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# INNOVATIVE-DIGITAL ENTREPRENEURSHIP AS KEY LINK OF INDUSTRY X.0 FORMATION IN THE CONDITIONS OF VIRTUAL REALITY

Nataliia Kraus<sup>1</sup>, Oleksandr Marchenko<sup>2</sup>

**Abstract.** *Purpose of the scientific research.* Purpose of the research is to present the features of formation and content of innovative-digital entrepreneurship as the foundation on which Industry X.0 is built in the conditions of new virtual reality and technologies that change the business in the direction of its digitalization. *The object of the scientific research.* The object of the scientific research is the process of digitalization of business activity as a key link in the formation of Industry X.0 through the prism of CFO-3600 competencies in terms of virtual reality, to indicate the features of digital transformation of the enterprise with Office 365. *Methodology.* On the basis of dialectical, systemic and matrix methods the digitalization of enterprises is investigated, which determines new quality and format of business work in new virtual reality. The comparative analysis of innovative-digital spaces that determine networking in the development of Industry X.0 is used. *The result of the article.* Key innovation problems that need to be solved in the conditions of formation of Industry X.0 are presented, among which are named: innovation infrastructure and financing innovation, capability to generate knowledge, to learn and disseminate knowledge, governance of innovation. It is determined that CFO tools are the ability to build competencies within financial service and delegate (dependence on individuals); actively use outsourcing (the ability to build partnerships); actively use cloud solutions (readiness of architecture, economy). *Practical implications.* The strengths and weaknesses of “digital managers” at the stage of formation of Industry X.0 in the conditions of virtual reality are revealed. Thus, the strengths include technological literacy and a broad outlook; knowledge of technological architecture; significant experience in project implementation; strategic thinking; understanding the impact of technology on business processes and customer/consumer behavior. The world innovation and digital spaces that form the virtual reality of Industry X.0, which specialize in the connection of digital products/services, digital engineering, digital production/operations, are indicated. *Value/originality.* It is proposed to implement digital transformation of the enterprise with Office 365 through: solving a number of tasks in the implementation of digital transformation project of the enterprise; taking into account the challenges and threats of implementing Office 365 for the enterprise; the expected result from the migration to Office 365; Office 365 as a tool for transformation (Office 365 E3, Enchange Online, Skype for Business, Microsoft Intune); values for entrepreneurship. The process of achieving confidentiality in digital enterprise is defined.

**Key words:** innovations, Industry X.0, virtual reality, digital entrepreneurship, digitalization, digital technologies.

**JEL Classification:** B15, B25, O15, O32

## 1. Introduction

Global digital transformation in the direction of transition from Industry 4.0 to X.0 is possible due to the accelerated transformation of production on the basis of innovation, digitalization and glocalization. Modern companies are ready for significant investments and solutions. Evidence of this is the 1.2 trillion USD

that business has spent in 2017 on transformation technologies alone; 96% of organizations consider digital transformation as critical; 42% of managers who have formed a new positioning of their companies as “essentially digital” or “primarily digital”; 63% of managers consider main obstacle in digital transformation “difficulties in transition to

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agile corporate culture”; 36% “of managers overcoming resistance to new methods of work” have considered the second important problem; 1/5 managers are convinced that digital transformation projects are a waste of time; the best leaders of “digital emigrants” are 28% more likely to be successful in building relationships; “innate digital” leaders are 20% more likely to become “digital emigrants” more active and flexible.

Urgency of the problem of this study is evidenced by the fact that 86% of CEOs (Chief Executive Officer) consider digital technology as a priority No.1 for business development; 30% of organizational change projects succeed; 16% success of digital transformation projects in companies is even less; 43% of transformation projects fail because project does not take into account the peculiarities of corporate culture; 33% of digital transformation is not sufficiently involved in top management. The data presented by us show that there is an urgent need to present the practical features of innovative-digital entrepreneurship as a key link in the future of Industry X.0 in the face of new global challenges such as living and working in virtual reality.

Industry X.0's innovation network helps companies to use, and implement, and scale the latest digital technologies and services quickly and efficiently. Thanks to the brightest individual innovators, the latest technologies and deep industry experience, united in an immersive innovation space, we are able to transform enterprises in the direction of their digitalization. This can also be achieved through the use of creative energy of advanced technology to ensure continuous digital transformation, new growth and improved customer service. In addition, it is immersive technologies that are technologies of full or partial immersion in the virtual world or can be considered as different types of mixing of real and virtual reality. Immersive technologies are also called augmented reality technologies. Their list includes virtual and augmented reality, as well as 360°-video.

## 2. Literature review

The question of the conditions of formation and development of Industry X.0 is only beginning to attract the attention of foreign and domestic researchers, including Isaacson W. (2017), Shantarenkova M. (2017). Based on the analysis of the experience of Industry 4.0 in developed countries, it is proved that Industry 4.0 is one of the highest phases of digitalization, compared to “smart factories”, where such technologies as Big Data analytics (Big Data), machine learning, m2m-communications, artificial intelligence, a new generation of robots.

Due to the gradual decline in the cost of these technologies, they are becoming available, i.e. increasingly used by industry and business, which eventually affects existing business models or even

creates new business models. These results are presented in scientific papers and articles by Azzam M., Sami N., Khalil T. (2020), Smit J., Kreutzer S., Moeller C., Carlberg M. (2016), Colotla I., Bland D., Knizek C., Spindelndreier D. (2018), Tupa J., Simota J., Steine F. (2017), Smith J., Kreutzer S., Moeller C., Carlberg M. (2016), Trstenjak M., Cosic P. (2017), Marcel-Mihai S. (2018).

Foreign researcher Eric Schaefer's book “Industry X.0. Realizing Digital Value in Industrial Sectors”, a bestseller in the scientific world, clearly demonstrates the powerful impact of the industrial Internet of Things on production and explains in detail how to realize the potential of technology to increase competitiveness, profit and promote further business development. From this book, employees of industrial companies have the opportunity not only to draw inspiration for transformational changes and changes in their enterprises, but also to gain specific knowledge in terms of technology implementation and retain the potential effects of such implementation (Schaeffer, 2017).

Among the domestic researchers engaged in the disclosure of the content of smart industry in digital economy can be called V. P. Vyshnevsky, O. V. Vietska, O. M. Garkushenko, S. I. Knyazeva, O. B. Lyakh, V. D. Chekina, D. Yu. Cherevatsky (2018), O. Holoborodka, N. M. Kraus, K. M. Kraus (2018). Analysis of these recent studies has shown the need for a comprehensive approach to substantiate the paradigm of formation and mechanisms of development of Industry X.0 national type and transformation of traditional entrepreneurship in terms of its digitalization in new development of new economic relations determined by virtual reality.

The purpose of the article is to present the features of the formation and content of innovative-digital entrepreneurship as the foundation on which Industry X.0 is built in new virtual reality, which has every chance to be a decisive step in implementing digital development strategy through the introduction of smart assets, smart services. determine new quality of life in society.

Among the tasks set in the article are: it is argued to reveal key innovation problems that need to be addressed in the context of formation of Industry X.0; to present the existing global innovative-digital spaces that form virtual reality of the Industry X.0; provide an author's vision of the content of Industry X.0 and virtual reality; propose the order of the process of achieving confidentiality in digital enterprise; indicate the technologies that change business in the direction of its digitalization, the strengths and weaknesses of “digital managers” at the stage of formation of Industry X.0 in virtual reality; identify and disclose the content of CFO levels – 3600 and expectations in near future from the use of CFO tools in the activities of innovative-digital enterprise, defining the competencies of CFO –

3600 innovative-digital enterprises in the formation of Industry X.0 in virtual reality; specify the features of digital transformation of the enterprise with Office 365.

### 3. Prerequisites for the formation of Industry X.0

The formation of Industry X.0 is of great socio-economic importance for society, as it allows to provide the population with new quality of services, digitized economic relations, promote the acceleration of digital entrepreneurship, increase trust in all branches of government through the initiative of the President of Ukraine and strengthen the competitiveness of domestic products in foreign markets, giving services/products signs of innovation.

In addition, the emergence of new type of economy, namely digital economy, has become a scientific response to cluster, platform, ecosystem production, STEM education, digital entrepreneurship, industrial Hightech, RetailTech, LegalTech, InsurTech, GovTech, IoT. This, in turn, leads to systematic emergence of new digital technologies for the Industry X.0 to increase the digital competence of the population.

Industry X.0 is a new approach to organizing production in virtual reality environment. It is based on highly intelligent integrated new products and digital ecosystems, which form a fully innovative digital value chain, add new competencies and implement profound cultural changes in the direction of becoming new virtual reality. Reality-Virtuality continuum is interpreted by Paul Milgram and Fumio Kishino (Milgram, Kishino, 1994) as a space between reality and virtuality, between augmented reality (closer to reality) and augmented virtuality (closer to virtuality). We believe that virtual reality of the multiplayer world is based on the exchange of virtual goods within on-line environment. It creates an opportunity to interact with the artificial world through virtual platforms with available information funds on-line innovation market, the ability to work with cloud technologies (Kraus N., Kraus K., Anvrusiak N., 2020).

Consumers are already used to living in a digital world. Now industrial enterprises, as well as their employees, need maximum digitalization. This new format of "industrial consumerism" undermines decades-old habits, traditions and operating models of enterprises and companies. Not only the reasons for digital transformation in the manufacturing sector are important to industrial enterprises. Each company must find its own way to move to digital rails (Industry X.0) and form their own ecosystems with professionals with digital competencies.

"Live" devices, smart assets, smart services, data management are the basis of the concept of Industry X.0. This type of device and service is equipped with

software-controlled and Internet-connected sensors that collect various data, analyze it and send it to other connected devices. It is important to implement digital R&D processes, i.e. to implement a new approach to product lifecycle management. In fact, in new era of "live" data-driven devices, product development begins with digital lifecycle management strategy in the digital enterprise.

This strategy is designed to provide a hyper-personalized user experience. We are talking about the complete digitalization of the product life cycle in digital enterprise in new virtual reality. We are convinced that today it is urgent to ask questions like this: Is digitalization part of the DNA of a modern enterprise that creates the latest product/service? How to achieve digitalization of business activities? What are the competencies of digital employee of the company? We will try to answer these and other questions in this publication.

Exploring innovative-digital entrepreneurship as a key link in the formation of virtual reality of Industry X.0, it should be noted that there are important differences between innovation in services and manufacturing:

1. Service-sector innovation derives less from investments in formal R&D. More reliance on acquisition of knowledge/IP from outside sources acquisition and collaboration.

2. Human resource development is especially important to service firms. Indications that a lack of highly skilled personnel is a major impediment to service innovation in most OECD economies.

3. The role of newly established firms in innovative activity is greater. Entrepreneurship is a key driver of service innovation (but small firms tend to be less innovative than larger firms).

4. IPR protection is more important, especially on software and business method patents. Changes in policy regimes governing software-related patents and business method patents would impact service-sector firms, regardless of their actives.

Key innovation problems and limitations that need to be addressed on the way to the formation of Industry X.0 in virtual reality are presented in Figure 1.

In addition, the innovation system of any country requires coordinated action from a range of entities:

- *Demand for innovation*: consumers, government (final demand), producers (intermediate demand).

- *Framework conditions*: financial environment – taxation and incentives; propensity to innovation and entrepreneurship; mobility.

- *Industrial system*: large companies; mature SMEs; new, tech-based firms.

- *Intermediaries*: research institutions; technology transfer support organizations; technology services providers.

- *Education & research*: TVET; higher ed. & research; public research.



**Figure 1. Key innovation problems that need to be addressed in the context of the formation of Industry X.0**

Source: developed by the authors

– *Political system:* government; governance; STI policies.

– *Infrastructure:* finance; intellectual property regime (IPR); innovation & business support; rules & norms.

Industry X.0's innovation network today has more than 20 innovation spaces strategically located around the world and is part of Accenture's annual innovation investment of more than 1 billion USD. Table 1 presents the world's innovation and digital spaces, which form the Industry X.0 network.

#### 4. Features of innovative-digital entrepreneurship

As the key principles of transformation management, we propose to include: prioritization of projects (business results, not technical implementation, CAM, business cases, MVP); responsibility for the result (COS, CSI, OLA, SLA, MVP); right to error (R&D, Innovation); confirmed approach (pilot circulation); cross-functional approach (project office; roles, stages, goals, results). Technologies that change traditional business in the direction of its digitalization are presented in Table 2.

As part of the research problem in this publication, it should be noted that of course, without proper financial analysis, strategy and understanding of the company's bills can be paid, but management will not always be able to make the right decisions for the most successful and effective problem solving, cost reduction and withdrawal business to new level, namely digital. In addition, mistakes and lost opportunities for the company become more likely. The strengths and weaknesses of "digital managers" at the stage of formation of Industry X.0 in the conditions of virtual reality are presented in Table 3.

#### 5. Digitalization of the employee's work in virtual reality

Financial reporting alone is not always the best source for assessing the state of digital business or forecasting its trend. These are sophisticated tools that can be used in conjunction with other available data that need to be processed and analyzed for optimal answers. For example, a profit and loss statement and balance sheet may show a profit, but if you do not look deeper, it is likely that a decision will be made, as they say, "based on a picture, not a feature film". A good example: staff reductions are not always the best solution if the decision is not made in combination with capacity analysis (including revenue flow analysis), matching resources to business goals. Management needs an impartial third party that interprets and explains exactly what the data indicates and what full impact it can have on the business.

For these reasons, CFO 360 (Chief Financial Officer – Chief Financial Officer/Vice President of Finance, Chief Financial Officer, Deputy Chief Financial Officer) was founded by Bob Pantaliano, a US CFO with 25 years of experience (Towards the digital world and Industry X.0). The goal of CFO 360 is to enable small and medium-sized companies that cannot afford to hire a full-time CFO for competitive support. Knowledge of B. Pantaliano, a professional American financial and operational advisor, is based on many years of experience in strategic management of functions of financial and operational director.

The developer is convinced that each company needs a unique plan, and each task requires an individual solution. With extensive experience working with organizations in the service, non-profit and manufacturing sectors, he proposed the so-called CFO 360, which provides flexibility to work on a project or permanent basis, on site or remotely, spending as much

Table 1

**Global innovative-digital spaces that shape the virtual reality Industry X.0**

City	Name of innovative-digital space	Specialization and focus on innovation in the following areas
Ann Arbor	Forge	Connect digital products and services
Bangalore	Innovation Center	Digital engineering, digital manufacturing and various digital operations
Barcelona	Analytical Innovation Center	Analytics and supply chain, digital production and various kinds of digital operations
Bilbao	Industry X Innovation Center	Connect digital products/services, digital engineering, digital production and operations
Budapest	Center of Excellence in Industrial Automation	Digital engineering, digital production and operations
Cluj	Center of Excellence in Industrial Software	Connect digital products and services, digital engineering, digital manufacturing and operations
Columbus, Ohio	Forge	Connect digital services and products
Des Moines	Forge	Connect digital services and innovative products
Detroit	Industry X Innovation Center	Connect digital products and services, digital production and digital operations
Dublin	Dock	Artificial intelligence, analytics and the Internet of Things with a focus on connecting employees, "deep" manufacturing, digital entrepreneurship
Essen	Industry X Innovation Center	Digital engineering, digital production and operations
Garching	Industry X Innovation Center	Connect digital products and services, digital engineering, digital manufacturing and operations
Houston	Center for Innovative Resources	Digital production and connection of digital products/services
Istanbul	Industry X Innovation Center	Connect digital products, digital production and digital operations
London	Industry X Zone	Connecting digital products and services, digital engineering, digital manufacturing and operations
Modena	Industry X Innovation Center	Digital production and operations
Paris	Industry X Innovation Center	Digital engineering, digital manufacturing and digital operations, digital product connectivity and digital services
Perth	Innovation Center	Digital transformations of energy companies, digitalization of mining industry in terms of strengthening their competitiveness and growth
San Francisco	Innovation Center	Digital production and operations, digital engineering, digital services and product connectivity
Shanghai	Digital Center of Greater China	Digital engineering, digital product and service connectivity, digital manufacturing and digital operations
Shenzhen	Innovation Center	Digital products and services, digital engineering, digital manufacturing and digital operations
Singapore	Center for Innovative Resources	Center of production and operations
Sofia Antipolis	Resources of innovation center	Digital engineering, digital production and operations
Tokyo	Innovation Center	Digital manufacturing and operations, digital engineering, digital product and service connectivity
Turin	Center for Automotive Industry Solutions	Connect digital products and services

Source: compiled by the authors based on (Innovatsionnaya set Industry X, 2020; Towards the digital world and Industry X.0, 2020)

Table 2

**Technologies that change the business in the direction of its digitalization**

Elements of business processes	Technology
Management	BD, ML, RA, Rent
Finance and Accounting	BD, ML, AL, SC
Strategy	BD, AL, BD, AI, Analytics interpretation, ML, SH
Marketing & Sales	BD, Soft, New channels, targeting, personalization, online, time
Logistics	Automatically storages, delivery, better logistic, just in time, drones, Storage like services
Production	Automatically, robots, 3D printings, custom design, quality control, ML
Security	Cyber, IT, BD, sensors, video, AI, SH
Right	AI, ML, chat bots, SC, BD
Frames	BD, remount, office cut, ML, AI, SC, e-learning
Purchases	Just in time, storage outsourcing

Source: author's development



Table 3  
**Strengths and weaknesses of “digital managers” at the stage of formation of Industry X.0 in the conditions of virtual reality**

Strengths and weaknesses of “digital managers”	
+	-
<i>pure-play digital / vc / tech R&amp;D</i>	
experience in digital (pure-play) business; high customer orientation; deep understanding of modern technologies and innovations	poor understanding of traditional business with long chains and production processes
<i>technology ventor</i>	
deep and detailed understanding of technology, innovation	potentially a “technological” narrowness of vision limited solely by technology
<i>consulting / science / education</i>	
technological awareness and a wide range; strategic thinking; powerful communication skills and vision of negotiations	lack of experience in implementing and implementing changes
<i>cio / cto / ciso</i>	
technological literacy and a wide range; knowledge of technological architecture; considerable experience in the implementation and implementation of projects	lack of understanding of the needs of the consumer/client
<i>successful in digital transformation</i>	
strategic thinking; understanding the impact of technology on business processes and customer/consumer behavior	lack of understanding of technological architecture

Source: author’s development development of authors

time as mutually agreed and required for any choice of services to best meet customer needs. CFO 360 allows you to work honestly, stating fees, deadlines and expectations from the beginning and working closely with clients. In fact, the level of service is so high that it allows you to limit the number and types of tasks taken to provide the highest level of professional attention and service.

We consider it necessary to note that CFO – 3600 has several levels, namely:

1. Strategic level (10%): strategic thinking, deep understanding of business models, innovation (financially sound), leadership skills and ability to implement.
2. Communication level (30%): ability to communicate, deep understanding of best business process practices, managerial skills.
3. Technical level (60%): 80% of financial staff perceive the CFO according to the level of his professional competencies.

Table 4 presents CFO Time-management for today and expectations for future.

Table 4  
**CFO Time-management**

	Now	There must be
Financial analytics	30 %	30 %
Strategy	10 %	50 %
Accounting	30 %	10 %
Financial statements	30 %	10 %

Source: development of authors

CFO tools:  
 – to increase competencies within the financial service and delegate (dependence on individuals);

- to use outsourcing actively (the ability to build partnerships);
- to use cloud solutions actively (readiness of architecture, economy) (Table 5).

Table 5  
**Expectations in the near future from the use of tools in the activities of innovative-digital enterprise**

Direction	Internal competencies	Cloud solutions	Outsourcing
Cloud ERP, CRM, CMS		+	
Cloud tools for analyzing information – Power BI		+	
Team management tools – MS Team		+	+
Strategic planning	+		+
Business Intelligence	+		
Valuation of investment returns	+		
Accounting		+	+
Payroll calculation		+	+
Compilation of financial statements	+		+

Source: development of authors

Changes in the role of CFO are as follows:  
 – Strategic positioning/analysis: environmental analysis (competitors, market, regulation) – helps to find opportunities and threats; analysis of resources and competencies – helps to identify strengths and weaknesses;  
 – Determining the expectations of major stakeholders;  
 – Strategy choice: strategic options (organic development, purchasing, vertical integration); evaluation of options and choice.

Regarding the competencies of CFO – 3600 innovation and digital enterprises in the formation of Industry X.0 in virtual reality are as follows: skills of planning, forecasting, business process management; focus on success and strategic thinking; ability to effectively conduct dialogues and establish business contacts. However, in the group of financial competencies of the CFO at a digital enterprise and allotment remain:

- Organization of risk management system;
- Mastery of methods of valuation and value management of the company;
- Knowledge of international financial reporting standards.

The managerial competencies that should be inherent include:

- Ability to form a team and work in it;
- Strategic thinking;
- “Reasonable” disposal of their time;
- Ability to delegate authority;
- Ability to effectively negotiate, both with external counterparties and internal;
- The ability to find ways to develop the enterprise, company.

## 6. Digital transformation of the enterprise

For digital enterprise, specialists with a wide range of competencies are valuable for the implementation of global tasks of business entity, such as the formation of financial policy, setting up a system of budgeting and accounting in the enterprise. It is these needs that necessitate digital transformation of the enterprise from Office 365 (Table 6).

However, in order to be able to quickly and efficiently implement digital management through the Boards of Directors (Figure 2) requires a number of innate and mastery, acquisition and expansion of such competencies as:

- Communication;
- Cold-bloodedness;
- Discipline;
- Confidence;
- Innate leadership qualities;
- Possession of developed analytical skills;
- Ability to maintain professionalism under any circumstances;
- Modernity, innovation, competence (ability to use modern technologies);

Table 6

### Digital transformation of the enterprise with Office 365

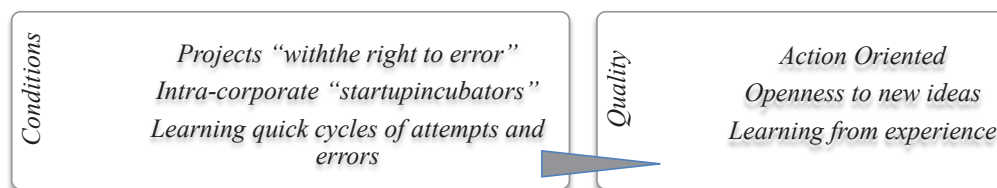
<b>Tasks that are being decided within the framework of digital transformation project of enterprise:</b>	<ol style="list-style-type: none"> <li>1. Migrate part of on-premises IT infrastructure services to the cloud: Exchange Online and Office 365</li> <li>2. Improve mobility and communication for 250+ internal users with external customers: Skype for Business</li> <li>3. Configure cloud integration with your own mobile applications</li> <li>4. Ensure dynamic expansion and more flexible connection of ex-ternal users</li> </ol>
<b>Top challenges and threats from implementing Office 365 Enterprise</b>	<ol style="list-style-type: none"> <li>1. Narrow and strict timeframes</li> <li>2. Features of deployment on different types of tools (Windows, Android, iOS, MacOS)</li> <li>3. The need to carry out work remotely</li> </ol>
<b>The expected result of migration in Office 365</b>	<ol style="list-style-type: none"> <li>1. Start digital transformation of the company</li> <li>2. Improve the functionality and integration of internal systems</li> <li>3. Optimize support costs</li> </ol>
<b>Office 365 as a Technology Transformation Tool:</b> <ol style="list-style-type: none"> <li>1. Office 365 E3</li> <li>2. Exchange Online</li> <li>3. Skype for Business</li> <li>4. Microsoft Intune</li> </ol>	<p>Changing the paradigm of labor relations: not working for a company, but cooperation:</p> <ol style="list-style-type: none"> <li>1. The growing potential of Microsoft teams is to allow people to suddenly create their own groups, manage the workforce (depriving management of the need for micro-management).</li> <li>2. Skype, Yammer – means of free communication between people.</li> <li>3. Open opportunities for broadcasting creative ideas – convenient processes, forms, applications.</li> <li>4. One drive – a single data access drive without file servers with personal folders.</li> <li>5. Personal productivity – task lists, calendars.</li> </ol>
<b>Results:</b>	<ol style="list-style-type: none"> <li>1. Building a Hybrid Exchange Infrastructure: Debugged Integration with On-Premises Systems and Own Applications</li> <li>2. Creation of a basic policy on remote management of mobile means</li> <li>3. Created installation package Office 365 Pro Plus</li> <li>4. Migration of mail boxes of the selected group (250+) users</li> <li>5. Full technical support from Info pulse is provided</li> <li>6. Training of technical specialists was conducted</li> </ol>
<b>Values for entrepreneurship</b>	<ol style="list-style-type: none"> <li>1. Migration has passed without disrupting business processes – invisibly for end users.</li> <li>2. Unified sphere work on different types of means is ensured (Windows, Android, iOS, MacOS)</li> <li>3. Improved communication between users: external and internal</li> <li>4. The benefits of cloud technologies are provided: great flexibility, safety, reliability, access anywhere</li> <li>5. Savings on the cost of migration and license</li> <li>6. Optimized technical support costs</li> <li>7. Increased handling and security of mobile means</li> </ol>

Source: development of authors



**Figure 2. Implementation of “digital management” through the Board of Directors**

Source: development of authors



**Figure 3. Reserve potential**

Source: development of authors

- Team player, the inherent team spirit;
- Fluent in several foreign languages;
- Curiosity.

It is in the course of formation of digital entrepreneurship, formation of competencies, improvement of knowledge, acquisition of new skills that are the steps that need to be taken for both career advancement (Figure 3) and the formation of digital entrepreneurship in new virtual reality of the 21st century, which is also exacerbated by both global economic challenges and COVID-19 pandemics.

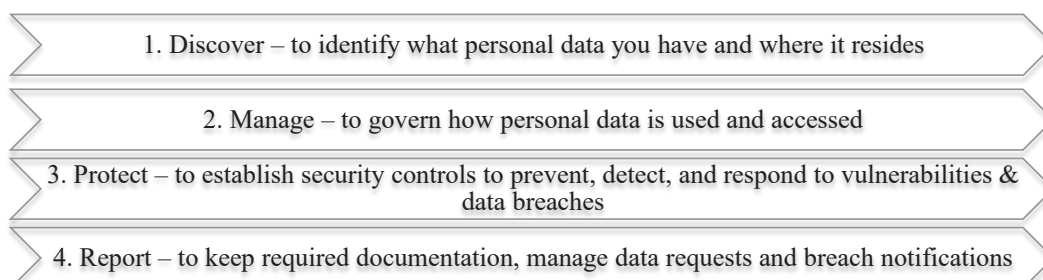
Due to the difficult financial and economic situation, the values of both CFOs and employees with digital competencies are growing many times if they also have the basics of strategic marketing, crisis management and risk management. It is impossible to achieve high efficiency and confidentiality without security through

the implementation of innovative projects within the digital enterprise. The implementation of the achievement of confidentiality through the work of the Security Institute is presented in Figure 4.

Pursuing the goal of fastest possible development of digital entrepreneurship as a key part of Industry X.0. in the context of virtual reality, we consider it necessary to suggest key areas in which to reform innovation policy (Figure 5).

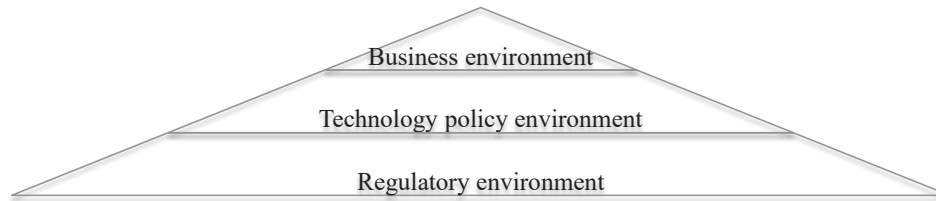
*Business environment (Finance, strategies and institutions):*

- Vibrant capital markets;
- Chum and change accepted, embraced;
- High level of entrepreneurship;
- Cooperation and collaboration part of culture;
- Strong ICT adoption, especially among business;
- Strong managerial skills.



**Figure 4. The process of achieving confidentiality in digital enterprise**

Source: development of authors



**Figure 5. Levels of innovation policy in terms of the formation of digital entrepreneurship in virtual reality**

Source: development of authors

*Technology policy environment (Supportive key building blocks of innovation):*

- Education and skills;
- Technology research and commercialization infrastructure;
- Digital technology infrastructure and ecosystem.

*Regulatory environment (Innovation enabling framework for organizations):*

- Pro-innovation tax system;
- Competitive and open trade regime;
- Ease of starting business;
- Transparency and rule of law;
- Support for competitive product;
- Limited regulations on the digital economy;
- Government procurements based on performers standards.

In the world of data-driven digitalization, all traditional industrial enterprises in new virtual reality must become part of a single digital ecosystem, and many of them require separate platforms. Using the platform in combination with the ecosystem, you can make your business a generator of innovation and growth.

Two-thirds of world's leading next-generation companies believe that building trusting, mutually beneficial relationships with all business participants is the key to digital success. Many industries are increasingly turning to platforms and ecosystems to drive further innovation and digital growth. In the 21st century, revolutionary changes are "in full swing", changing the rules of the game in a competitive modern virtual-real market. You need to be able to predict change and be at the forefront.

## 7. Conclusions

In conclusion, it should be noted that indeed the development of innovative-digital entrepreneurship is the foundation on which national Industry X.0 is built, in addition, in today's new virtual reality. Digital

component of Industry X.0 is the element that helps companies use, quickly deploy and scale the latest digital technologies and services. Thanks to the brightest innovators and their high professionalism, the latest technologies and existing industry experience, companies can innovate using advanced technologies to ensure continuous digital transformation, new growth and improve customer service.

As a result of the formation of digital entrepreneurship as a key component of Industry X.0 in terms of virtual reality is expected to stimulate innovation (product diversification, innovative business models, flexible organizational structure); formation of consumer value (increased choice, convenience, market transparency, distribution of resources and financial assets); opening of markets (possibility of access to the market of small and medium digital business entities, expansion of export opportunity); reduction of transaction costs (low information, communication, logistics costs); increasing the density of disparate economic digital agents, intensifying interactions through digital technologies in new virtual reality; digital transformation of the role and significance of the state, change of relations of society, business, science and the state in the direction of their digitalization; improving well-being (allocation efficiency, standardization, trust, efficient use of digital technologies, generation of quality information data, which can be of added value); digital transformation of the institution of intermediaries through the integration and unification of interaction processes throughout the value chain; growth of labor productivity and efficiency of innovative entrepreneurial activity.

Whether the goal is to digitally transform operations, upgrade products, improve customer and employee service, or implement new business models, it is the innovative space of digital enterprises that is the ideal place to explore and realize new business opportunities.

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