were at least about 30 people in the summer school, we were having fun writing the code. It was then basic. My kids started making code in the first grade, through robots. My daughter's teacher raised a scandal about why I did not sign her up to ballet and that robotics is for boys.

Several micro trends I want to note. Work turns into entrepreneurship. That is, more and more people cease to be hired in the classical sense of the 19th and 20th centuries by what we know from Marx theory and become entrepreneurs. We are increasingly turning from consumers to creators, each of us, including children, 8-9 year olds becoming media stars. Because of the change in the transaction infrastructure, the entire organization of the economy is changing.

Several micro trends I want to note. Work turns into entrepreneurship. That is, more and more people cease to be hired in the classical sense of the 19th and 20th centuries by what we know from Marx theory and become entrepreneurs. We are increasingly turning from consumers to creators, each of us, including children, 8-9 year olds becoming media stars. Because of the change in the transaction infrastructure, the entire organization of the economy is changing. Ronald Coles claims that the company appears because it manages transaction costs more efficiently. Everyone can now become an entrepreneur just because transaction costs are close to zero because of digital technology. Capital is important but intellectual capital is more important. The gaming industry captivates economics and education. Here I want to make a connection with the subject of technology and entrepreneurship. It comes from labor training, from a very interesting Finnish guy Uno Cygnaeus. This Finn invented the

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sloyd system, which makes children craft toys from wood. This is the distant 1865. This is how the labor education arises. In fact, kids now have fun and would learn more if they are playing games, and that's one of the things I started in 2014, I began to teach programming for first graders. For just one Saturday every child can make a smartphone game for maybe 1 or 2 hours and that's fun for them, so much that one of the kids got a boyfriend because it's cool to program.

What we do at the faculty allows students to experience the full cycle of product development and innovation together with outside firms. At first I did not mention it, but I would like to discuss the game Minecraft. It is extremely important for children and not just children, but for everyone to play. I do not know if your children are playing, but talking about the game with my son, has improved our communicatio. Previously, he did not want to share with me at all, because I was boring for him and now he's my main developer for this game we're doing for school – and he's only in 6th grade.

Many of our bulgarian successful companies have become world-renowned by commercializing their hobby. Walltopia, AVA sport, Chaos Group are such examples. There are around 12-13 world-renowned companies that started doing some small business by improving their hobby. Lastly, why arevpeople playing with technology and not using them for production purposes. Well, it's actually the economy. I do not know if you know, but the key engine of Intel's processor development, all the chips, is actually the gaming industry. If it was just the industry, it would never have developed the technologies we have now. Gaming technology is the one, not in the gambling sense, the one that develops technology and then enables companies to make use of this opportunity.

Thank you for your attention!



# SMART SOLUTIONS FOR THE DIGITAL ECONOMY IN SEE

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A collection of speeches given during the Conference "Smart Solutions for a Digital Economy in South East Europe" in June 2018.

More than one hundred participants discussed the societal and economic advantages and challenges of what is known as the next technological revolution. It is important to note that debates were not technology-centred, but people - centred. All the parts of Europe from North to South and from East to West were represented and most of the aspects of the digital future discussed. Such as regulation, employment, education, regional development and even politics.

