

Digital Transformation in Croatia: Contextual analysis

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Abstract. „Innovate or die”, notorious demand declared by Peter Drucker, best sums up the imperative set by the Fourth Industrial Revolution, a new era of socio-economic disruption, characterized by the fusion of the digital, biological, and physical worlds, as well as the growing utilization of new technologies such as artificial intelligence, cloud computing, robotics, 3D printing, the Internet of Things and advanced wireless technologies. But innovation is a process, strategic goal that needs to be fueled and cultivated. As organizations need to develop new business models to adapt to change, there is also a requisite for infrastructural and institutional support provided by the government to create a stimulating environment where the benefits of the upcoming digital revolution can be optimally utilized. The paper compares available (statistical) indicators on investments and the development of Internet infrastructure on the territory of the Republic of Croatia, as it is considered to be the main link of today's digital society. Given indicators, as one of the prerequisites for the development of innovation and new business models, refer to the established economic and social framework provided by the state for the implementation of the digital transformation.

Keywords. digital transformation, indicator, Croatia, 5G

1 Introduction

The digital revolution has changed people's lives. With the advent and development of computers and all the accompanying technologies, many things have become more available, numerous everyday processes have been accelerated, and new possibilities have been created. Processes that used to be time-consuming are now performed by entering only a few commands into a computer. Nowadays, almost every person owns a mobile phone, and most households also own a personal computer and a TV.

¹ Also referred to as collaborative economy, access economy, gigeconomy, on-demand economy

With this increasing mobility of users and interaction with each other through social networks, power has been transferred from companies to users' keyboards, while companies have been moved to the margins of the so-called UGC (Kaplan & Haenlein, 2010), user-generated content, public and completely independent of company influence.

This user-centric environment has made it imperative for companies to adjust to this new socio-economic disruption of the overwhelming Fourth Industrial Revolution. With the growing utilization of new technologies, companies are forced to innovate to create new values for customers that could make them market leaders, or just to keep up.

Considering the generic process of innovation, every time company develops a product or service, two sets of information are combined: 1) information on market needs (desires, preferences, satisfaction, user motives, etc.) and 2) information on technical possibilities of performance, ways of using technologies to transform user wishes into a new product or service (Diener & Piller, 2009).

But this process is not used only to develop new products or services. In today's digital ecosystems, new and innovative business models are created to bring additional value for users but also to strengthen the competitive advantages of the organizations involved. The rise of so-called sharing economy platforms¹ has led to the idea that all people are enabled to have equal access to goods, regardless of their income and social status. This trend introduced “prosumers” (Lang et al., 2020), an increasing number of users who produce and share information, not only news and entertainment, but also renewable energy, 3D printed products, and online courses with almost zero marginal cost. Completely bypassing the conventional market, cars, houses, clothes, and tools are now being shared, relying completely on the UGC rating systems between users and service providers, bringing a major change in the economic paradigm.

This change in business models, where ICT is put as a “building block” (Aagaard, 2018), resulted in value chain disruption of entire industries. Therefore, to build an innovative and competitive society, it is essential to

develop quality infrastructure that could enable the development of new products and services but also connect companies with end-users.

The Internet infrastructure is largely the responsibility of the state itself, which, through investment strategies in the development and maintenance of infrastructure, provides companies with a foundation to build their products and service to satisfy the market interest.

Despite of continuous progress and efforts to improve infrastructure and achieve competitiveness, the Republic of Croatia lags behind the European Union average in many parameters. And, although its' national action plans, as well as the strategies are in line with the documents in which the EU presented the vision of a connected digital European society, called a "gigabit society", the state of digital transformation is in an „unfavorable position“ (Jurčević & Mostarac, 2020). To determine an inductive reasoning context for such results, the paper perceives wide scope of technological, organizational, and regulatory indicators considered to be the main prerequisites for today's digital society in relation to available strategic documents, on national and level of the European Union.

2 Research methodology

In this primarily qualitative research, based on a content analysis of available secondary data, the direction of Croatian efforts in the development and use of new business models is perceived mainly on the quantitative data collected from the Digital Economy and Society Index - DESI for 2020, a study published by the European Commission based on national and regional reference data for years 2017, 2018 and 2019, collected using the Copernicus satellite and by Eurostat - the statistical office of the European Union. The observed research parameters include:

- the percentage of Internet users in the Republic of Croatia
 - the number of social network users in relation to the number of Internet users in the Republic of Croatia
 - the percentage of the households using the fixed broadband network on the territory of the Republic of Croatia
 - the percentage of households using a fixed broadband network with a minimum speed of 100 Mbps in the territory of the Republic of Croatia
 - the number of mobile broadband users/subscriptions per 100 inhabitants
 - the percentage of households using a very large capacity network in the Republic of Croatia
 - the percentage of 4G network coverage area in the Republic of Croatia
 - the percentage of coverage area with a minimum speed of 100 Mbps in the Republic of Croatia
 - the number of companies with a profile on at least one social network shown in a relation to the total number of companies in Croatia
 - the percentage of Croatian companies that use cloud computing in their business
 - the number of SMEs using cross-border online sales in relation to the total number of SMEs using online sales
 - turnover of SMEs realized through online sales
 - the Percentage of companies that use electronic information exchange in their business
 - the percentage of companies that use big data technology in their business
- These indicators are put in contextual definition according to available strategic documents:
- Strategy for the development of broadband access in the Republic of Croatia in the period from 2016 to 2020
 - National plan for the development of broadband access in the Republic of Croatia in the period from 2021 to 2027
 - National Action Plan for the use of the 470-790 MHz frequency band
 - National Program for the Development of Broadband Infrastructure in Areas Where there is insufficient commercial interest in investing
 - National Broadband Aggregation Infrastructure Development Program in areas where there is insufficient commercial interest in investment
 - National Consumer Protection Program for the period from 2021 to 2024
 - European Union 5G Action Plan
- The research also included information on the prescribed goals and activities set by the Croatian government in the following documents:
- e-Croatia 2020 Strategy
 - National Cyber Security Strategy
 - Law on State Aid for Research and Development Projects
 - Law on State Information Infrastructure
 - Law on Information Security
 - Law on Cyber Security of Key Service Operators and Digital Service Providers
 - Consumer Protection Law

Finally, to provide a broader perspective for the interpretation of the parameters, the results of the Global Cybersecurity Index (GCI) (*International Telecommunication Union: Global Cybersecurity Index*, 2018), published by the International Telecommunication Union (ITU), were used.

3 Research results

Today, as almost every person owns a mobile phone, and most households own a personal computer, the Internet is a prevalent medium not only for business but also for entertainment and other aspects of an individual’s life. According to the results of the recent DESI report (*European Commission: Digital Economy and Society Index, 2020*), 77% of the total number of Croatian citizens use the Internet at least once a week, while 73% of users have an account on at least one social network. Both results correspond to the EU average where the Republic of Croatia is ranked 15th out of a total of all EU countries (Fig. 1).

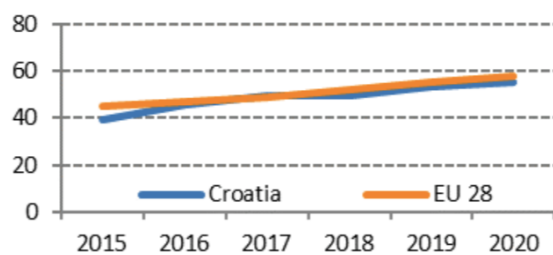


Figure 1. Comparison of the use of Internet services in the Republic of Croatia and the EU average for the period 2015-2020

Due to the investments in infrastructure development, the use of the fixed broadband network in households has increased correspondingly and it currently amounts to 70% of the total number of households in the Republic of Croatia, while the demand for ultrafast internet, at least 100 Mbps, is 6%, which is significantly lower than the European average of 26%, but also a significant increase compared to the data for 2017 and 2018. Furthermore, the demand for mobile broadband access is constantly increasing to the so 89 subscriptions per 100 inhabitants in 2019.

To be able to take advantage of this demand and adapt its offer of products and services accordingly, technology, organizational and regulatory prerequisites need to be aligned in providing a holistic system of required infrastructure.

3.1 Technological indicators

Croatia has made significant progress in the area of very large capacity network coverage which covered 43% of households in 2020 (*European Commission: Digital Economy and Society Index, 2020*). That is a 20% increase compared to the 2019 report and the biggest reason for this rise is the increase in fiber-to-the-premises (FTTP) coverage and the advancement of cable networks. Furthermore, according to data collected from all three Croatian mobile operators - T-mobile, A1, and Tele 2 (today: Telemach), the 4G network is available in 98% of Croatian households, which is two percentage points more than the EU average. Table 1 shows DESI results 2018-2020 put

into a time relationship and compared with the average score of all EU countries.

Table 1. Results of the digital connection test of the Republic of Croatia in the period 2017 - 2019

Indicator	Croatia			EU
	DESI 2018 value	DESI 2019 value	DESI 2020 value	DESI 2020 value
Overall fixed broadband take-up (% households)	70% 2017	72% 2018	70% 2019	78% 2019
At least 100 Mbps fixed broadband take-up (% households)	1% 2017	5% 2018	6% 2019	26% 2019
Fast broadband (NGA) coverage (% households)	68% 2017	83% 2018	86% 2019	86% 2019
Fixed Very High Capacity Network (VHCN) coverage (% households)	18% 2017	23% 2018	43% 2019	44% 2019
4G coverage (% households; average of operators)	73% 2017	94% 2018	98% 2019	96% 2019
Mobile broadband take-up (Subscriptions per 100 people)	82 2017	85 2018	89 2019	100 2019
5G readiness (Assigned spectrum as a % of total harmonized 5G spectrum)	NA	0% 2019	0% 2020	21% 2020
Broadband price index (Score 0-100)	NA	NA	61 2019	64 2019

In many aspects, the Republic of Croatia lags behind the EU average, although in almost all indicators it is shown continuous progress, which indicates the existence of state administration efforts to improve infrastructure and try to achieve competitiveness at the EU level. Recently began the implementation of the National Broadband Access Development Plan for the period 2021-2027 (*Vlada RH: Nacionalni plan razvoja širokopoljanskog pristupa u Republici Hrvatskoj u razdoblju od 2021.do 2027. godine, 2018*), which continues the plan from the period 2016-2020. The current plan sets goals for

Internet availability greater than or equal to 100 Mbps in all Croatian households, providing all necessary prerequisites for upgrading 1 Gbps capacity and introducing a 5G network in all urban areas and major land transport routes.

The introduction of a new generation Internet network - 5G - stands out as a turning point in the implementation of the principles of the Fourth Industrial Revolution. 5G represents a network of reduced disturbance, such as latency and interference, and the ability to transfer larger amounts of data at a much higher speed. Implementation of 5G network enables easier implementation of technological concepts such as Big Data, Artificial Intelligence, Industry 4.0, Smart Cities, and Internet of Things, since, according to the European Commission's Action Plan (European Commission: 5G for Europe - Action Plan 2016), 5G network will enable interconnection of up to one million devices per square kilometer, compared to current 1 000. The most frequently mentioned areas of application of the 5G include healthcare, transport, education, manufacturing, logistics, energy, and the entertainment industry, but in reality, the areas of application are indeed unlimited and depend exclusively on the innovation capabilities of the business sector. Digital orientation and uninterrupted business networking will also cause the creation of new business models, increasing Croatia's competitiveness at the European but also global level. In addition to the already ubiquitous processes of accelerated digitization, the COVID-19 pandemic has further spurred technological change due to increased demand, which has also created a great deal of pressure on digital infrastructure and services.

The European Union stands out as a pioneer in the implementation of the 5G, since the establishment of the Public-Private Partnership (5G - PPP) initiative in 2013, as the first region to address the future of the Internet related to 5G technologies. Besides the 5G Action Plan, as "an umbrella document" for the implementation of the 5G network in the EU, the initiative is followed by the communication document "Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society" (European Commission - Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society, 2016b), which also obliges Croatia as the member state to select one larger city for a starting location for implementation by the end of 2020. By a joint decision of the Ministry of the Sea, Transport and Infrastructure, the Croatian Network Regulatory Agency (HAKOM), and three Croatian mobile operators, Croatia chose Osijek as the first Croatian 5G city (*Vlada RH: Osijek postaje prvi hrvatski 5G grad*, 2020). In the context of these activities, the Croatian Government also established Working Group for 5G, which deals with the development of strategic documents and resolving difficulties in introducing the network on the territory of the Republic of Croatia, while developing a national action plan for the introduction of the 5G network

adopted in March 2021 (*Croatian Government: Nacionalni plan razvoja širokopojsnog pristupa u Republici Hrvatskoj u razdoblju od 2021.do 2027. godine*, 2021).

The first commercial 5G network in Osijek was put into operation in October 2020, and by March 2021, the 5G network was implemented in 34 Croatian cities, reaching a population of 1.5 million inhabitants. The implementation leader is Hrvatski Telekom (HT) as the largest Croatian network operator, in cooperation with Ericsson Nikola Tesla. As a direction for future progress, the HT plans to cover 50% of the population of Croatia by the end of 2021. The area of the City of Zagreb and Zagreb County have the best coverage, which is also shown in Figure 3 ("5G mreža budućnosti", 2021).

Currently, the 5G network is developed on Digital Spectrum Sharing (DSS) technology that allows simultaneous frequency spectrum sharing for 4G and 5G networks, enabling high synchronization and easy transition between coverage areas. Currently, the allocation of part of the 4G network in favor of 5G is considered economically unjustified, given the small share of 5G devices in the total number of Internet users at the moment ("Croatian Telecom 5G Network Offer to Cover Many Croatian Residents", 2020). For further development and full implementation of the 5G network, it is necessary to allocate a new frequency spectrum based on a concession tender, which is expected to be implemented by HAKOM in the first half of 2021 ("5G mreža budućnosti", 2021).

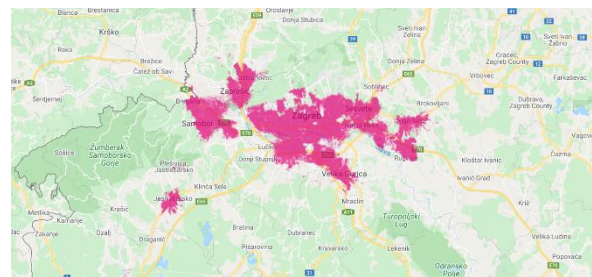


Figure 3. 5G network coverage in the wider Zagreb area in April 2021.

Due to the geographical specifics of the Croatian territory, implementation of Internet infrastructure in a rural area can be challenging, so it is in a focus of separate strategic document: "National Program For The Development Of Broadband Access Infrastructure In Areas Where There Is Insufficient Commercial Interest In Investments" (*Ministarsvo pomorstva, prometa i infrastrukture: Okvirni nacionalni program za razvoj infrastrukture širokopojsnog pristupa u područjima u kojima ne postoji dostatan komercijalni interes za ulaganja*, 2014). This program is funded by the state, as operators and service providers have little commercial interest in the connection of the sparsely populated rural areas in the Republic of Croatia, that had set development of 70% Internet connections by the end of 2020, including 540 rural settlements, that

bring up 25% of the total population to the national network grid.

The organization for implementing this program is the public company Odašiljači i veze (OIV). OIV's activities include the areas of "television and radio broadcasting, multimedia, fiber and microwave connections, professional mobile radio network, new services, and support activities". In its plan for the period 2020-2022 (*Odašiljači i Veze: Srednjoročni plan za razdoblje od 2020. do 2022. godine, 2019*), the OIV emphasizes the continuation of internet connectivity in rural areas, as well as connecting urban areas and operators of neighboring countries through the construction of its optical network, increasing telecommunications capacity in the optical network and the scope of maintenance services of existing infrastructure, owned by the private business sector.

As a national infrastructure operator, OIV has the largest territorial reach in the Republic of Croatia (Fig.4), offering infrastructure rental services to all interested companies. In addition to the core business activities, its services also include providing the Internet of Things technologies and technologies based on Artificial Intelligence, that can serve as a core infrastructure for numerous applications in various digital transformation and machine-to-machine communication projects that can be crucial in developing smart cities and society as well.



Figure 4. OIV's fiber-optic network system

3.2 Organizational indicators

To comply with eIDAS (electronic IDentification, Authentication, and trust Services) regulation on electronic identification and trust services for electronic transactions in the European Single Market, a state body responsible for the implementation of the Strategy for e-Croatia 2020 was established under the jurisdiction of the Ministry of Justice and Administration. Also, several state institutions have been established to stem interoperability and digitalization; the National Council for the Digital

Economy, established in 2015 (*Vlada RH: Odluka o osnivanju Nacionalnog vijeća za digitalnu ekonomiju, 2015*), to adopt a digitization strategy that would support economic growth and define national priorities, and in 2016, the Central State Office for the Development of the Digital Society was established with the aim of harmonizing Croatian activities with European regulations ("O Središnjem državnom uredu za razvoj digitalnog društva", n.d.). Finally, at the end of 2019, as part of the research center of the University of Zagreb, Faculty of Electrical Engineering and Computing, the National Center for Artificial Intelligence (CAI) was established, which brings together more than 100 researchers from 18 laboratories ("Center for Artificial Intelligence", n.d.).

The Croatian Government also supports the digital transformation of the economy through the establishment of science and technology parks, which are most often established by local self-government units to encourage local economic growth. Besides, transformation is carried out through the strengthening of financial instruments for the implementation of innovation policy and financing of innovation projects and programs to support the innovation process. The Ministry of the Economy and Sustainable Development, the Croatian Bank for Reconstruction and Development (HBOR), and the Croatian Agency for Small Business, Innovation, and Investment (HAMAG-BICRO) can be highlighted as the most important state bodies dealing with the promotion and development of innovation.

3.3 Regulatory indicators

Commitment to change also requires adjusting the legal framework to, both, meet defined objectives and adapt to current technological trends and developments. The most important legislative changes are related to the adoption of the Law on State Aid for Research and Development Projects and the Law on State Information Infrastructure. The Law on State Aid for Research and Development Projects was adopted in 2018 to regulate the rights and conditions for the realization of state aids for research and development projects and its main task was to encourage private companies to invest in the research and development of new products or services (*Sabor RH: Zakon o državnoj potpori za istraživačko-razvojne projekte, 2018*). The Law on State Information Infrastructure regulates the development and management of information infrastructure, public registers, electronic information exchange systems, and user identification systems (*Sabor RH: Zakon o državnoj informacijskoj infrastrukturi, 2014*).

With an escalated importance of Internet security, the two most important laws related to cybersecurity are the Information Security Law and the Cybersecurity Law of Key Service Operators and Digital Service Providers. While the first regulatory document defines the powers of all entities that have

public powers and use classified and unclassified data in their work (*Sabor RH: Zakon o informacijskoj sigurnosti*, 2007), the second one is responsible for “implementing measures to achieve a high common level of cybersecurity in the provision of services that are of particular importance to the conduct of key social and economic activities, including the functioning of the digital market” (*Sabor RH: Zakon o kibernetičkoj sigurnosti operatora ključnih usluga i davatelja digitalnih usluga*, 2018).

In addition to the aforementioned laws, cybersecurity is also addressed by the National Cybersecurity Strategy adopted in 2015, resulting in the Action Plan for the Implementation of the National Cybersecurity Strategy and the establishment of the National Cybersecurity Council. The main goal of the Strategy, besides strengthening the information security in the Republic of Croatia, is “using all market potentials of the information society” (*Vlada RH: Nacionalna strategija kibernetičke sigurnosti*, 2015). But an important role in strengthening cybersecurity is also played by The Information Systems Security Bureau (ISSB) (“The Information Systems Security Bureau”, n.d.) and CERT as a “national body for prevention from cyber threats and protection of the security of public information systems” (“CERT”, n.d.), two bodies that made Croatia the 24th country in the world in terms of cybersecurity in 2018, according to the Global Cyber Security Index by the International Telecommunication Union (“Global Cybersecurity Index”, n.d.).

Recently, much attention has been paid to consumer protection. The basic document that defines the rights and obligations of all parties involved in any type of trade relations on the market is the Consumer Protection Law passed in 2014. It derives directly from the directives of the European Parliament and the Council, indicating full compliance with similar legislation in all other EU Member States (*Sabor RH: Zakon o zaštiti potrošača*, 2019). Besides some civil organizations, several state bodies also focus on consumer protection, primarily the National Council for Consumer Protection as the main bearer of consumer protection policy.

The Council includes independent experts from various fields, and it recently adopted the National Consumer Protection Program for the period from 2021 to 2024. The program actively monitors and harmonizes its activities with current EU regulations and the latest global trends in the development and representation of online commerce (*Sabor RH: Nacionalni program zaštite potrošača za razdoblje od 2021. do 2024. godine*, 2021). Also, a survey conducted by Ipsos agency in October 2020 states that, during the COVID-19 pandemic, as many as one-fifth of consumers experienced some form of violation of their consumer rights, indicating the need for frequent inspections and a detailed information plan for citizens, but also penalizing business entities in case of continuous practice of violating consumer rights

(*Ipsos: Istraživanje o stavovima potrošača*, 2020). In order to protect the rights of citizens, the Central Information System for Consumer Protection was established, through which it is possible to file a complaint of a violation of consumer rights, but also to ask questions related to the interpretation of the Law, request expert advice applicable in specific cases of trade and consumer relations if there is a suspicion of a violation of rights. In step with similar examples from other member states, the system is certainly an example of good practice and a step by the Government towards open communication with citizens.

4 Results Discussion

The Croatian Digital Index, based on a survey carried out among 300 medium and large Croatian companies between October 2018 and March 2019 by Apsolon company, indicates that companies in Croatia are not familiar enough with the term digital transformation.

Moreover, most of them identify it with the digitization of existing business models and/or analog processes which accounts for 40 percent of the digital transformation process in Croatia. And for the development of an innovative business model, the creation of new services or products, as a remaining 60 percent, more active role of company management is required, Apsolon representatives concluded (*Apsolon: Digitalna transformacija u Hrvatskoj 2019 - Hrvatski digitalni indeks*, 2019).

To inspire innovation and change, certain preconditions need to be ensured on a national level and, although there is significant room for further progress, the Republic of Croatia has been making increasing efforts over the years to improve its technological, organizational, and regulatory resources in this direction.

Croatia currently ranks 12th (*European Commission: Digital Economy and Society Index (DESI)*, 2020) at the EU level in terms of digital technology integration in the business sector. It is advancement by 5 places compared to the result from 2019, showing that Croatian companies are constantly enhancing ICT technologies and developing digital transformation projects.

52% of companies in Croatia (2 percent scores higher than EU average) have profiles on social networks (*European Commission: Digital Economy and Society Index (DESI)*, 2020) that they use to build a brand and promote their products and services, but also to help hire new staff. Cloud computing is used by 39% of companies, which is more than the European average of 36%, and it is showing the trend of increase from in the period 2018-2020 (Eurostat: Cloud computing - statistics on the use by enterprises, n.d.). Most companies use cloud computing for internal and external communication, data storage, office software such as word processing programs and spreadsheets for database construction.

Moreover, 21% of small and medium-sized enterprises (SMEs) have some form of online commerce, of which 10% are engaged in cross-border online sales, and 9% of the total turnover of SMEs goes to online sales. Areas with great potential for further progress are internal electronic information sharing, which is currently used by 26% of companies, and the use of Big Data technology, which is used by 10% of companies (*European Commission: Digital Economy and Society Index (DESI), 2020*). Regarding the integration of business management systems, the business sector in Croatia lags significantly behind the EU average in terms of the use of Enterprise Resource Planning Systems, which are implemented in 26% of Croatian companies compared to an average of 36% at the EU level (*Eurostat: E-business integration, n.d.*).

With constant progress towards the digital transformation, by far the greatest progress has been made almost unexpectedly - with the COVID-19 pandemic and the establishment of a "new normal" in private, but also business life, a phenomenon popularly called the Great Reset. The pandemic has accelerated the process of user interaction for a few years. For example, in a hypothetical situation without a pandemic, the average number of digital customer-to-business interactions in the European area would take 3 more years to reach today's level, while the average rate of digitized products and services would take another 7 years (*McKinsey & Company: How COVID-19 has pushed companies over the technology tipping point – and transformed business forever, 2020*). Also, the classic way of working has largely been replaced by the work-from-home principle. Although remote work has been practiced in some sectors even before the pandemic, its introduction has now been accelerated many times over, setting new standards for intra-organizational communication, management, the recruitment process, and many others. Furthermore, the new way of doing business has led to an average increase of 20% in internet use, as well as an even greater reliance on internet infrastructure and connectivity in everyday business. Experts believe that the situation will not change significantly even in the post-pandemic era, as many companies have seen numerous economic benefits of remote work, such as reduced real estate costs and transportation fees, but also increased worker productivity. All of the above suggests that many companies, having experienced the positive effects of the pandemic, will never return to the traditional way of working ("COVID-19 has accelerated digital transformation - here's how companies can adapt", 2021).

In these circumstances importance of national systems was shown, and tested, as borders were temporarily closed, exposing all weaknesses, but also the strengths. As every situation can be perceived as a disadvantage or opportunity, further research will be observing indicators of digital transformation in Croatia from the perspective of pandemic context.

5 Conclusion

The Republic of Croatia regularly fulfills its duties as a member of the European Union, providing and ensuring needed regulatory requirements, while trying to develop technological and organizational infrastructure for competitiveness. The implementation of 5G network, as a basis for Industry 4.0 and Society 5.0, can be seen as a good incentive for "dormant" companies to improve their digital transformation and to develop new and innovative business models to satisfy the needs of users in "new normal", while complying to consumer protection and new regulatives set by the Government. There exists a discrepancy between the set and met prerequisites and the actual situation regarding the innovative approach to market demand, where Croatia lags behind in the European region, taking into consideration the innovative advantage of the European countries over all other parts of the world.

Whereas Croatian IT sector, as a leader of digital transformation on the territory of the Republic of Croatia, remains competitive on global level, with one accomplished and several other companies on their way of becoming 'unicorns' worth more than a billion USD in the near future, the rest of the business sector does not follow that path but still stays hesitant to accepting the fast-paced and ever-changing mode of today's global market. The reason for the delay could possibly be found in the deceptive conception of market sophistication prevailing among many Croatian companies but also the creative and technology output outside the IT companies.

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