

# INTERNATIONAL CONFERENCE

“Current challenges in the era of pandemic,  
economic crises and migration processes”

15-16 December 2021



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## ISSN 2273-2640

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Advance Science Index  
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## About InterRegioNovation

**InterRegioNovation** is the International Association devoted to the transfer and exchange of knowledge and innovations at all regional levels (country, region, city, community etc.) between knowledge transfer professionals (business, research institutions, policy makers, government agencies, individuals, others) in all countries of the enlarged Europe, CIS countries and from other continents for stimulating and enhancing economic and social growth in the regions.

This is a policy and research association that brings together all knowledge transfer professionals who are interested in delivering efficient, flexible, innovative and cost-effective services across the private and public sectors. We work closely with business, research and educational institutions, government agencies, policy makers, NGOs, media, individuals and other stakeholders to promote the interests of their industries.

Our members understand the changing needs of the transfer and exchange of knowledge and innovations and through continuous professional development, marketing and networking opportunities offered in this association, we keep current with the latest knowledge trends and issues that challenge people in their work and life journey. We also offer expansive opportunities for partner connection through our networks.

Journal "Regional Innovations" is one of the Association's tools for innovators and everybody who is interested in any aspects of innovation development.



[www.irn.center](http://www.irn.center)

### Contacts:

E-mail: [info@irn.center](mailto:info@irn.center)

Address: 16, rue de la Roche,  
Crégy-lès-Meaux, 77124, France

Tel. : +33 6 48 18 86 95

## About journal

On behalf of the Editorial Board, it gives us a great pleasure to welcome you to the third issue 2021 of the Regional Innovations Journal. This is a special issue dedicated to the International Conference ***“Current challenges in the era of pandemic, economic crises and migration processes”*** (15-16 December 2021).

The aim of the conference was involving a wide range of experts in discussing important trends and development of business and government strategies towards sustainable development in the era of pandemic, economic crises and migration processes. COVID-19 has governments at all levels operating in a context of radical uncertainty. The international economic, cultural and political pressures have compelled companies and Government agencies to integrate new dimensions into management, in particular digitalization policies. Organizations around the world are contemplating alternative approaches to make business in current conditions, considering the National, regional and global implications. Despite the pandemic created a health crisis across the world and impacted negatively the global economy and societies, it also created new openings for managing systemic challenges, and ways to build back better. It offers decision-makers a comprehensive picture of expected long-term changes, and inspiration to leverage the opportunities this crisis offers to improve the state of the world.

This is an independent, peer-reviewed, Internet-based international journal devoted to publishing original research papers of highest quality, sharing ideas and discussing innovation sector within regional dimensions. The journal welcomes to submit research papers by exceptional innovators, leading universities, globally recognized business, government agencies, policy makers and political leaders. The Regional Innovations publishes original research papers, policy analyses, review papers and book reviews in order to establish an effective channel of communication between business, research institutions, policy makers, government agencies, and individuals relative to the analysis of various aspects of knowledge and innovations transfer and exchange within regional dimensions.

We intend that our readers will be exposed to the most central and significant issues in innovations development. We wish to publish papers that exemplify the highest standards of clarity, and that promise to have significant impact on existing front-line debates or to lead to new ones. The journal explores key priorities of the knowledge and innovations transfer and exchange in terms of critical aspects of human life (economy, law, science, business, health, education, culture etc.). We therefore welcome submissions not only from established areas of research, but also from new and emerging fields and those which are less well represented in existing publications, e.g. engineering studies, biomedical research etc.

We are delighted with, and immensely grateful to the large numbers of colleagues, both members of the Associations InterRegioNovation and FranceXP (France), representatives from many universities in France, UK, Spain, Ukraine, Latvia, Belarus, Azerbaijan, India, China, Viet Nam, Iran, Nigeria and other institutions, who have supported the editorial process. And we are very proud of the expertise that they collectively bring, which we believe is unsurpassed by any contemporary innovative journal. We are immensely grateful to our colleagues for their support and advice through the process of setting the journal up, and for the confidence they have placed in us in supporting this initiative at a time of economic uncertainty.

In the development of the Regional Innovations to date, we would like to enlist the support of a number of organisations who wish to promote this online journal to their experts. To ensure its sustainability, we would also like to invite other organisations, networks, conferences and meetings to associate themselves with the Regional Innovations. Being an online periodical, the Regional Innovations is also a forum for exchange of imaginative ideas readers wish to share.

We do hope you enjoy and benefit from the Regional Innovations! And many thanks for staying with us in 2022!

**Jean-François Devemy**  
Publishing Director

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## SECTION 1:

# ECONOMIC AND SOCIAL CONSEQUENCES OF PANDEMIC: SCENARIOS FOR THE WORLD AND NATIONAL ECONOMIES

*Tetiana Zatonatska*  
*Doctor of Economic Sciences, Professor,*  
*Economic Cybernetics Department,*  
*Taras Shevchenko National University of Kyiv,*  
*Kyiv, Ukraine*  
[tzatonat@ukr.net](mailto:tzatonat@ukr.net)  
ORCID [0000-0001-9197-0560](https://orcid.org/0000-0001-9197-0560)

*Olga Anisimova*  
*Ph.D, Senior Researcher,*  
*State Scientific Institution «Institute of Educational Analytics»,*  
*Kyiv, Ukraine*  
[olgaanisimova@ukr.net](mailto:olgaanisimova@ukr.net)  
ORCID [0000-0002-6721-3030](https://orcid.org/0000-0002-6721-3030)

## EU MIGRATION POLICY AS A RESPONSE TO THE HYBRID WAR

JEL Classification: F22

### Abstract

In the context of the hybrid war threatening national and economic security of the EU members, the development of a decisive migration policy becomes especially important, as the refugees are used as a weapon of war to destabilize the situation at the borders of the EU. It became obvious that it is necessary to distinguish between those who could really receive a refugee status and those who only try to use the environment to their advantage. To facilitate that process, we propose to create an independent international organization as a part of the UN to assess new arrivals and to return them home if needed.

**Keywords:** hybrid war, migration policy, refugee crisis

## **Introduction**

Migration is not something new, but until recently its scale and distance were rather small. Economic development and technological progress created vast possibilities to expand the migration process. As a result, the states became cautious and started closing their borders to immigrants to regulate the incoming arrivals. That led to the division of the migration to legal and illegal. With the development of globalization processes and sufficient free movement of labor, skilled personnel, the problem of legal and illegal migration has gradually become part of public policy for many countries. International migration and the state migration policy have recently become especially important for national and economic security. Among the main components of migration policy are the principles of attracting international immigrants to the national economic system, the treatment of illegal immigrants and refugee policy. An example of the attempts of the formation of national and supranational migration policy is the migration policy of the EU, which showed significant differences and inconsistencies between the national migration policies of the member states.

## **Research Results**

There are two main components of modern migration: legal migration and illegal migration and refugees. Legal migration implies that the state deliberately attracts certain categories of the population to enter the country for the purpose of further employment or other purposes that contribute to the economic growth and development of the host state. Illegal migration policy defines the treatment of refugees and immigrants who enter the country illegally. It can provide for both the immediate expulsion of illegals from the country and a program for the integration of such immigrants into the economic system and labor market of the state.

The problem of refugees has become particularly acute in the scientific literature with the unfolding of the "refugee crisis" in Europe. The issue is that there is a difference in international law between illegal immigrants and refugees. And if a country has every right to deny an illegal migrant a stay in its territory, it must give refugees the opportunity to apply for asylum, consider that application and make an informed decision. All this time, refugees have the right to stay in the country, which poses a threat to national and economic security. It should be noted that the very concept of refugees is one of the most controversial in theories of international politics and international security. The issue is that there is no clear concept and criteria for defining a "refugee".

At the end of the twentieth century, not only international migrants but also refugees began to grow rapidly, which is a problem for host countries because they are recipients of social protection. As a result, developed countries, which have encouraged not only

legal but also illegal migration, have faced the need to fund refugee support programs amid the global economic crisis. As a result, the priorities of the state migration policy have undergone significant changes. The priority of the countries was to attract legal target groups of immigrants, which will bring the maximum benefit to the national economy and pose the least threat to the national and economic security of the country. The inability to develop a common migration policy, to create universal principles and priorities showed deep economic differences in the level of development of different EU countries and created all the preconditions for the development of the migration crisis in these countries.

For a long time, EU countries have pursued a policy of attracting immigrants, especially from low-income countries. This was due to the demographic crisis, the reluctance of the local population to work in positions that do not require qualifications and work experience, i.e. are low-paid. As a result, favorable conditions were created for immigrants, they received help and support in obtaining citizenship. However, as the political and economic situation in Africa and the Middle East worsened, the number of immigrants began to grow. In addition, the crisis in the world economy has reduced the ability of the EU countries to provide support to migrants. Gradually, this led to an influx of illegal migrants and refugees into the EU. This has forced EU countries to reconsider their national migration policies. In fact, already in 2014, the countries of the European Union almost lost control over migration flows.

From the beginning of the XXI century, the regulation of migration processes has gradually become a priority in shaping the policy of the European Union in the field of economy and international relations. In particular, the EU sought to establish a "comprehensive migration policy", which provided for the definition of general basic principles for the admission of third-country nationals to the territory of the EU Member States, while ensuring the protection of the EU's common border. However, during the negotiation process it turned out that, since the EU countries differed significantly in the level of development, economic structure, national migration policies, it was very difficult to agree on a common strategy in the field of migration policy. The problem was also that the migrants themselves preferred only certain EU countries, so they were not satisfied with moving to the least developed members of the European Union, which they considered as transit zones. The global economic crisis of 2008 created additional problems on the way to forming a unified EU migration policy. This was due to the fact that in some member states there was a significant reduction in funding for the implementation of pan-European initiatives, which included migration policy. This was especially true in the southern EU countries, as well as in Ireland, where there was a significant reduction in budget expenditures, which were among the first to reduce the

cost of immigration integration programs. Moreover, some EU countries have begun to refuse to allow refugees to stay in their territories while they are awaiting asylum, citing a lack of resources.

Another problem with refugees was that most of them themselves did not want to stay in less developed countries, so they actually became transit points. For example, at the peak of the crisis in 2015, about 50% of refugees came from Syria, Iraq, Afghanistan and Albania, and they wanted asylum in Germany and Sweden. They used Hungary, Greece, Italy, Austria, Croatia and Finland as transit points. In response, Hungary closed its border with Serbia, and Germany imposed temporary border controls with Austria. Austria, Slovakia and the Netherlands have also taken similar steps. Moreover, in Hungary, any illegal border crossing, regardless of the cause, has become a criminal offense. Another problem for national and international security has been the behavior of refugees in host countries and the attitude of the local population towards them. The reluctance of refugees to abide by local laws, norms and traditions, disrespect for national culture provoked opposition from the local population and internal conflicts, which became a threat to the internal security of the host countries.

As a result, the EU was faced with a new task, which was to develop new principles and action programs for immigration policy that would be acceptable to all member states. Unfortunately, EU countries have failed to develop a common immigration policy, as each country has its own approaches and needs for immigrants. Moreover, some EU members categorically objected to the so-called "migrant quotas" because they did not want to allow refugees into their territory. In particular, one of the slogans of the British political forces that supported Brexit was to prevent new immigrants from entering the country. It should be noted that the EU's "common" immigration policy does not provide for a single set of rules that is identical for all countries, but only follows common principles, goals and principles based on subsidiarity.

In response to the migration crisis in the EU and a number of other countries, in September 2016 the UN adopted the New York Declaration on Refugees and Migrants, which provided for future global agreements to regulate international migration, creating common standards for migrants and refugees. In December 2018, the UN General Assembly considered the Global Compact on safe, orderly and legal migration, the basic principles of which were state sovereignty, non-discrimination, respect for human rights, division of responsibilities and development of international cooperation, awareness that all countries have an interest in safe and legal migration, as well as respect for the rights of migrants. The agreement provides for the achievement of 23 migration management goals at various levels, from local to global. The main focus of the agreement was on

obtaining reliable statistics, facilitating legal migration, eliminating the causes of migration in general, preventing human trafficking, combating discrimination, facilitating remittances and more. Although the Treaty has been adopted as a basis, its terms and principles are currently being incorporated into the national legislation of the signatory countries. This raises some problems, as not all countries agree with the provisions of this Treaty.

### **Discussion and Conclusions**

Using the lack of common international law regulating the migration and refugees they became a tool of the hybrid wars. It's rather obvious that ordinary citizens of the countries that have conflicts on their territories are not capable to migrate far without external assistance due to the deficit of resources, border control etc. So, to get from such countries as Syria, Iraq, and other African countries the migrants need to use the services of the intermediaries. They have to pay for it and are attracted by the promises of better life and social benefits of the developed countries. As we can see, one of the examples is the situation at the border between Poland and Belarus. The “refugees” are recruited at their home countries, delivered to the border and are used as a weapon to destabilize the situation. Using the principles of the international law, that refugees are to be granted an opportunity to plead their cases and seek asylum, they became a burden for the host country. The host country is forced to create detention centers, feed the migrants, process their applications and in case of the refusal return them home at their own expenses.

To facilitate the resolution of the crisis we propose to create a special commission as a part of the UN financed by the fees paid by all the member states to regulate the situation of the refugees. It needs to become a law that the applicants denied the “refugee status” are to be returned home and fined heavily to finance the operational costs of the Commission. That way the ‘refugees’ will be less willing to risk been denied the asylum and their home countries will be more careful with their policy to use their citizens to burden other countries.

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*Justin Ojumobi*  
*Pre-doctorate Student,*  
*International Institute of Paris,*  
*Paris, France*  
[chineduo30@gmail.com](mailto:chineduo30@gmail.com)

## **THE IMPACT OF COVID-19 ON THE ECONOMY AND SOCIETY: A CRITICAL APPRAISAL**

### **Introduction**

Many years ago, we thought that the world will be put to a stop by the use of atomic bomb or ballistic missiles, little did we know that the world will be at a standstill because of a microscopic virus called corona virus (COVID-19). There and then I started changing my mind with regard to the movement of things in life and the effect of this pandemic, to the point of regarding it as a major potential tool for the sake of realizing a more just and progressive society especially in the area of trade and business. The aim of this article is to briefly explain the reasons of this change of mind after my initial skepticism, and the effects of COVID-19 on world trade/business.

### **COVID-19: undesirable yet desirable**

At the root of my initial skepticism towards COVID-19 was the conviction that this virus was an undesirable phenomenon meant to destabilise the economic system and thus lead to a very difficult life. Why did I say undesirable? Because it appears to be an ill-wind that blows no one any good. In the first place, it has led to the privation of liberty of all kinds and also to loss of lives and loss of businesses. It could be described undesirable because it appears to have come when the world seems not to have been prepared for it.

However, the impact of COVID-19 could be understood from different points of view. For some people it is a catalyst which has come to change our mode of living and speed up business actions and reactions, and to others it is a cataclysm that has come to set us back in our progressive system of living. Be that as it may, it is interesting to know that we cannot talk of the impact of COVID-19 on the world trade without talking of human person, because the place of human person is important in analyzing business relations, especially with regard to respect, solidarity and liberty. These cannot be possible if we don't understand the real impact of COVID-19.

### **COVID-19: more desirable than I thought**

Most powerful in affecting my views on the desirability of COVID-19, was when I saw how the world was busy applying social distancing, ethical rules and behavioral principles, and in the same society another group of people were busy closing the gap, creating a world without distance, with more business profits and less human hazards. These group of people are the internet driven businesses, not excluding internet driven universities. As COVID-19 tries to separate us through social distancing, the internet driven business tries to close the gap, while widen the horizon of business. We can say that the major problem of internet driven business is fraud. But fraud is a human factor and not internet problem, once humans can get rid of fraudulent mentality and embrace respect, solidarity and liberty, there will be no fraud in business. For there to be sustainable world trade, there must be respect for human person, solidarity among business persons, and liberty which goes beyond self-development to interpersonal trust, thereby giving us an enabling environment for businesses, which gives us access to income and wealth. That is why many centuries ago, John Donne an English poet, observed that “no man is an island”. One can apply this dictum of Donne to the world trade, by highlighting the importance of interdependence and interpersonal relationship, enshrined in the liberty of purpose in the world of business. The changing and spreading effects of COVID-19 in and around the world of business gave it a globalized nature.

### **COVID-19 a paradigm shifter or a paradigm paralyzer?**

The only thing that is constant is change, says Heraclitus an ancient philosopher. The world doesn't seem to like change but even when they do, it is not like the drastic change of COVID-19. However, no matter how you look at it, COVID-19 has taken flesh and it is here with us, and what we should be thinking now is how to move along with the change in motion brought about by the pandemic. The wind of change can come from any pole: east, west, north and south. The following can as well bring about change in our economy or in our society: war, disease, religion, culture, science and technology. However, our nature, with the capability to adapt to this wind of change through our endowed rational faculty, gives us advantage to think and rethink our relationship with this phenomenon COVID-19. That is what distinguishes us from other animals, who neither think nor complain of COVID-19.

### **The civilizing power of COVID-19**

COVID-19 subjected the world to a litmus test, whereby the state of our preparedness and foresightedness in trade and business are been questioned. Although some companies appear to have foreseen the circumstances and got themselves prepared in advance. For example, a multinational company like Amazon, which started many years ago in 1994, did not know about COVID-19 before embarking on online business but

today it is able to contend the effect of Corona virus. Many universities did not know of COVID-19 before embarking on online studies. The originator of 'Zoom' application since 2011 never knew that it will be one of the leading ways of learning and communication. As I have said before, the wind of change can come from anywhere, all we need is to be prepared and be visionary oriented. The transformative and the civilizing power of COVID-19 has reduced the hassles and cost of travelling, giving people opportunity to attend to their needs from their homes, thereby gaining more time, and reducing travelling hazards. Online business is not only future business but it is already with us. Even, securing visa to travel for studies and work in a foreign country could be limited to people's home. Social media is going to become more easy ways to advertise, that is why we should think of making more use of the positive aspect of it. We must develop more of our communication skills to reach out to people, with respect to non-violent verbal communication, that is, self-respect and respect for others during communication while doing business. We should learn to create more of e-space and e-time for gatherings and meetings through the internet. Companies should be thinking of training more of their workers in economics, statistics and internal/external internet security. Universities should embark on formation of more cybersecurity engineers to checkmate the e-business fraud, training of more marketing agents who have the internet technical know-how and are more advert pro-active, using social media and all possible means to reach-out to people. We should also use some artificial intelligence means, which appear to cost less but with much effective results.

However, we should not forget that anything that has advantage has also disadvantage. The hypocrisy of COVID-19, shows that, all that this clarion call of change brings about are not roses. The impact of COVID-19 which appears to change and speed up our way of living, will equally reduce physical contacts, interpersonal relationship, promote non-verbal communication, thereby making us more of computer *geek* in search of business links. On the other way, it may make us lazy and may put some people out of job, however, it enhances the productivity and the capacity of man. An example of this artificial intelligence is computer and robots which can come in different forms. Irrespective of the negative impact of COVID-19 on the world trade, it has also brought to our consciousness that we should always think of business reservoir or business back-up for unforeseen circumstances. We are now obliged by the virtue of necessity to re-invent new ideas of doing business. In as much as we cannot over-emphasize the justification about COVID-19, let us be more interested in thinking of how to be incorporated and be integrated in the new ways of doing things for a better future. 'Life can only be understood backwards, but it must be lived forwards' so says a philosopher Soren Kierkegaard. This means that we must learn from the past of others, and from our own past, so as to build a better future. In order for a business to grow we have to

nurture and culture our business, and that means that we have to maintain a network like food-web or food-chain for a business to have a proper network. Feedback is a necessary tool to a sustainable business. Just think ahead of yourself and you will not be disappointed in yourself tomorrow. The negative impact of COVID-19 can be seen here and now, but the positive impact will be seen there and then. According to Friedrich Nietzsche, 'what doesn't kill us, makes us stronger'. The spirit of resilience and being visionary should be our watch-word in the world of business and trade.

## **Conclusions**

COVID-19 is an undesirable but necessary crisis for a better business re-positioning. With the effect of COVID-19 on the world trade, it becomes non-negotiable to dialogue with the present situation of things with regard to health and economic crisis. It is obvious that a new dawn has arrived. The world of business is now the world of numbers. Business transactions are now done with codes, we are being recognized by our account numbers and no more by our real names. We now have microchipping humans with microchip implant helping to access homes, offices, by just swiping our hands against a digital reader. Students are now being accessed by their student's identity numbers and no more by their names. In the banks and offices, we are called by our code numbers and no more by our names. The embassy does not know us by our names rather by our visa numbers, the airport service recognizes only our barcode. Little wonder an ancient philosopher Pythagoras born in 570 BC (Before Christ) said, 'life is a matter of numbers'. Today's business does not absolutely need us in person but rather our numbers or codes. And should we think of doing business in this number-oriented world we must also reduce ourselves to numbers by taking cognizance of our passwords which are our future in business. Our passwords are our future because they are geared towards our attainable goals, and our identifying numbers are our yesterdays because they depend on the business concepts we have created, and today is me, because I am the only person that has the e-code to open the e-space within an e-time to welcome new ideas and to allow it to diffuse to other people, through their e-numbers or e-codes. Let us embrace the impact of COVID-19 by allowing ourselves to move from the world of COVID to the world of *CODE-VITE* (moving faster with our codes but in a lively way) that should be a better response to the impact of COVID-19 on the world trade and society.

## **INVESTIGATION OF THE CO-MOVEMENT TRENDS IN THE PRICE DYNAMICS IN THE PRECIOUS METALS MARKET**

### **Abstract**

Current trends in developing global economic emphasize the unresolved issues of financial activity. In the modern world the economic situation increasingly depends on the market of precious metals, which in fact becomes an alternative to currency reserves. The market of precious metals occupies one of the leading places in the global economy, because possession of such resources is a significant advantage for any country. The conditions of the constant dynamic development of the global economic situation have a significant impact on the constant changes in the international market of precious metals, where global factors only strengthen fluctuations in the main segments of the market, including the gold market, which has a multi-faceted purpose from monetary, which is a part of the gold and foreign exchange reserves of the world's countries, to the esthetic.

Trading of futures of precious metals grows in popularity among investors every year. This is a separate independent area of economic activity, which allows, taking into account the high volatility in the segment of precious metals, to multiply the deposited money. These arguments explain the increasing interest of equity investors in precious metals commodities during crisis periods especially such as the recent one induced by the global outbreak of coronavirus (COVID-19).

**Keywords:** precious metals market, market relations, economic assets, wavelet analysis, economic development.

### **Introduction**

The market of precious metals is an important factor for efficient functioning of the global economy. The modern world market of precious metals is a developed structure of global constant trade in physical metal and its alloys. The market uncertainty induced by COVID-19 pandemic made investors and portfolio managers search for safe-haven assets, such as precious metals, to include in their portfolios.

The precious metals exchange is a segment of the market that trades by means of open sale and purchase, regulates and unifies the resources market, and is also a certain indicator of the economy. International markets of given metals are a set of separate trading points, which are specialized on making agreements on purchase and sale of precious metals. In order for all participants of the precious metals market to be comfortable, they are quoted in several currencies, but mainly in U.S. dollars.

### **Literature review**

One of the widest and most important areas of research in economic practice is the analysis of various time series. A characteristic feature of such series is the sequence of observations on the studied objects in time. Such time series can be the annual inflation rate, the annual volume of fuel sales or other types of goods, currency exchange rates.

The notion of wavelets can be meaningfully translated as "splash", "small (short) twist", similar to the French word "ohdelette". Research with the help of wavelets has appeared recently - in the 80s of the last century. The term itself was introduced by A.Grossman & J.Morlet in their article published in 1984. They investigated seismic signals using a wavelet basis. This work laid the foundation for further research and future use of wavelet analysis. Later this method of analysis was used in the processing of numerical series of physical and geophysical observations. Wavelet analysis is also widely used in processing of large amounts of information and digital signal processing, stock market forecasting, filtration of electrocardiographic data, synthesis of signals of different structures. Wavelet analysis significantly expands the instrumental nature of information processing technologies.

### **Purpose**

The purpose of this work is to explore dependency between different precious metals, such as gold, platinum, silver and US dollar index, their impact on each other market with the help of different methods of wavelet-analysis.

### **Methodological approach and discussion**

Using wavelet analysis, it is possible to find out regularities between the time series chosen for research, as well as to study in details how these indicators at different frequencies and how this this interaction changes over the studied period and at different time scales.

The database consists of four time series of 529 observations:

- Gold futures prices in USD (U.S. dollar for tr.ounce);
- Platinum futures prices in USD (U.S. dollar for tr.ounce);
- Silver futures prices in USD (U.S. dollar for tr.ounce);
- U.S. dollar index value at points.

Monitors start on March 1, 2019, last monitored on March 19,2021.

To calculate statistical indicators (mean value, mode, median, coefficient of asymmetry, process, Pearson statistics) we used MS Excel office program.

To implement the methodology of wavelet analysis we used RStudio software environment, which is designed for statistical data processing and graphing. This study was carried out using the WaveletComp library from the CRAN repository. It contains the necessary functions for calculating and creating graphical images, such as `analyze.coherency`, `wt.image`.

The final version of observation shows that the greatest coherency is observed at medium scales (16-32 days, 32-64 days). At low scales (2-4 days, 4-8 days), unstable coherent motion is observed in all cases, where during several periods of time and for some scales the series go from antiphase to phase, proceeding in a binary connection. Therefore, analyzing the market of prices for gold, platinum, silver and the U.S. dollar index, it can be argued that in most cases, the gold market and the U.S. dollar index lead to the formation of the price at the market of another indicators. Analyzing the interplay of the platinum and silver market, in this situation the prices for platinum are the main one. If we study the pair of platinum and gold markets, the gold market prevails over the platinum market; for platinum and the U.S. dollar index - platinum.

## **Conclusions**

The world market of precious metals grows day by day, because the demand for such metals as gold, platinum and precious metals will remain high for a long time, due to the liquidity and universality in the use of these metals. Due to the use of wavelet analysis, the study revealed certain patterns of evolutionary path between the selected time series, and also revealed how these changes interact at different frequencies, and how this interaction evolves with time and at different time scales.

In general, four powerful markets show a similar behavior in terms of the cross-wavelet spectrum, which is confirmed by a high level of pairwise dependence on a medium scale (16-32 days). Thus, when the gold market and the U.S. dollar index interact, the

U.S. dollar index is the leading one. Their coherence is strong on a medium scale (16-32 days, 32-64 days) in February - June 2019, as well as on a high scale (64-128 days). For its part, the gold market outweighs the silver market. Also, the price setting in the gold market is influenced by the leadership of the platinum market. Despite being the safe-haven asset, gold, like everything else, eventually took a hit to the downside on the realization that COVID-19 would become a global pandemic. Silver's effectiveness as a superpowered version of gold is due in part to the fact that, unlike gold, it has a strong industrial base that could benefit from greater physical absorption during the coronavirus - for example, its use as a key ingredient in many plastics used in everything from masks and gloves to protective shields. So according to those factors its prices remains strong in the past year.

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*Lina Wordley*  
*Master in Economics,*  
*Project Management Expert,*  
*London, UK*  
[linasconst@gmail.com](mailto:linasconst@gmail.com)

## **GLOBAL TRENDS IN SUSTAINABLE MANAGEMENT: CRISIS IMPLICATIONS DURING PANDEMIC**

The global community has made great strides in addressing poverty, but a mere continuation of current development strategies will not suffice to achieve sustainable development. Economic and social progress remains uneven, the global financial crisis has revealed the fragility of progress, and accelerating environmental degradation inflicts increasing costs on societies. There are a number of economic, social, technological, demographic and environmental megatrends underlying these challenges - a deeper globalization, persistent inequalities, demographic diversity and environmental degradation - to which a sustainable development agenda will have to respond.

These trends influence and reinforce each other in myriad ways and pose enormous challenges. Urbanization is proceeding rapidly in developing countries, globalization and financialization are perpetuating inequalities, while exposing countries to greater risks of contagion from crises, and food and nutrition as well as energy security is threatened by competing demands on land and water, as well as environmental degradation. Most important, environmental degradation has reached critical levels. Business as usual is therefore not an option, and sustainable development will require transformative change at the local, national and global levels.

The crisis caused by COVID-19 has affected research in a variety of ways. As far as research on sustainable development is concerned, the lockdown has significantly disrupted the usual communication channels and, among other things, has led to the cancellation of meetings and long-planned events. It has also led to delay in the delivery of research projects. There is a gap in the literature in regards to how a global crisis influences sustainability research. Therefore, this ground-breaking paper undertakes an analysis of the extent to which COVID-19 as a whole, and the lockdown in particular, has influenced sustainability research, and it outlines the solutions pursued by researchers around the world to overcome the many challenges they have experienced. This paper also outlines some measures that may be implemented in the future to take

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more advantage of existing technologies that support research on sustainable development.

The global health crisis caused by COVID-19 impacted research activities undertaken by higher education institutions, research centres and research groups in a variety of ways. Despite significant efforts to decrease the effects of the pandemic crisis, some researchers around the world have been (or are) forced into social isolation, and they had to interrupt face to face meetings with their colleagues, which had an adverse effect on the work within research teams. Furthermore, during the peak of the pandemic, several activities in research laboratories were interrupted. This has led to delays in the scheduling of many research projects. In many cases, researchers were forced to apply for an extension of the deadlines for their activities.

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## **A STUDY OF COVID AND ITS IMPACTS**

17th of November 2019 the first case was dictated in China. They widely criticized for covering it up the out break in the early week. Including crackdown doctors who tried to warn colleagues about a new sars-like virus which was emerging in Hubei Province. According to Chinese secret government data A 55 years old from Hubei Province could have been the first person to contract covid -19 for about one month after that data there were one to five cases reported each day, the report said and by 20th December there were 60 confirmed cases. It's been an year after the Pandemic emerged and when you look at the statistics more than 20 percent of cases comes from the United States followed by India and Brazil. More than millions death has been reported globally which the majority of death reported in the region of America (55%) followed by Europe (23%). In the past week region of Americas , south East Asia and Europe accounted for 94% percentage of new cases.

Five countries (namely India, The United States of America, Brazil, Argentina and France) reported 60% of new cases globally. Official statement by Chinese government to the world health organization has the first official case has been diagnosed on 8th December. Doctors who tried to raise the alarm with colleagues about a new disease in late December were reprimanded. Authorities did not publicly concede there was human-to-human transmission until 21st of January. But the number of data conceived they were cases as early as mid November. But why the Chinese authorities refuse to inform any of the world authorities?

There are three possibilities:

1. The case wasn't detected at that time (which is irrelevant and impossible to say the Chinese authorities didn't have any knowledge about the outbreak).
2. They were detected but not recognized as a new disease (which is a possibility that we can't avoid. But still they knew the fact that there is a deadly disease exist and it's highly dangerous to human body).

3. They were detected and recognized but the reporting was suppressed (it is most likely a possible explanations I could say based on my researches and studies) still their is no evidence suggesting that how this highly potential virus is developed.

Their is no evidence for its origins. The Chinese government strictly prohibited to enter any of the world organization to come and investigate. Why? Did they deliberately hiding something from the rest of the world? Their is plenty of unanswered questions come to your mind if you think clearly from the very beginning. And there are many conspiracy theories all over the world but nothing prove any actual values because of their lack of evidence.

In 2020 the covid crises had a substantial negative impact on global trade however, China's exports recovered quickly. Of course, there is some marginal down break at the beginning and a substantial gap between what they predicted for the year of their GDP lower than they anticipated.but China initially benefited from high demand for personal protective equipment, such as mask. Demand for goods like shoes and consumer electronics increased later in the year as the global economy improved.They had a large number of dominant industries that created products and materials for export.

The most prominent goods among the finished products exported from China were consumer electronics, data processing technologies, clothing, other textiles, optical gear, and medical equipment. And they recovered from all this cries quickly and successfully restart their economy. China has been the largest exporter in the world since 2009. Official estimates suggest the country's total exports amounted to \$2.641 trillion in 2019. In 2013, China became the largest trading nation in the world. The United States previously held that position. In a way all over the world depends on their goods.

Let's go back the begining before all these yet to be started. What was the state of world economy and who were racing for the top. The two names we can't avoid is China and The United States. Yes they are the largest goods and producers in the world. Their was arguments from time to time but it became severe until the trump administration got charged. The United States continually accusing China for thefts individual property. In March, a CNBC poll found one in five US corporations had intellectual property stolen from them within the last year by China. According to the Commission on the Theft of American Intellectual Property, the theft costs \$600bn a year. The US imported a record \$539.5bn in goods from China in 2018 and sold the Chinese \$120.3bn in return. The difference between those two numbers – \$419.2bn – is the trade deficit. trade deficits represent an existential threat to US jobs and national security.

China makes up the largest part of the US trade deficit but those fears are also behind his disputes with the EU, Canada and Mexico. That deficit has been growing for years as manufacturing has shifted to low-cost China and, according to Trump, it explains the hollowing out of US manufacturing. His detractors argue these deficit worries are hyperbole and a result of the US's stronger economy, which allows consumers to buy goods at cheaper prices.

The truth is probably somewhere in between. While it's true that unemployment is at record lows and consumers continue to prop up the economy, manufacturing jobs have been lost (automation is also to blame for this) and with them wage growth (although the hollowing out of unions plays a part here). But it is not just deficits that concerns Trump. Cheap steel and aluminium, subsidized by the Chinese government, are the origins of this trade dispute. According to the White House, last year alone China dumped and unfairly subsidized goods including steel wheels, tool chests and cabinets and rubber bands on to the US market. To be fair the US too is more than willing to bail out its industries (the banks or the automakers) at the taxpayers' expense. But at this point "fair" is not up for discussion. The US has now slapped billions of dollars on tariffs on Chinese goods.

China retaliated, again with more levies on US goods. China's economic growth has slowed to levels unseen since 1992; US economic forecasts have also been cut. American farmers were the first to feel the result, as China has canceled orders, and manufacturers are increasingly gloomy. All these things were happening in between the year of 2018 and 2019.

Let's come back to the present scenario. What's state of our current economy. Who is doing what? Who has failing to do so? And who else gained from this pandemic? Not all countries can't easily change thier stratgies to more suited to the current sinario. Some countries will take years to get back on the presnt state they were before. But on the other hand this might be a rarest opertunity to rethink and evauate their future postion towards to their country as well as their enviornment. Maybe we don't get another chance like this near in the future.

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## **PUBLIC PRIVATE PARTNERSHIP: RESPONSES TO COVID-19**

Public-private partnerships (PPPs) between a government agency and private-sector company can be used to finance, build and operate projects, such as public transportation networks, parks and convention centers. Financing a project through a public-private partnership can allow a project to be completed sooner or make it a possibility in the first place.

Public-private partnerships have contract periods of 25 to 30 years or longer. Financing comes partly from the private sector but requires payments from the public sector and/or users over the project's lifetime. The private partner participates in designing, completing, implementing and funding the project, while the public partner focuses on defining and monitoring compliance with the objectives. Risks are distributed between the public and private partners according to the ability of each to assess, control and cope with them.

The current COVID-19 crisis has strained infrastructure projects globally, and in particular public-private partnerships, at all stages and in all sectors—with implications for governments, providers of infrastructure assets and services, their financiers, and end-users.

While all players share a common goal: to prevent the failure of PPP programs and projects, actions taken so far have often been ad hoc and focused on remedying the pandemic's effects in the short term. In many cases these included, for example, making use of customary relief mechanisms under PPP contracts as well as arrangements between governments, sponsors, and lenders to come to practicable temporary solutions and avoid disputes.

The National Academies of Sciences, Engineering, and Medicine's Forum on Public-Private Partnerships for Global Health and Safety convened a virtual workshop on June 25–26, 2020,<sup>1,2</sup> to review best practices from past PPP epidemic and pandemic responses to determine if those frameworks have applications to the coronavirus disease 2019 (COVID-19) pandemic, as well as to explore PPP innovations that are

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addressing COVID-19 in other countries, to examine PPP pandemic responses that expand the distribution of global public goods, and to discuss PPP pandemic responses that enable the development of a global health security agenda.

Importantly, the impacts of the COVID-19 crisis have highlighted certain critical aspects under PPP policy and legal frameworks that underpin the preparation and implementation of good-quality and sustainable PPP projects.

To further advance global discussions in this context and assist governments in revisiting PPP frameworks, we'll also develop a practitioner's tool that identifies key provisions of PPP legislation and highlights those elements critical for building resilience in PPP structures.

To contribute to making PPP legal frameworks fit for a post-COVID-19 world, we therefore hope for broad participation from both public and private sectors, civil society, and the international development community in the consultations on the envisaged guide once an advanced draft will be available during the first quarter of 2021.

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## **ACHIEVING REDUCED INEQUALITIES AS A SUSTAINABLE DEVELOPMENT GOAL DURING COVID-19 PANDEMIC**

ORCID: 0000-0003-0227-6935

JEL Classification: F01

### **Abstract**

Due to economic and technological progress, sustainable development became the goal for the humanity to aspire as a way to get a better quality of life considering limited natural resources. As a result, the United Nations General Assembly confirmed the 17 Sustainable Development Goals (SDGs) in 2015, for the purpose of fostering sustainability of the economic development by balancing the economic, social, and environmental needs. One of those goals (Goal 10) was to reduce inequality inside the countries and between them. Before the pandemic the world economy was well on its way to achieve it and showed steady even if a little slow progress. The pandemic has changed that trend as it led to the exposition and intensification of the inequalities within and among countries. The reason for that is the poorest citizens and countries are the least protected against the virus, and the economic fallout for them is the greatest. The crisis has been especially unforgivable for those employed in the informal economy. The shutdown of the international tourism crushed small developing countries dependent on the services sector.

**Keywords:** Sustainable Development Goals, reduced inequalities, COVID-19 pandemic.

### **Introduction**

In 2015, the United Nations approved 17 Sustainable Development Goals (SDGs) for the period up until 2030 to make people's lives better. Considering that the world economy was on the rise and most of the developed countries had sufficient financial resources, they agreed and signed rather ambitious treaties, among them the Sendai framework on disaster risk reduction, the Paris climate agreement and the Addis Ababa plan for financing development. Sadly, the implementation of those agreements was

rather lackluster. Even before the outbreak of the COVID-19 pandemic, the progress in achieving the Sustainable Development Goals (SDGs) was rather slow, but there was a certain hope that at least some of the 169 target goals would be reached by 2030. The pandemic made this possibility almost non-existing. Surprisingly, some researchers concluded that achieving some of the targets under the Pandemic could even worsen the world economy situation. More so, at least two-thirds of the above-mentioned 169 targets became very difficult to reach or it is apparent that they were formulated not in the best way so there is a threat that they might amplify existing problems. As a result, it took only 5 years to reassess the projected impact of the SDGs.

The aim of the study is to determine the impact of the COVID-19 pandemic on the progress towards achieving Sustainable Development Goals and the reduced inequality in particular.

### **Research Results**

The main precondition for the SDGs are globalization and sustained economic growth. As we can see, the results of the COVID-19 pandemic were devastating for both. It is expected that the global economy will not have a significant growth in the near future, so sustainable growth is expected to recover no earlier than several years from now. The developed countries have limited resources to support their own citizens, so they are not able to financially support the developing world. It means that the development aid will continue to decrease. More so, some researchers think that the reason for the COVID-19 pandemic is the increasing scale of human activity that opens the sources of new diseases once hidden in the wild. The major issue is to ensure global food security, because season workers became restricted to harvest crops; as a result, the prices of food are rising. The exports of the luxury goods are slowing and the tourism has collapsed in most cases. The global slowdown caused the oil prices to fluctuate and drop so oil-rich developing countries in Africa, Latin America and Middle East have serious problems as their national income experienced a steep decline.

Another stressor is the climate changes and their consequences in the form of the natural disasters, the steady degradation of the ecosystems, and the geopolitical unrest as a result of that. They require resources to combat that could be used to promote the SDGs.

The COVID-19 pandemic clearly demonstrated that the SDGs in their existing form are not viable, so they require serious adjustments. The most important task is to decrease the number of target goals, determine priorities and select the most achievable of them under the sluggish global economy and slowing globalization.

One of the goals most severely affected was reduced inequality and its sub targets. Before the COVID-19 pandemic started, there was a certain progress in combating an inequality as its various measures demonstrated. For example, income inequality inside some countries started to improve and several low-income countries managed to use preferential trade status to their advantage. The transaction costs of remittances were decreasing. Even migration crises started to lose its edge as the host states managed to find the middle ground to organize more or less orderly, safe and responsible migration. Sure, the progress was somewhat hindered by multiple forms of discrimination regards opportunities, wealth and income but it was manageable. The pandemic changed it all. The poorest countries were hit the hardest, but inequality began to rise even inside the developed states as it targeted the most vulnerable group. Inequality increased vulnerability to health and other emergencies so it became one of the priorities.

One of the widely used measures to represent the income inequality is the Gini index. Its range is between 0 and 100, meaning that income is shared equally if it's 0, and 100 represents a theoretical extreme situation where all income is received by one person. Prior to the start of the COVID-19 pandemic, the average Gini index for developing countries was slowly decreasing. But the estimates, made by the International Monetary Fund in October 2020, show that However, the World Economic Outlook, October 2020 of the estimates that the average Gini index for developing countries as a group is expected to increase by 2.6 points to 42.7 in the nearest future. It will return its value to the level of 2008. The estimates for low-income countries are even worse.

Another target indicator was the transaction cost of remittances that was to be reduced to facilitate the legal movement of those cash flows. For example, in 2011 the global average cost to send an international transfer of \$200 was 9.3 per cent. Surprisingly, the pandemic had almost no negative impact on this target as the average cost of sending money internationally was even reduced to 6.5 per cent in 2020. There were rather large discrepancies between different regions. For example, the transaction costs for international money transfers to Oceania (small island states) and sub-Saharan region were the highest (9.1 per cent and 8.5 per cent, respectively). On the other hand, Central and Southern Asia region managed to reach the indicator below the estimated 5 per cent threshold. Still, it's a long way to achieve the declared target of a global average cost of 3 per cent by 2030.

## **Discussion and Conclusions**

The SDGs were a promising achievement by the global community approved in 2015 at the height of the period of economic growth and an abundance of resources that developed countries were ready to spend on improving the global level and quality of

life. Sadly, the COVID-19 pandemic put a serious obstacle on the way to reach those goals. The funding became scarce and it was redirected towards combating the pandemic. One of goals that experienced the most set back was reduced inequality as the official international aid all but dried up. The Gini index started rising again, the inequality between countries increased as the prices of oil fell but the prices of food skyrocketed. The low-income and the poorest countries were the worst affected. To solve the issue, the aid of the developed countries is required but at the moment their resources are limited.

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*Santhosh Venkedachalapathy*  
*Student,*  
*International Institute of Paris,*  
*Paris, France*  
[santhoshjean89@gmail.com](mailto:santhoshjean89@gmail.com)

## **COVID-19 AND THE WORLD'S FUTURE: WILL UNCERTAINTY COMES EITHER PARALYSIS OR OPPORTUNITY?**

### **Abstract**

The crises that created a huge impact around the world and affect many lives and the global economy and the deadly virus is known as COVID-19. This pandemic situation provides a great challenge for all the citizens especially doctors and nurses lively handling the patients daily. The cases were rapidly increasing across the world day-by-day and recovery rate is also showing good results and thus creates hope among the societies but still, there is a struggle for leading a healthy life as earlier. The number of cases was high in the following countries are the USA, Brazil and India. All the developed and developing nations were severely affected by this COVID-19. Because of the pandemic, so many peoples were affected economically when the lockdown was announced. This situation has forced to change the old regulations, business process, technology uses and maintenance operations. Many of organizations undergo for the new significant transformation and changed their business methodology, guidelines and procedures for upcoming days. This change in transformation is a tedious process and it is still being implemented until the situation becomes normal.

### **Introduction**

The fields where it creates an impact of the current crisis that was collected, analysed and combined from the individual perspective of the users are big data, blockchain, artificial intelligence, cybersecurity, mobile technology, privacy, social interaction, online learning and information management. The speed of the virus transmission is so high and it affects many thousands of people daily. For the care of peoples, the government has announced many lockdowns during these periods. This created a new normal in the cultural and economic impact of the virus and provides a gradual transmission among the people. So, they can interact and operate in the workplace with each other. Most of the companies were forced to close and also by reducing the working operations with a limited number of employees.

They have been practicing the new rules and regulations by following the social distancing in the workspace by having all the requirements and work patterns. Some of the companies have been doing the remote working for the employees by using new digital systems and provides good communications and remodeling new business models for the COVID-19 environment.

The employees also adapt to the current situation by following the prescribed rules from the government. The usage of technology and apps have been increased during this pandemic and the demand is also increased. The government also developed some applications for controlling and tracking the details of the virus. The cultural and economic impact of this transformation has been migrated to digital streaming. During this situation, many of the organizations are changed to digital transformations and the education sectors also transformed and the teaching materials are converted into online delivery. This is done through Information Management (IM).

All the academic is now working at the remote. It also provides the testing for the business managers, decision-makers, political leaders and health care etc. It provides a big challenge for testing their performance and decision making for dealing the unprecedented situations. This is one of the new normal situations which we have never faced before like this. The major problem faced by the managers and leaders are imperfect information and this can be uncertain or vague. This also has a lack of data due to this pandemic and contains unreliable data, irrelevant information that leads to judgement and filtering process. For making the decisions, deep uncertainty is the problem faced by many decision-makers. It generally needs the high consequence environment and high-tempo when the required information is incomplete and no conclusion was made that leads to the degree of uncertainty. When dealing with the risk consequences, the decision-makers will face the situation when they make any wrong decisions. In such cases, the risk must be assessed and the necessary steps to be taken for mitigating the risk. The urgency process is needed for making rapid decisions. For solving the problem faced in industries, supply chain transformation is regarded as the best solution for the warehouse infrastructure and centralized. All these are based on the cost optimization for the decentralized supply chain model by having the regional warehouse and smaller that is situated near to the location. This provides the benefits of cost-minimizing and the need for the model is changed to the current situation.

### **Government enforcement for COVID-19**

It includes ICT infrastructure for developing the nations to the digital transformation by implementing the work from home facility provided by the Government. With the use of technology and also enabling the change in customer behavior with the help of data

analytics technology. The following companies have to invest in increasing the customers with the usage of digital technology for better understanding the behavior of the customers and offering the channel varieties and services requested by the customer. By implementing the Work from Home (WFH) method, it reduces the cost and workspace and thereby decreases the pollution. It also maintains the satisfaction, work-life balance and productivity by providing a secure network for the employees. It needs a cyber secure network for safe working. For managing the public authorities, it has to manage the medicine supply chains, oxygen, ventilators and personal protection equipment (PPE) and other equipment. It also provides end-to-end technology and also some key activities for epidemic management. They are patient monitoring system, quarantine monitoring system, supply chain management of critical equipment and drugs, Hospital bed and ICU tracking systems for availability, for sample collection testing and reporting and vehicular movement regulations.

This crisis showed the public sector capacity importance and for handling the emergencies and capabilities for solving the challenges in the public health sector. There are many challenges hidden in both the private and public sector environment. It contains the long-term resilience and society stability for making public outcomes through policies and other institutions. Some of the legislation laws used for examining the corporate governance framework that is implemented during the time of crisis. The impact that brings back the developing nations to concentrate on the world health, food security and poverty to achieve the Sustainable Development Goals (SDG).

### **New Standards and Rules**

It also shows the global governance vulnerability and the multilateral of the current system. Then it solves the internal problems that occur due to the crisis for the subordinate international cooperation. It mainly deals with the political arrangement vagueness and the institutional weakness and also maintains the multilateralism with some countries by having leadership qualities. Due to some arrangements, it makes the community of the state softer and more comfortable with effective cooperation. The increase in the crisis created uncertainty for the development of the nation. The government has implemented rules based on the international institution which governs the formal and informal agreements and the actor behaviors by restricting, requiring, prescribing and allowing some of the behaviors and activities. This is based on the guidance of the cooperation of rules in a consistent way. It calls all the stakeholders that related to the self-regulating and intersubjective process that binds the rules and compliance risk, interests change and behavior modifications. Because of the pandemic situation, the rules have been changed so that the institution design reflection agenda is necessary.

For analysing the results, expert-based research is necessary for selecting the required criteria and for the scope determination then for producing the capacity of the results. The current situation must be clearly defined for the identification and the impact of COVID-19. The issues related to the domestic of the given country or the global governance problem, international relations and cooperation of any sector. Some of the issues are directly related to the regular institution and the particular information will be specified in the document. For selecting the particular criteria, 152 documents were collected and analysed then the international expert views were also considered for the COVID-19 all over the world. It is further carried out by using the content analysis technique is known as argument mining for analysing the international development policy and in the content analysis, the research methodology is clearly defined. It is a kind of technique that defines the particular augmentation structure in a document.

### **Impact of COVID-19 in the world**

The main impact of COVID-19 on the world that is classified into two groups they are the first type defines about the cooperation problems that deal with the different interest with various uncertainties of the coordinates of the state to work together and have an agreement between them. The second type deals with the characteristics by explaining the preference number, government regime, power asymmetries and agreement influence. Then the states give diverging interests for rising the problems related to the coordination, enforcement, commitment and distribution. This gives the drastic change in the world for generating the changes in threatening international cooperation, multilateralism and collective action. When considering as a global issue the novel coronavirus needs a coordinated response so single country actions are not enough to fight alone therefore all the countries must come under the common agreement as international approach considers as a clear coordination problem. It shares some areas need to concentrate on poverty and climatic change for the fight against the virus. The coronavirus has some uncertainty, intentions and behavior. The strategy that is followed by the countries to spread their influence among the world as an outcome for undermining mutual trust among the people is much needed to overcome the virus out of the world. Nowadays the world is considered to be uncertain not only by the consequences but also due to the behavior in the international community this makes the situation even worse in the future. It is analyzed by the uncertainty level as higher and some of the countries added extra features like internal dissensions in the US. The other source of uncertainty is commenced by international institutions. All the states are joined with international cooperation for a change with the European Union (EU).

Even though there exists a gap between the developing and developed nations for increasing the gap power asymmetries is used. This also increases the superpower

behaviors and importance of future in the countries like US, China etc., using these asymmetries it searches for the authoritarian solution to the current crisis. It understands the global governance defines the heterogeneity interests among the states when a greater number of countries needs for cooperation, thereby reduces the multilateralism in the states. It also enquires for the problem faced by the societies by the actor behaviors and increases the international system governance and heterogeneous and tends to be complicated. Flexibility is more important for implementing an agreement between the states for such conditions the agreement has to be made with the uncertainty conditions and making the world more flexible for adapting to the unknown circumstances in the future for decreasing the flexibility it is necessary to increase the states of an agreement.

### **Steps to be followed for the safety of peoples**

The fundamental public health function consists of contact tracing in those cases and contracts have been traced and interviewed for retrace the events, transportation mode and visited locations are taken. It requires significant resources for setting up the manual and contact tracing for the state members to continue the process. For increasing the necessary measures, the capable workforce is also needed. It also considers the ethical and legal dimensions for the implementation of digital contract tracing and quarantine (DCTQ). It includes the transparency and features related to technical parts that create privacy effects.

This method is implemented as the new normal and it is not enough to implement as a single tool for addressing each and every step related to end-to-end contract tracing and monitoring the workflow of the quarantine. It also contains the strong public health workforce and manual contract as a part of COVID-19 implemented by using digital tools. Those operations of these tools were used to mitigate the risk with the legal and regular framework that brings successful public health effort by attracting the peoples with the new technologies. The ultimate aim of the member states in most of the region for examining the needs and opportunities of the DCTQ tools for understanding the concept and technologies by having their pros and cons implementations. The tool that provides a high-level view in most of the regions. It contains some national and subnational levels offering by government officials with the DCTQ tools and implementations as a part of COVID-19. It also contains some principles guidelines they are equity and inclusivity, multisectoral approaches, contextualization and localization, protection and privacy of data, accountability and transparency, time limitation and proportionality, integration and interoperability, communications and usability.

The DCTQ process consists of three processes such as to inform, identity and quarantine. The identity process consists of potential exposure determining on the

proximity trail and GPS. Then tracking the locations based on the check-ins and integrating the centralized databases by the recollection of contacts in a comfortable manner and also contains the travel history of the customers, self-report symptoms. The quarantine process defines the restrictions of accessing the public places and individuals and also providing documentation of the isolation process then maintaining the social distancing in the real-time and monitoring the patterns of the population level. The inform process comprises of notifying the individuals based on the locations of contacts and assigning the classification of risk of individuals that includes publishing the information about cases and reporting about high-risk areas. It includes some of the steps to be implemented for the DCTQ tools such as devise a strategy based on the COVID-19 components that bridge the gaps between the societies and also by assessing the performance and response of the current virus by contact tracing and quarantine process. nThen by examining the DCTQ array tools implementing for the finding the starting point for the development from the scratch. It is important to form a coordination team for providing governance management structures and oversight. Then it consists of developing and operations by implementing the monitoring plan for addressing the protection and privacy policy that includes timeline and strategy for communications.

## **Conclusions**

The crisis critical sector defines the supply chain organizations and firms related to COVID-19 that involves products manufacturing that deals with the health crisis. For the recovery process, it is important to consider the government supports, employees and business partners, customers. Public life is most affected during the pandemic with the economies of local and regional. For solving these issues, it is important to digitalize the services and productions for the industries, public utilities, water and energy corporations, business in smart cities. In the software companies, digital industries are the pioneer for providing the information and communication services, research and entertainment purposes.

The European Union (EU) launched research on creating the cities smarter and introducing many fund programs for encouraging the local and regional development and taking necessary actions at the right time and by the national government also. These developments are based on future needs and many of the European government investment changed their strategies for urban development with the use of local government rules and regulations with the priorities. With the use of digital and innovative technologies, it saves the cost consumptions and labour costs and can access the information everywhere at any time. By interrelating the big data methods, public services can be improved. For speedy recovery of local economic after this crisis, it is important to accelerate the smart digitization in future.

**Paola Diez**  
**MBA,**  
**Strategic Development Expert,**  
**STU Consulting Group,**  
**Spain**  
[stu diezpaola1@hotmail.com](mailto:stu_diezpaola1@hotmail.com)

## **IMPACT OF COVID-19 ON THE SUSTAINABLE DEVELOPMENT GOALS**

According to the OECD's latest Global Outlook on Financing for Sustainable Development, developing countries are facing a shortfall of USD 1.7 trillion in the financing they would need this year to keep them on track for the 2030 Sustainable Development Goals (SDGs), as governments and investors grapple with the health, economic and social impacts of the COVID-19 crisis.

The projected USD 1.7 trillion shortfall for 2020 adds to an existing gap of USD 2.5 trillion in annual financing for developing countries towards achieving the 17 SDGs by 2030. Meanwhile, 90 out of 122 developing countries are now in economic recession as the virus hurts sectors like tourism, manufacturing and commodities. The pandemic also risks putting pressure on flows of development aid from advanced to developing economies.

At USD 379 trillion, global financial assets are at their highest value since before the global financial crisis, yet 80% of these assets are held in advanced economies and a lack of universally accepted criteria means that little is known about their sustainable development and climate impact, the report says. Just 20% of financial assets are held in developing countries, where more than 80% of people on the planet live. According to the report, reallocating just 1.1% of the total assets held by banks, institutional investors or asset managers – USD 4.2 trillion – would be sufficient to fill the gap in SDG financing.

Fixing the inefficiencies in financial and taxation systems that enable money to drain away from developing countries through tax evasion and avoidance and high remittance transfer fees (which averaged 7% over 2017-19) would help to improve the geographic distribution of assets.

Under a 'COVID Baseline' scenario, the pandemic could raise the number of people living in extreme poverty by 44 million in 2030. Uncertainties are manifold and under a 'High Damage' scenario, the world could see a staggering 251 million people driven into extreme poverty by the pandemic, bringing the total number to 1 billion by 2030. Our research also shows that an ambitious but feasible set of integrated SDG investments has the potential to exceed the development trajectory the world was on before the pandemic, even when taking COVID-19 impacts into account.

With 48 targeted investments in governance, social protection, green economy and digitalization under the 'SDG Push' scenario, we can reduce the number of people living in extreme poverty by 146 million in 2030 relative to the 'COVID Baseline' scenario – and narrow the gender gap, as 74 million women and girls are lifted out of poverty. And while the risk of falling into poverty is highest in countries that are affected by war and conflict, it is also here that the greatest gains can be made: a majority of the 146 million people escaping poverty live in these settings, including 40 million women and girls.

The benefits are echoed across additional human development indicators, including nutrition and education. In 2030, about 128 million adults and 16 million children are likely to escape malnutrition with the interventions, and the proportion of children graduating from upper secondary school rises from the estimated 66 percent to 70 percent. This can be compared with the High Damage scenario where an additional 37 million people are likely to be malnourished, including 4 million children under the age of five, and the global upper secondary school graduation rate plummets to 64 percent.

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## **BUSINESS, GOVERNMENT AND INVESTMENTS**

Government policies and investments are a pervasive, important, and often positive influence on the business environment and economic development of any industrialized nation. The following are among the many government policies and actions affecting the business environment:

- The structure of taxes
- The design and implementation of workplace and environmental regulations
- The amount and nature of government support for generic technology development, research, and programs too large for single firms or with payoffs too far in the future or too uncertain to attract private capital
- The amount and nature of government investments in physical infrastructure and human capital
- The legal environment of operating a business encompassing, among other issues, the protection of intellectual property rights and the handling of liability claims

Through these and other roles, government plays an important, varied, often obvious but sometimes subtle part in determining the time horizons of corporate investment decisions. The impact of government policies and actions on business investment in technology and operating practices is the subject of a vast and continually growing body of scholarly literature and policy studies.

Therefore, recognizing the diversity, complexity, and importance of these issues, and aware of the limitations of time and expertise, the author has chosen to focus on two types of government influence on corporate investment horizons, neither of which is widely understood. First is the role of government in providing a stable environment for investment, including the role the government plays in the creation of markets. Second is the role of government in investing in complementary public assets—national,

regional, or local public assets, which work in tandem with private investment to allow and drive economic growth.

Among the government policies and actions that are the most consistently damaging to long time horizons are those which create disincentives for long-term planning and investment. Late or uncertain promulgation of environmental and workplace standards often unnecessarily diverts company investment capital from longer-term technology development.

Among the ways in which governments promote long-term investment is the role they play in the creation of markets or marketplaces. First, the government's considerable buying power has created predictable markets for "public" goods, some of which have become private goods. Commercial passenger and freight aircraft, created in part by government investments in, and demand for, defense aircraft, are a classic example. Additionally, markets for private-sector weather prediction and monitoring, environmental monitoring and waste disposal, public health systems, or large-scale satellite, computer, or networking systems are based on, or were supported by, markets created by government purchases, often in combination with government R&D.

Second, the use of regulation to create or stabilize markets is an important public role in encouraging long-term investment. Government regulation plays an important role in creating safe and reliable financial and air transport markets, albeit the definition of safety in the two markets is quite different. Government's ability to create a monopoly (often regulated and designed to be temporary) during certain stages of an industry's development is another tool to promote long-term investment.

Third, the government plays a crucial role in the creation of stable markets through its role in setting formal or de facto standards. As new markets and technologies emerge and develop, standards are often unclear or in constant flux. At some point - when necessary standards and potential technologies become clear - government helps establish formal standards, or participates in setting de facto standards, by becoming a buyer and thereby promoting long-term investments in the developing industry. Such interventions must be carefully timed to avoid freezing the system too soon or too late, but they can be enormous successes.

In summary, the government-created regulatory and legal environment has a substantial impact on time horizons of companies, but the impact is complex and multidimensional; some regulations and legal procedures can lengthen corporate time horizons, while other regulations, or legal constraints that introduce substantial unpredictability, can

shorten time horizons. The importance of government policies with regard to the regulation and creation of markets needs to be acknowledged, and expertise in the use of such policies to support long-term investment should be cultivated.

The government should make sufficient investments in its own expertise and in evaluation and improvement of systems to reduce significantly the time spent in carrying out such fundamental governmental responsibilities as environmental approval of new facilities, obtaining licenses on government controlled or regulated technologies, obtaining patent approvals. The intent of such investments would be to encourage efficiency and timeliness in the prosecution of government regulatory and legal processes.

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## SECTION 2:

### GOOD GOVERNANCE AND DIGITALISATION IN COMBATING ECONOMIC CRISES AND MIGRATION PROCESSES

*Praveen Raju*  
*Ph.D Candidate,*  
*International Institute of Paris,*  
*Paris, France*  
[prg1340@gmail.com](mailto:prg1340@gmail.com)

## INFORMATION TECHNOLOGY PROJECT MANAGEMENT PROCESSES AND PRACTICES

Due to the increase in globalization and advancement of technology all around the world, organizations are implementing latest IT applications in order to enhance their operations and to provide the optimum value to their customers. In order to implement the IT applications, comprehensive project management is conducted by the organizations. Adoption of latest technologies is essential for organizations because it not only enhances the efficiency of the organizations it also strengthens their competitive position in the market. An organization can enjoy competitive advantage against its competitors if it holds exclusive rights to a technology which helps it provide better products or services to the customers.

The nature of the IT projects may differ in accordance with the nature of the business of the organization however the tools used to manage the projects remain the same. While undertaking any project, it is among the priorities of the management of the organization to carry out the project efficiently, within a predetermined amount of time, and within the scope of the available resources. In order to ensure these objectives, the strategic core of the organization uses project management techniques which include extensive planning, systematic breakdown of all the steps to be followed till the completion of the project, and identification of the critical path within the segregated project activities. In the recent past, project management has become more than just a tool for implementation of project. Organizations are resorting to project management as a principle driver of change.

Project management has been bringing out desired results for the organization and so this discipline has been ever so evolving in order to make it more efficient. The aim of this report is to propose the best practices for implementation of an IT project. In order to reach this aim, the report uses an assumed situation and proposes its solution using example of an actual organization that carried out a comprehensive IT project management in the recent past. The report also highlights the factors that are responsible for IT project failures, anticipated challenges associated with the implementation of the IT project, the success factors essential for the implementation, and the recommendations for the organizations that seek to undertake IT projects.

### **Scope**

This research report covers a wide array of topics associated with the subject of IT project management. IT project management has a wide scope because it involves two distinct subjects, that are, IT and project management. These two disciplines merge to form a bigger subject which includes multiple aspects of an IT project and numerous aspects of project management. This research report covers a number of topics from both the sides of the subject. With regard to IT project, the report includes an analysis of the factors that lead towards failure of IT projects and it also includes an assessment of the factors that lead towards success of IT project. With regard to project management, the report includes an analysis of the factors that are essential for successful project management such as: benchmarking, planning, and continuous evaluation. Apart from the theoretical topics, the report also includes an assumed practical scenario for which the report presents a strategically designed solution.

### **Significance of the Report**

Organizations all around the world are enhancing their operations through implementation of IT projects. This report is highly relevant for such organizations as it highlights the factors that are essential for IT projects and the factors that need to be eliminated. Different organizations have different processes and tools for IT project management, and this report helps in the harmonization of the IT project management process. This report highlights some of the important aspects of project management, such as benchmarking. This aspect of project management is relatively new and it is highly relevant for IT projects as it helps the organizations follow the best practices derived from similar projects undertaken by other organizations. Therefore, this research study would attempt to determine the best practices that can be implemented by an organization to ensure success in IT project management.

## **Methodology**

In order to achieve the purpose of the report, a comprehensive secondary research was carried out. All the data pertaining to the factors causing failures of IT projects, factors essential for their success, challenges faced in implementation, and the case study of P&G was acquired from secondary sources including books and journal articles. The reliability was checked by the established credibility of the sources. This report places significant reliance upon secondary data therefore it was ensured that the sources for the secondary data were relevant, credible, and reliable.

## **Factors Causing IT Project Failures**

The advantages of an IT application can only be acquired by organizations if the implementation of IT projects is carried out successfully. There are a number of examples of failures of IT projects and the causes for the failures have also surfaced. Following is a brief explanation of some of those causes.

### **Lack of Strategy and Planning**

One of the biggest factors that are directly responsible for the failure of IT projects is lack of comprehensive implementation strategy and planning. This is the most important phase in any IT project and this is the phase that is not given the extent of work it deserves. A number of project managers fail to realize that the success of the IT project management depends upon the effectiveness of the initial strategy and the efficiency of the planning (Southon et al., 1999).

The strategy includes the determination of the overall scope of the project, the direction of the project, the extent of resources that will be applied, and the time period within which the project will be completed. Planning is more comprehensive as compared to development of strategy. The strategy provides the direction for implementation; the plan provides the nature and timing of procedures that will be conducted in order to follow that direction. Therefore, both the strategy and the plan for implementation are integral to the whole project and their determination beforehand can greatly assist in the effective implementation of the new information system. Absence of strategy and planning may lead towards failure of the IT project.

## **E-COMMERCE STRATEGIES: CHALLENGES AND PERSPECTIVES**

Electronic commerce (e-commerce) is considered as a way of business to buy and sell products and/or services globally through the internet. The rapid growth of Information Technology (IT) day by day is one of the major aspects that e-commerce or online business nowadays is also known as the demanding business practice all over the world. Technically, e-commerce is a platform to improve the performance of any organization by using the computer networks. It is not only purchasing products online, but also take cares of interactions of any company with their stakeholders. Therefore, e-commerce helps to enhance communications and transactions with the stakeholders of a company where stakeholders represents the people who are really connected to the organization such as; employees, suppliers, managers, financial institutions, etc.

Essentially, e-commerce is creating a region in the era of this cutting edge technology by designing and developing user friendly e-commerce site to attain its targeted audience(s) with a common interest and awareness. A company should define their market place where they can go through online business platform with specialized offerings, no matter whether it is a product or a service. The e-commerce is enabling modest companies to achieve plenty of patrons speedily. There are many online e-commerce websites we can find on the internet nowadays such as; Amazon, eBay, Alibaba, Aliexpress, and many more. For instance, Amazon always influences its customers to share their opinions about the products they bought which somehow encourage millions of new clients to visit Amazon. The e-commerce organization must always provide an attractive browsing experience across online platforms.

However, e-commerce businesses are growing rapidly, it also has many challenges or difficulties that should be conquered before starting this business and some of the challenges are described below.

- **Poor concept**

The lack of proper education or poor concept of online marketing would be a measure issue for those who wants to start a new e-commerce business.

- **Trust**

One of the major important roles is trust which we can also say like a bridge between sellers and buyers for any successful e-commerce transactions. Trust can be considered as a fundamental challenge in e-commerce environment. Despite traditional commerce, trust is a concrete pillar in e-commerce as people cannot instantly verify the products they want to buy or already bought unless it is delivered.

- **Confidentiality**

User's data and information such as personal information, payment details must be kept confidential and encrypted as well.

- **Return/ Refund**

If the customer is dissatisfied or the purchased product was damaged during delivery, return or refund might suffer the business from a heavy loss of shipment and reputation. Some e-commerce product offers free delivery service and this might go into the loss for the company while logistics and shipping charge always been frightening.

### **Conclusions**

The company who wants to run an e-commerce business must always be aware of the thing that e-commerce is not only just a website rather it is a distinctive business that also follows the business models. E-commerce is a platform where we exchange information and transaction such as; data, video, web pages, media, text, etc. from business-to-business, business-to-consumer, consumer-to-consumer, and business-to-government.

## **E-COMMERCE DEVELOPMENT IN INDIA DURING PANDEMIC**

The Government of India has taken significant initiatives to strengthen the economic credentials of the country and make it one of the strongest economies in the world. India is fast becoming home to start-ups focused on high growth areas such as mobility, e-commerce and other vertical specific solutions - creating new markets and driving innovation.

Owing to higher infrastructure spending, increased fiscal devolution to states, and continued reforms in fiscal and monetary policy, the Indian economic outlook has strengthened. The Government of India is striving to move steadily to minimise structural and political bottlenecks, attract higher investment and improve economic performance.

E-Commerce is a term for any type of business, or commercial transaction, that involves the transfer of information across the Internet. E-Commerce allows consumers to electronically exchange goods and services with no barriers of time or distance. The sharing of business information, maintaining business relationships, and the conducting business transactions by means of telecommunications networks. A business online does not have to make a site for every language. With the right marketing, every customer around the globe can find the business site, products, and information without leaving home.

Covid-19 has caused an inflection in e-commerce penetration globally driven by consumers' need for safety and convenience and even in India, online is gaining salience. A Bain & Company-PRICE survey of 3000 households across income groups and geographies which was conducted between April and June, revealed about 13% respondents buying online for the first time, while about 40% buying more online.

We expect India's e-commerce growth story to be inclusive—one that empowers the sellers and consumers both. For the consumers, it will provide convenient access to a wide assortment of products across all geographies and income segments. For sellers, artisans, traders and home-entrepreneurs it will provide an unprecedented impetus, by creating an easy access to a large base of customers across the country.

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E-retail has already democratised the shopping landscape, with access to more than 95% of India's pin-codes and empowering Bharat's small sellers while breaking go-to-market barriers for insurgent and incumbent brands. E-retail has benefitted millions of customers across India, exponentially increasing merchandise choice, price transparency and augmenting access and convenience.

To win in the online marketplace, there are six key elements that need to come together:

**Optimal assortment and merchandising:** Brands will need to tailor their assortment to suit online needs (e.g., bigger packs, bundles, ease of delivery, etc.). For instance, a few leading FMCGs have re-designed packaging and reduced the extent of plastic and water to make it lighter and more cost efficient to ship these products.

**E-commerce-ready supply chain:** Brands need to ensure that their supply chains are highly agile, in order to manage spiky demands (e.g. Diwali season) that are characteristic of online businesses and build the associated demand forecasting and inventory planning capabilities as well.

**Digital marketing:** Brands need to decide their most optimal split of spending across digital channels and digital properties. Depending on the objective, they should optimise spending among various digital properties such as banner advertisements, search listings, social media, etc. The biggest benefit of digital marketing is the ability to hyper-personalise content— brands can get a higher ROI by being nimble about the consumer cohorts and where in their purchase journey, to target.

**Optimising for higher online conversion:** Optimising the trifecta of Product Display Page (PDP), pricing/promotions and visibility, can significantly improve conversion rates online. For example, there are 20+ elements within a PDP (e.g., images, reviews, product summary, etc.) that a brand can refine for better results.

**Digital execution excellence:** The ability to create and continually refresh content, test and learn, refine at scale, track and tweak online pricing/promotions real-time, rapidly respond to consumer reviews, etc. is what differentiates digital winners from the rest.

**Ecommerce enablers:** The back end also needs to be robust and agile for winning online. Supporting systems, data and reporting infrastructure, automated real-time decision making enablement are all pivotal to a successful online business.

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**Tatsiana Viartsinskaya**  
**Doctor of economic sciences,**  
**Associate professor,**  
**Head, World Economy Center,**  
**Institute of Economics,**  
**National Academy of Sciences of Belarus,**  
[vert.region@economics.basnet.by](mailto:vert.region@economics.basnet.by)

**Oleg Koleda**  
**Head of sector,**  
**International Competitiveness Development of Regions,**  
**World Economy Center,**  
**Institute of Economics,**  
**National Academy of Sciences of Belarus,**  
[icei@economics.basnet.by](mailto:icei@economics.basnet.by)

## **IMPROVING LOCAL GOVERNMENT AND SELF-GOVERNMENT IN THE REPUBLIC OF BELARUS BASED ON DIGITAL TECHNOLOGIES**

The system of local authorities in the Republic of Belarus is based on the so-called state model. According to it, local government bodies represented by the «presidential vertical of power» have a greater influence on the socio-economic development of regions than local self-government bodies (in Belarus, local Councils of deputies).

Digital technologies related to the creation of «local e-government» can become one of the key factors for strengthening the system of local government and self-government. This task has been set and is being solved in the Republic of Belarus in accordance with the State program for the development of the digital economy and information society for 2016-2020.

In the first case, in fact, we are talking about the development of e-democracy, which should promote the involvement of citizens in local decision-making and strengthen citizen's confidence in the state, as well as reduce the cost of interaction with regional citizens.

In the second case, the use of information technologies is designed to optimize the work of the administrative apparatus of Executive and administrative bodies of local government and change the nature of interaction of Executive committees with the

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external environment (the population, private sector enterprises), which should be transformed into the provision of public services.

## **1. Institutional conditions created in Belarus for the development of «local e-government»**

Currently, the Republic of Belarus has created certain legislative and institutional conditions for the formation of a digital economy and the digitalization of the public administration system, including at the regional and local levels.

First, the legal framework is being formed. A national strategy for sustainable development for the period up to 2030 has been developed and is being implemented, which includes several initiatives related to the development of information and communication technologies (ICTs) in various sectors of the Belarusian economy.

In 2015, in order to strengthen the role of ICT in e-government, a strategy for the development of Informatization in Belarus for 2016-2022 was developed.

Second, the institutional framework is being developed. Decree of the President of the Republic of Belarus from November 8, 2011 № 515 «On some issues of information society development in the Republic of Belarus», the country has established the Council on information society development under the President of Belarus [1].

## **2. Problems of formation of «digital local government and self-government» in Belarus**

The most complex is the process of digitalization of regional management. In Belarus, restrictions remain for the development of digital local self-government and the transfer of administrative functions of local government to a digital basis, including:

- incomplete readiness of the population to participate in the work of digital government, low "electronic maturity»;
- only a part of the country's population, mainly young people, uses ICTs for interactive transactions (online shopping, banking, online job search).
- regional differences in the level of equipment of citizens with access to ICT;
- insufficient funding for projects aimed at developing the digital economy, high costs of implementing information and communication technologies;
- lack of demand from government agencies and enterprises for data storage, processing, analysis, and transmission;
- lack of qualified personnel (including outflow of the best specialists);
- etc. [2].

### 3. Direction of digitalization of local authorities in Belarus

One of the key conditions for the formation of local e-government in Belarus is the smooth functioning of the communication system between citizens and local self-government bodies and the information openness of the local Executive power.

First, between regional Executive authorities (local government) and local councils of deputies (local self-government in Belarus) at various levels. This is one of the components of the interdepartmental network and the state database, the formation of electronic document flow and the electronic vertical of power, etc.

Secondly, between the local authorities and population, as well as non-governmental organizations (voting, referendums, public information, survey, public opinion, education and the promotion or formation of civil position).

Third, between local Executive authorities, on the one hand, and the population and businesses, on the other hand, regarding the provision of so-called public services.

#### Conclusions

The creation of «electronic local government and self-government» in the Republic of Belarus will contribute to more active involvement of citizens in decision-making at the local level; transparency and de-bureaucratization of local authorities, expanding their capabilities and proximity to citizens; and the introduction of electronic document management at the local level will reduce communication costs, reduce red tape and speed up decision-making. As a result, the prerequisites will be formed for the transition to more progressive models of building the system of local self-government in Belarus within the framework of the public model, etc.

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**Dan Phan**  
**MBA,**  
**Project Management Expert,**  
**Hanoi, Viet Nam/Paris, France**  
[danphan02660@gmail.com](mailto:danphan02660@gmail.com)

## **E-BUSINESS IN VIET NAM: BENEFITS AND RISKS DURING COVID-19**

Vietnam is a land of opportunity for foreign E-commerce companies because of its young population, high Internet penetration rate and climbing smartphone penetration rates. Internet services made their first appearance in Vietnam in 1997. Vietnam's economy involves a number of different benefits and risks that international investors should carefully consider. While the country's rapid growth rates may attract investors, they should carefully consider the higher risk profile, government controls, and reliance on key industries to support that growth over the long-term. These factors may make the country too risky for some portfolios.

The Lunar New Year, 'Tet' in Vietnamese, is the most important celebration in the country. This year's festival on 12 February was accompanied by much uncertainty as Vietnam was hit by a third COVID-19 outbreak just days prior.

The sensitive timing of the outbreak elevated health and safety concerns as many Vietnamese had travel plans for reunions and family festivities. The government issued several social isolation orders in major cities, limiting inbound and outbound travel. The Ministry of Health and the World Health Organization's office in Vietnam recommended people celebrate Tet safely with the message that 'health is the most precious gift we can give each other this Tetholiday'.

Amid this looming crisis, more and more Vietnamese turned to e-commerce platforms and digital financial services for Tet preparation. Tiki, one of the four largest online shopping platforms in Vietnam, reported that its transaction volume in January surged 50 % compared to the same period last year. Due to the new outbreak leading up to Tet, it is likely that all e-commerce platforms experienced a massive surge in activity. Many Vietnamese businesses and services have also taken measures such as speeding up digital transformation projects and offering new services to meet this new demand. ZaloPay, one of Vietnam's largest electronic wallets, strongly promoted its 'li xi' service, a new digital approach to the tradition of elderly people giving lucky money to children.

These campaigns are gaining traction and could potentially help companies expand their customer bases as they address health and safety concerns. Such concerns have been an important driver of the surge in usage of e-commerce and digital financial services, especially among elderly consumers, during the last two waves of COVID-19 in Vietnam.

The COVID-19 pandemic, for all its negative impacts on health, society and economy, is expediting the growth of Vietnamese e-commerce and digital finance, paving the way for the country to fulfill its digital potential. Traffic on e-commerce platforms in 2020 was 150 % higher than the previous year, with approximately 3.5 million visitors per day on various platforms.

Usage of digital financial services, including internet banking, e-wallets and mobile money, have also risen significantly, placing Vietnam among the top three countries in Southeast Asia for e-commerce growth. Revenue in the sector is projected to reach US\$7 billion in 2021, an increase of 16.2 % year-on-year.

Digital health is another area the healthcare industry should pay attention to going forward. Demand for consumer health electronics and telemedicine are rising strongly in Vietnam amid growing challenges from infectious diseases such as COVID-19 as well as from non-communicable diseases.

What has been seen in both consumers' behavioural changes and in business' strategies strongly points towards faster digital transformation in businesses and services due to the COVID-19 pandemic. It is also encouraging that businesses in Vietnam have transformed in a way that better supports equal access to healthcare, enhanced safety measures and stronger collaboration across industries. This spurs the digital transformation that is essential for emerging economies like Vietnam.

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## **E-COMMERCE DEVELOPMENT**

### ***Introduction***

Electronic Commerce (E-commerce) is the buying and selling of goods and services or transmuting of funds and data, over an electronic network, primarily the internet. It is the trading or facilitation of trading in products or services using computer networks. These business transactions occur either business-to-business, business-to-consumer, consumer-to-consumer or consumer to business. E-commerce Development is simply the development of commercial transactions conducted electronically on the internet. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle although it may also use other technologies such as e-mail. Typical e-commerce transactions include the purchase of online books (such as Amazon) and music purchases (music download in the form of digital distribution such as iTunes Store), and to a less extent, customized/personalized online liquor store inventory services. There are three areas of e-commerce: online retailing, electric markets, and online auctions. E-commerce is supported by electronic business.

### ***Pros and Cons of E-commerce***

Among the top advantages for starting an e-commerce for starting an e-commerce business are eliminating geographical limitations, gaining new customers with search engine visibility, lower costs for maintenance and rent with higher capacity for goods and deliveries. It's no wonder that switching your business to an ecommerce model would come with a huge amount of advantages. The core disadvantage of starting an e-commerce business include losing the personal touch of physical retailers, delaying goods or services and limiting availability of merchandise as some goods cannot be sold online.

### ***E-commerce Development in France***

E-commerce in France was worth € 81.7 billion in 2017 growing by 14% last year. And is expected to rise higher in the coming year. With more people in France interested in Digitalization, the French ecommerce turnover is forecasted to be worth 93 billion euros

at the end of this year 2018. Creating more employment opportunities, It will be affecting the economy at large impacting on productivity and inflation in a country. It's a good aspect for a country with a national debt of almost 3 trillion dollars. Hence, if e-commerce continues to grow rapidly, it could lead to an increase in productivity growth and downward inflationary pressures that persist for several years.

### ***Current State and Trends in E-commerce Development***

E-commerce has reshaped the modern marketplace in recent years and massive development has taken place. According to a study published by e-Marketer in 2016, the ecommerce sector will experience double-digit growth until 2020, when sales are expected to exceed \$4 trillion. One of the genuine differentiators in e-commerce sectors is that of faster shipping times and delivery logistics. Amazon is a great example of e-commerce delivery. Given the appetite for machine learning, technologies in the Silicon Valley and beyond, it's inevitable that the ecommerce sector will continue to be disrupted by greater integration of artificial intelligence and machine learning technology in 2018. Augmented Reality inches closer to the Mainstream than ever. Many leading retailers have been refining their AR offerings for some time, and the results have been striking. This year already has AR taking a giant stride towards true mainstream adoption with ecommerce business leading the way. Plus there is also an explosive growth in Mobile Checkout and the continued rise of internet-connected devices. With so much focus shifting from desktop to mobile, ecommerce shopping will be further transformed this year by storefront apps. There is certainly to be more entries of more storefront apps.

### ***Globalization and Future***

E-commerce is growing but only represents 11.9% of retail sales which went up from 3.5% a decade ago. The trend seems to be depicting Multichannel Ecommerce to be enabling anywhere buying. The market provides the statement "If you're looking to survive and thrive in the future of e-commerce, you'll need to build your store on infrastructure that can manage and maintain multi-channel retailing with minimal manual input from you. "So, Automation seems to be a new emerging future of e-commerce. It is already accessible reality and entrepreneurs are loving it. Eg: Tools used in e-commerce automation at Shopify plus: Shopify flow, Launchpad and Shopify Scripts. Marketing is becoming more Granular so, Micromoments are the new battleground for Optimization. Cellphones are taking over desktops with more sales happening via phones in different cases. Similarly, Social media is playing a role in helping e-commerce and social selling. Eg: Instagram has over a billion users. Selling on Instagram has proved fruitful for ORO LA. Since launching Shopping on Instagram, ORO LA has seen a 29.3% lift in month-over-month revenue. while the International E-commerce remains largely untapped.

According to Mckinsey, 1.4 billion people will join the global middle class by 2020 and 85% will be in Asia Pacific Region. CPG and retailers who enter this space will have a competitive advantage in meeting market demand. The William Wrigley Jr. Company, a popular chewing gum producer, for instance has already achieved 40% market share in China. In fact, e-commerce as a whole has likewise shifted away from the West.

### ***Conclusion***

For over the history of mankind, we have never developed our technology, science and civilization like up to this point now. We have never have this opportunity that we have now. The development and growth in the digital world has made thing simpler than ever. Producers and Consumers have access to more buying and selling opportunities than ever. The devices which we have now gives us immediate access to more retailers than we can count. And the development of e-commerce has been beneficial in a lot of terms whether it's for the individual, company, people or a nation.

## **CRISIS MANAGEMENT IN E-BUSINESS**

The purpose of risk management is to ensure that your investment losses never exceed acceptable boundaries by following disciplined practices including position sizing, diversification, valuation, loss prevention, due diligence, and exit strategies.

The reason risk management is essential - not optional - is because the amount you lose during the tough times determines how much you must make during the good times to meet your financial goals. You must preserve your capital during difficult periods so that your offensive investment strategy has a larger base of capital to grow from when profitable times return.

E-business is an electronic form of business conducted over the Internet. This business model has increased in popularity as technology has advanced with smaller and better forms of computer equipment. Many businesses started today conduct operations solely via the Internet, and may never open a traditional brick and mortar storefront. Although e-businesses may be easy to start and require little upfront cash, they are still subject to the normal risks of any businesses.

### **Systematic Risk**

Systematic risk is the risk a company faces from the entire market or market segment in which it operates. A classic example of systematic risk in the e-business market is the dotcom crash of 2000 and 2001. Several e-businesses started and went public, then were purchased by other e-businesses. Most of the e-businesses had little cash flow and were unable to make profits; these companies valued growth over financial stability, creating an unsustainable economic bubble that burst, destroying many dotcom companies. While this type of systematic risk may not occur again, most market segments may tend to operate in business cycles, growing, reaching a plateau and contracting. Owners and entrepreneurs of e-businesses must be able to assess their market segment and plan for each stage in the business cycle.

## Security Risk

E-businesses face many different types of risks related to the security of their business information and customer information. Computer viruses and hackers are constantly trying to tap into online companies and steal customer identities and financial information. These security risks force e-businesses to use software and encryption codes that limit an outsider's ability to hack into their secure systems. Online security risks can also lead to legal issues for e-businesses, as they are obligated to protect consumer information by federal and state law. Breaches in an e-business' system will also increase the company's insurance risk, as insurers require higher premiums for companies with legal issues, if they decide to take on the e-business as a client.

## Business Risk

Business risk relates to the risk companies face from conducting business operations every day. These risks include inventory, labor, overhead or supply-chain problems. Because most e-businesses do not have large physical locations or warehouses, they must rely on a supply chain for getting goods to consumers. Anytime a business must rely on individuals or other businesses to help distribute goods, risk may increase. Business risk also occurs if the e-business is unable to purchase inventory and move it through the supply chain quickly and efficiently.

### **E-Commerce Emergency Plan** aims:

- To protect staff members
- To protect consultants
- To protect the archives and records of E-Commerce data of consumers
- To ensure business continuity
- To communicate emergency needs and strategies to relevant partners inside and outside the division

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**Nicolas Dupont**  
**MBA, Professor,**  
**Finance and Crisis Management Expert,**  
**Paris, France**  
[nicdupont061@orange.fr](mailto:nicdupont061@orange.fr)

## **E-STRATEGIES: THE NEW WAYS OF BUSINESS TRANSFORMATION IN FRANCE**

France's international digital strategy, presented by the Minister for Europe and Foreign Affairs on 15 December 2017, serves both as a framework and roadmap for the coming years. It is centred around three key focuses: governance, the economy and security.

Digital technology is now a key issue for France's foreign policy and public action as a whole, be it for the success of France's economy in the global competitive sphere or for conditions of stability, security and power on a global scale.

These changes carry with them the risk of a deregulated, dangerous and closed digital sphere and as such it is time for France to define the principles for digital technology that it wishes to see succeed around the world. To achieve this, France must promote a model which is faithful to its values.

This model opposes the trends of compartmentalization, control of networks and destabilization which we are currently witnessing. Furthermore, this model does not resemble the model supported by large American and Chinese tech firms, it aims to provide greater protection by ensuring fundamental rights are respected, by supporting the principle of loyalty and by defending fair competition and taxation.

It is with this context in mind that the Ministry for Europe and Foreign Affairs has drawn up France's International Digital Strategy. It has done so in consultation with all administrations concerned and by opening up its text to public consultation. The Strategy is focused on three key pillars: governance, the economy and security. It represents a reference framework and diplomatic roadmap for the years ahead. This document enables France to promote a world which associates freedom and respect for standards. This world is situated in a European context as only the European Union has the ability to incarnate and convey this vision on the world's stage.

## **E-BUSINESS CLIMATE IN INDIA: COVID-19 RISKS AND CHALLENGES**

COVID-19 has become a moment of opportunism for Indian e-commerce companies to consolidate their market power, insert themselves into local supply chains and co-opt neighborhood stores. Policy interventions are urgently needed to preserve the autonomy of the traditional retail sector and prevent Big Tech's takeover of local economies.

When the government of India shut down the country, a certain sector received special protections: e-commerce. The lockdown order granted no such privileges to the Food Corporation of India, the agency that the poorest depend on for food rations - yet retail platform companies in food, medicine, and medical equipment were categorised as essential services and allowed to continue their operations.

This unequal treatment was a candid admission that e-commerce companies have become infrastructural utilities indispensable to India's aspirational middle class. Prior to the lockdown, Flipkart, an Indian e-commerce unicorn acquired by Walmart for USD 16 billion in 2018, had extended a hand to the government, offering to partner in any programme for the delivery of essential commodities. Then, immediately after the lockdown began, Indian e-commerce companies met with the Minister of Commerce and Industry, asking for an expedited channel for trucks and suggesting that consumers, and not the government, should decide which items are essential.

History has shown that wars, natural disasters, and epidemics are often followed by disaster capitalism: calculated, free-market "solutions" that exploit and exacerbate existing inequalities. During the COVID-19 crisis, disaster capitalism is evident in the zeal that e-commerce platforms in India have displayed. For these companies, the lockdown is the moment to consolidate their dominance in the market. The pot at the end of the rainbow must be claimed now, and the traditional retail sector—grocers, pushcart vendors, neighborhood traders who have actually been catering to the public in these trying times - rendered irrelevant.

Though the spread of coronavirus cases in India has had some impact on the ride-hailing and online food ordering segments, it has come as a boon for the e-commerce companies as more people prefer buying goods, especially grocery items, vegetables and other daily needs from online platforms.

According to industry insiders, e-commerce companies such as Flipkart, Amazon, Bigbasket, and Grofers have witnessed about 20-30 per cent spike in orders as customers are avoiding visiting crowded places like malls and supermarkets. In such an environment, where an increasing number of people are also working from home, these firms are doubling down to bring convenience to customers and win their trust.

These companies are seeing an increase in demand for products such as fresh fruits and vegetables, milk, flour, rice, and lentils, and personal hygiene items like sanitizers and soaps and household cleaning products. Other products include instant noodles, baby food and Ayurvedic items. These trends are similar to the pattern in China, where consumers increasingly relied on the internet to get their daily supplies and other products because of COVID-19, according to experts.

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**Segun Turaki**  
**MBA,**  
**Business Consulting Department,**  
**International Business Institute,**  
**France/Nigeria**  
[sturakiab82@yahoo.com](mailto:sturakiab82@yahoo.com)

## **E-STRATEGIES FOR NIGERIAN SME: THE WAYS TO IMPROVE**

Every country has its own business environment, just as every organization has its own set culture and business surroundings. While undertaking a business locally or abroad, the managers or CEOs of the organizations have to account for and consider all the external and internal as well as macro and microeconomic factors, which are likely to contribute to the success or failure of the business.

Nigeria is one of the most culturally rich yet traditional nations of the world. It is both male-centric country and class conscious, with men making most of the important household decisions and respect given to those with titles and degrees. A country's business environment is crucial for innovation and entrepreneurial development. It determines whether there are strong incentives for individuals to identify market opportunities and create wealth, jobs, and economic growth. An enabling environment that makes it easy for individuals to start up businesses, run them, sell them, and fold them if they are not successful, is one that fosters national economic growth. There are numerous indices that can benchmark Nigeria's standing in this area.

E-business is gaining more attention today more than ever before. It has remarkable impact on a wide number of industries and businesses with its amazing abilities to offer goods and services so conveniently. Electronic business is here with us and of course, most of us are already connected to its driver – the internet. In the past, businesses were linked to their local areas and to the people who could physically get to them. These days, the story has changed; businesses are operating beyond the reach of their local areas; the physical presence of those involved is no longer a barrier. For the fact that consumers expect better service delivery from businesses, this put businesses on their toes looking out for ways of filling consumer needs. The new economy demands that business must develop or reassess strategies if they are to operate successfully and serve customers satisfactorily. Hence, business needs continuous improvement and transformation. To be precise, business success in today's changing world calls for improvement in the way business is run.

The advent of internet and its technology has provided great opportunity for the improvement in the way business is run today. As a vast network of people and information, the internet is an enabler for e-business; it allows firms to showcase and sell their products and services. E-business describes the information systems and applications that support and drive business most often using the internet and its technology. The rationale for this is to present goods and services in ways that would be expedient for consumers to access them and to increase bottom line result for firms.

When new goods and services or technology are introduced into the market, consumers make decisions whether to accept it or not. A force drives the acceptance or rejection. This force propels consumers to make purchase decision which translates in their behavior to achieve satisfaction of certain needs. Electronic business is one of the emerging business models which businesses adopt to have global customer reach. It facilitates business transaction with minimal delay and greater comfort. Electronic business has not only come to stay but it is increasingly gaining prominence and also competing with the traditional business model.

E-business has come a long way to the society and the manner with which people embrace this innovation has varied. It is obvious that e-business facilitates quick and easy purchase and sale of products or services. In Nigeria for instance, students apply for admissions into tertiary institutions and other examinations online, check results online without crowding the offices of examining bodies. Many job applications and tests are done online these days. Fund transfer, air ticketing, payment of utility bills, online shopping and payment for goods and services and so forth, are done using electronic platform at one's convenience thus, reducing stress, time and cost.

The costs of doing business in Nigeria are high. An adverse business environment can add substantial production costs to firms and stifle innovation and entrepreneurship. Electricity, finance, and transport are perceived as the major constraints to doing business in Nigeria, according to a World Bank Group Enterprise Survey that asked Nigerian managers to name the major constraints to doing business.

Nigeria, having a diversified social structure and complex business environment, also poses many merits and demerits for companies, both of which affecting the country locally and globally. The country has opportunities to form good bilateral relations by increasing its export base, diversifying its economy by going global, exchanging goods and services, and even laborers. The concept of outsourcing can be a very valuable opportunity for the country like Nigeria, where there is a large labor base and good, hardworking people. By going global, small companies in the country can avail and

enjoy the opportunities of cross-border trade and appreciated foreign exchange, as well as ultimately, attain more profits. Similarly, they can expand their activities, diversify their operations, and bring in new ideas from abroad to improve their local productivity methods and procedures. This would also provide further growth opportunities and space for acquiring modern skills for coping up with the tough competition effectively. In this way, the competitiveness and productivity will boost with the passage of time while making the Nigerian companies more innovative, resilient, and profitable.

The Nigerian business environment is very threatening for itself. There is an increasing rate of crimes, frauds, and scams in the country. It has been years since the stories of water shortages have prevailed in the country and still, weak and dysfunctional resources continue to dominate. Then, there was even a time when, due to deregulation and corruption, fuel scarcity occurred in Nigeria. Thus, these crimes, frauds, illegal acts, violence, and corruption all lead to the falling reputation of the organization and losses in business. These factors hamper the productivity and become an obstacle in the way of enhancing business competitiveness. Another threat for the Nigerian companies operating locally is the foreign companies which are ruling the local markets and making the competition tougher for the Nigerian small industries.

The Nigerian companies do not have much capital to invest, are short of material resources, and have low standards of products and services. They are not equipped with advanced machinery, newer and innovative production methods, as well as educated and skilled labor. Thus, most of them almost fail when going on international platforms. The Nigerian companies do not have access to extensive allocation of financial resources on research and development programs. Thus, they will have to incur large production costs and costs of doing business if they want to go global.

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**Rahul Seeram**  
**Ph.D, Doctoral program in Information**  
**technology and Data management,**  
**International Institute of Paris,**  
**India/ France**  
[Seeramrahul@gmail.com](mailto:Seeramrahul@gmail.com)

## **USER EXPERIENCE DESIGN METHODS AND EMPATHY IN INFORMATION TECHNOLOGIES**

The Research proposal is about how design playing a most dominant part in Information technology industry and difference between the growth of companies with no User experience and with UX. Here the candidate's main focus about how user experience help any product or company to change its value in the digital market and listing out the main UX methods to enhance any product quality and make client friendly. The second part of research is about "EMPATHY" in information technologies (web or product design). Empathy plays a major role in user experience designing as it considers what clients wants and how they want any product to function.

The clients want any product to function well when company handed over to them but what happens is the product has some problem or the users unable to understand how to use it, then the user experience comes to work by knowing what the client wants and makes the product simple by removing all complications from the product and making it user friendly. The user experience designer uses certain methods and tasks to obtain user empathy which indeed helps to make product more usable.

The main points to discuss in research are the following: user interviews, ethnography, user surveys, contextual inquiry, card sorting, user statistics.

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*Andrii Kupriiov  
Student,  
Economic cybernetics,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine*

## **MODELING THE IMPACT OF E-COMMERCE ON INDICATORS OF ECONOMIC DEVELOPMENT**

### **Abstract**

Nowadays, due to the exponential growth of information technology, digitization and digital transformation around the world have become consequential, which has contributed to the enhancement and promotion of e-commerce in a wealth of countries. This process brings to pass the comprehensive renovation of most business processes and trade and economic relations in society. The reason that e-commerce, as a new advanced proceeding in the world, requires detailed research is to clearly understand the impact of e-commerce on the economic growth of different countries.

**Keywords:** e-commerce, e-business, economic growth, indicators of economic development.

**Introduction.** Due to the rapid development of information technology, increasing the role of the global Internet and integrated automation of industries, the use of e-commerce for businesses has become important not only to maintain but also to expand market position.

The urgency of the work is that the use of the Internet in business is gaining strategic importance. The Internet allows companies to enter the huge world market with their goods, significantly reduce costs in the supply and demand channels they build, serve customers at a level they could not even dream of, enter previously geographically inaccessible markets, create new labor markets. and capital, new income streams and, finally, to reconsider the very nature of their activities. That is why the task is to investigate the impact of e-commerce on economic growth.

**Purpose.** Every year the share of e-commerce in the structure of the world economy is growing rapidly. That is why the main purpose of this work is to investigate the impact of e-commerce on country's economic development and growth.

**Methodological approach.** The theoretical basis of the study is the work of domestic and foreign scientists [1-5] to study the impact of e-commerce on the economic development of the country. In the process of research, the Cobb-Douglas production function was taken as the basis of the model. The least squares method and the method of successive concessions were used to solve it.

**Literature review.** The elaboration of e-commerce and its impact on the economic development of disparate countries are attracting a lot of attention in Ukrainian and foreign scientific articles.

By way of illustration, M. N. Georgiou in his work [1] using the tools of statistics and econometrics showed that the growing share of e-commerce in the overall structure of total turnover of enterprises has a significant positive impact on economic development. In this study, were used panel data from 13 Western European countries. The main practical result of this study is the obtained equation:

$$Y_{it} = 0,017 + 0,001x_{it},$$

where x - share of e-commerce in the overall structure of total turnover of enterprises; y - annual GDP growth rate at 1995 prices; i refers to country and t refers to year.

The model satisfies three necessary criteria of homoscedasticity and normality. The coefficients are positive and statistically significant. There is no serial correlation. Therefore, the above model is robust.

Anvari Rana and Norouzi Davoud in their research [2] also demonstrated the impact of e-commerce measured in Internet purchasing by individual consumers (along with other factors such as R&D expenditure, health expenditure and government size) on GDP per capita.

The consequence shows that the independent variables of the 12 selected countries have a considerable effect on per capita income. By way of explanation, in accordance with the outcome of the co-integration test, e-commerce and research and development expenditure have a long-term positive impact on per capita GDP, but e-commerce seems to be more necessary in augmentation of economic growth.

As the worldwide market leader in regards of e-commerce is China, we will consider the article of Qu Lili and Chen Yan [3]. As an indicator of economic growth was chosen the value of China's GDP and as explanatory factors acted five components that volume the development

of e-commerce (the amount of domain names, Internet users, e-commerce enterprises, web-store customers and e-commerce transactions).

Final regression model suggests that when the amount of Internet users, e-commerce enterprises and web-store customers get 1-unit enhancement, will induce GDP rise 5,06 units, 11,54 units and 5,19 units, accordingly.

In the next article by Ukrainian scientist Tetiana Zatonatska [4], maneuvering the Cobb Douglas production function, the effect of e-commerce on the country's development indexes is investigated on the instance of Ukraine, Poland and Austria.

When estimating the reliance on e-commerce variables such as Internet transaction volume, Internet penetration rate and the country's GDP growth rate, it was discovered that the influence of e-commerce indexes on economic development was the frailest in Austria. The Ukrainian function demonstrates that the country's GDP is easily affected by Internet consumption, while Poland's GDP is easily affected by the volume of transaction conducted through the Internet. The modeling outcomes demonstrate that e-commerce has affected the country's economic growth and helped increase the GDP of these three countries.

The last article analyzed is work of Florin-Valeriu Pantelimon, Tiberiu-Marian Georgescu and Bogdan-Ştefan Posedaru [5]. The conclusion of the research is the growing of e-commerce has really had a valuable influence on the gross domestic product of the researched countries.

In addition, the globally status of the Covid-19 pandemic has had a valuable influence on global e-commerce purchasing, but the impact on GDP is still uncertain, as there are another economic spheres crushed by this status.

**Results.** The main practical result of this study is the obtained equation:

$$\ln \text{GDPpc} = 9,97 + 0,52 \ln \text{ECS} - 0,37 \ln \text{IU}\%$$

where GDPpc – GDP per capita in dollars, ECS – e-commerce sales in trillion dollars, IU% – individuals using the Internet (% of population).

Table 1

### Regression analysis of the impact of e-commerce on economic development

	<i>Coefficien ts</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	9,97	1,5800	6,3083	0,0080
ln ECS	0,52	0,1902	1,9585	0,1451
ln IU%	-0,37	0,4363	-1,3101	0,2814

#### Source: author calculations

The constructed model is adequate and statistically significant because the coefficient R Square and Significance F is 0,907 and 0,028 accordingly. The overall impact of e-commerce on indicators of economic development of Ukraine is 15%.

**Conclusions.** Since e-commerce has a fairly significant growth rate in this paper, the impact of e-commerce on economic growth was investigated. A review of Ukrainian and foreign literature related to this topic led to the conclusion of a significant positive impact of the expansion of e-commerce on the economic development of the country. This conclusion was verified by constructing a model in the form of a Kobe- Douglas production function. In addition, it was determined that globally status of the Covid-19 pandemic has had a valuable influence on global e-commerce purchasing, but the impact on GDP is still uncertain, as there are another economic spheres crushed by this status.

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## **MODELING THE IMPACT OF E-COMMERCE INVESTMENT ON R&D**

### **Abstract**

Ukraine is one of the developing countries. Although against the background of other countries, the pace of development of Ukraine is somewhat slower for various reasons: economic and political instability, the COVID-2019 epidemic, the devaluation of the hryvnia, and so on. However, it can be noted that development is still there. It was also decided to analyze the relationship between e-commerce and investment in R&D with the economic development of the country. The study constructed a multiple regression for Ukraine, identified the relationship between the selected indicators and their impact on GDP per capita, and provided some recommendations for further development of the country.

**Keywords:** GDP, regression models, correction models, E-commerce, technological progress.

### **Introduction**

Every year, more and more you can see that the Internet occupies a significant place in people's lives. It occupies many areas of life. With the advent of the coronavirus COVID-2019, many companies have applied remote work mode, online trainings and courses, even schoolchildren and students have partially switched to online training. Now it is impossible to imagine a person who would not have heard about the Internet. The Internet is becoming a part of the life of everyone who wants to develop and run his or her own business.

In most cases, the Internet as a new territory for doing business provides many opportunities to display the real economy of the state in a virtual universe. The rapid development of e-commerce opens up new prospects for doing business. It is possible that E-commerce will become the catalyst that will lead to the creation of new models of market relations, new associations of partners and, as a result, a completely new economy and technological progress.

## Literature review

The paper, which examines trends and discusses the impact of e-commerce on the global economy and economic sectors such as technological innovation, also warns of negative consequences if developing countries fall further behind technologically behind the industrial world. It addresses the legal and regulatory issues that arise with the advent of the electronic age, and is intended largely as a guide for emerging countries to make the digital revolution work for them. The authors' works used the following methods:

- regression models, as in their comparison of the impact of investment in the country's technological development on GDP;
- econometric modeling of the relationship between indicators of financial and industrial activity of industries (types of economic activity) and investment processes based on models with distributed lags, cointegration relationships, and error correction models;
- identification of possible moments of endogenous structural jumps in the dynamics of the analyzed indicators and use of appropriate tools to take into account structural changes in modeling;
- econometric modeling of a stochastic production boundary based on a modified model with;
- bootstrap approaches for constructing confidence intervals of parameters and test statistics.

## Purpose

The aim of this paper is to identify the impact of e-commerce investment on GDP in different countries, as well as the impact of e-commerce investment on the unemployment rate.

## Methodological approach and discussions

Based on the article [2], the author constructed the following model:

$$GDPP = \alpha + \beta_1 RDE + \beta_2 CE + \beta_3 IU + e, \quad (1)$$

where  $\alpha$  – constant (free variable);  $\beta_1, \beta_2, \beta_3$  – model parameters;  $GDPP$  – GDP per capita, measured in thousands of US dollars;  $RDE$  – R&D expenditure, measured in thousands of US dollars;  $CE$  – consumption expenditure, measured in thousands of US dollars;  $IU$  – number of internet users.

A regression model was constructed that analyzed how such criteria affect GDP per capita in Ukraine from 2002 to 2020.

The obtained results of the regression can be seen in Figure 1.

```

Coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 1.432e-01 6.322e-02 2.266 0.03870 *
rde         1.934e-07 6.271e-08 3.084 0.00757 **
ce          2.236e-05 9.618e-07 23.249 3.53e-13 ***
iu          5.158e-09 3.773e-09 1.367 0.19176
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.08607 on 15 degrees of freedom
Multiple R-squared:  0.9935,    Adjusted R-squared:  0.9922
F-statistic: 762.9 on 3 and 15 DF,  p-value: < 2.2e-16

```

**Figure 1. Summary of the constructed regression**

Source: modelling results

Substituting the obtained coefficients into equation (1), we obtain the following:

$$GDPP = 0,1432 + 1,934 * 10^{-7}RDE + 2,236 * 10^{-5}CE + 5,158 * 10^{-9}IU \quad (2)$$

Therefore, the coefficient of determination is 0.99, which indicates the quality of this model. The values of the F-criterion and p-level indicate the adequacy of the model.

```

Call:
lm(formula = u_ukr ~ rde_ukr + ce_ukr + iu_ukr)

Residuals:
    Min       1Q   Median       3Q      Max
-0.050747 -0.025748 -0.001006  0.020766  0.065061

Coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept) 3.206e-02 2.501e-02  1.282  0.219
rde_ukr     -1.018e-08 2.481e-08 -0.410  0.688
ce_ukr       4.589e-07 3.806e-07  1.206  0.247
iu_ukr      -3.561e-11 1.493e-09 -0.024  0.981

Residual standard error: 0.03406 on 15 degrees of freedom
Multiple R-squared:  0.2302,    Adjusted R-squared:  0.07619
F-statistic: 1.495 on 3 and 15 DF,  p-value: 0.2563

```

**Figure 2. The results of testing the model for heteroskedasticity by the Glaser method**

Source: modelling results

Table 1

## The results of correlation analysis

<i>Ukraine</i>	<i>R&amp;D expenditure</i>	<i>Consumption expenditure</i>	<i>Internet users</i>
<i>R&amp;D expenditure</i>	1		
<i>Consumption expenditure</i>	0,354847323	1	
<i>Internet users</i>	0,406676885	0,562711768	1

Source: modelling results

When analyzing the model parameters, note the following:

- the following criteria have the most significant impact on GDP per capita: R&D spending, consumption spending;
- the least significant factors are the number of internet consumers;
- the model was tested for heteroskedasticity by the Glaser method. During the inspection it was found that heteroskedasticity is absent, because the constructed model was not adequate, which can be seen in Figure 2;
- the constructed model can be considered reliable, because the correlation coefficient for all independent variables is less than 0.5, except for a pair of the number of Internet users – consumer costs.

As we can see from the constructed model, there is a direct relationship between GDP per capita and the selected criteria, but we should not forget that the criteria for GDP per capita and consumer spending are beyond the acceptable level of relationship between independent changes.

### Conclusions

It can be concluded that investment in e-commerce is directly related to GDP, but service providers that are financially important, especially from developing countries and transition economies, will have to overcome the high costs and high technological level of installing online payments before they can hope for «readiness for e-finance». The main recommendations for attracting investment to the regions include the following:

- increase investment in the scientific community to improve technological development, namely secondary, vocational and higher education institutions, which will help increase the level of training of young people and increase the knowledge of existing professionals;

- holding annual investment fairs to inform potential investors about existing investment projects in the regions, to increase the level of smart industrialization in the regions and the country as a whole;
- improving the business environment for FDI, namely reducing taxes on foreign investment, which will allow foreign companies to enter the Ukrainian market more easily, with the emergence of new jobs to reduce unemployment and accelerate the development of smart industrialization;
- development of new and improvement of existing platforms for smart contracts, which will reduce the level of corruption, optimize the process of signing contracts, increase the level of security and protection of information;
- ensuring transparency and transparency in decision-making related to investment activities. Transparency and publicity of information about the company will avoid excessive corruption, and users and potential investors will be able to assess the situation and the company without going directly to the representatives of the company.

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*Maryna Hubska*  
*Student,*  
*Taras Shevchenko National University of Kyiv,*  
*Kyiv, Ukraine*  
[maryna.hubska@gmail.com](mailto:maryna.hubska@gmail.com)

## MODELING THE IMPACT OF EPS ON THE ECONOMIC DEVELOPMENT OF COUNTRIES

ORCID 0000-0002-7403-9106

JEL Classification: F17, G35, O57

### **Abstract**

The modern economy no longer needs quantitative but qualitative changes for its further development. One aspect of such changes is the digitalization of the financial sector, in particular through the introduction of electronic payment systems. The impact of the introduction and spread of electronic payment systems on the level of GDP growth and other macroeconomic indicators that characterize the economic development of the country through the use of different econometric models was analyzed on the example of countries of different levels of development: Nigeria and Italy. Two econometric models have been built to assess the interaction between electronic payment systems and the economic development of the Eurozone countries.

The abstracts also present the causal links between the development of payment systems and their impact on the economic situation in the country.

**Keywords:** EPS, electronic payment systems, digitalization, economic development, economic growth.

### **Introduction**

Today's digitalization trends apply to all areas of people's lives and the economy as a whole, including trade and payments. It has become common to make purchases online and immediately pay for them with your bank card or go to the store without any wallet, but only with your smartphone with PayPass. The development of electronic payment systems has become part of the modern economic market and directly affects its development. At the same time, it is important to understand how strong this impact is and how it can be used to benefit the country's economy.

Various studies conducted in recent years (Moody's Analytics (2016), Deloitte (2013)) show the positive impact of electronic payment systems on the economies of different countries. However, there is a necessity of building a model for quantifying such an impact by comparison of the costs of the transition to EPS and expected income. What is more, it is valuable to compare countries of different level of economic development: Nigeria and Italy.

### **Literature review**

Usually, electronic payment systems are associated with the countries of the highest level of development. However, the implementation of the EPS will have no fewer positive consequences for third world economies. This is proved by Saidi Atanda (2018) on the example of Nigeria. The development of EPS in this country began in 2012 after a directive from the National Bank. The author calculated the sortino index for first 5 years of implementation of non-cash payments in the country. The value of electronic payments is accepted as a regressor, and the effectiveness of such implementation – performance index and risk exposure – are defined as dependent variables in regression. The results of the study show that the performance of Nigerian banks has increased since the introduction of EPS in all four areas of implementation: ATM, POS, Mobile Money, Online Banking. Moreover, performance does not depend on the previous period (lag data was analyzed), but is affected by the current situation of banks, the amount of resources at their disposal to meet current commitments.

Another study of electronic payments in Nigeria uses the ARDL model to test their relationship between economic development. Efanda (2018) tested three hypotheses: there is no significant link between EPS, POC systems, and web payments and Nigeria's economic development. The author used a regression of real GDP growth, which depended on the value of the growth of the previous period, as well as Automated Teller Machine Payment System, Point of Sales Payment System, Web Payment System, as econometric model. All indicators of electronic payment systems had a positive impact on Nigeria's GDP growth.

At the same time, the analysis of electronic payment systems allows to make a forecast of the level of economic activity in the country for a certain period of time. In particular, this is shown in the article Aprigliano (2019) on the example of Italy. As for Nigeria, the author showed a positive relationship between the level of change in GDP by sectors of the economy, as well as consumption, investments, and the use of payment systems through the MIDAS model. Indicators for model were chosen by LASSO. What is more, the author made an important conclusion on the collection, processing and analysis of

large data on trade transactions through electronic payment systems in contrast to cashless payments, which are important for further research and conclusions.

### **Purpose**

The purpose of this work is to build econometric models to determine the quantitative relationship between the implementation of the EPS and the economic development of the Eurozone, in particular: regression model, which shows the relationship between the number of bank cards and macroeconomic indicators.

### **Methodological approach and discussion**

Cashless payments using electronic payment systems are drivers of the development of a transparent economy, reducing the level of shadowing of trade. This is confirmed by the IMF study (2018), according to which the lowest level of the shadow economy (Switzerland - 7.24%, USA - 8.3%) is shown by the countries with the highest level of non-cash payments (Switzerland - 83% of GDP, USA - 76 % of GDP). Cashless transactions are under monitoring of the payment systems and it is more difficult to hide real turnover of funds in a company.

In addition, electronic payment systems facilitate trade and therefore speed up trade operations, which in turn accelerates GDP growth and the economy development as a whole. As a result, we have the development of certain sectors of the economy, the creation of additional jobs and improving the general standard of living. It is a great opportunity to provide immediately transactions between entities everywhere in the world (cross-border trade). The market receives greater choice of goods and services which stimulates competition in the markets, as well as innovative approaches in production.

Another advantage of the electronic payment systems is the increase in bank capitalization, which has a positive impact on the stability of the country's financial market.

Moreover, electronic payment systems are becoming a priority for the growing economically active population, which opting online payments as opposed to cash payments.

To confirm these theses, the impact of the spread of electronic payment systems on the economic development of the world was modeled.

The analysis was performed using linear regression. ECB data for the Eurozone for 2000–2020 were selected, namely: the number of bank cards, the amount of transactions through EPS in monetary terms, as well as basic macroeconomic indicators (GDP, unemployment, inflation, the level of shadowing of the economy, the volume of exports, the volume of imports, etc.).

The simulation was implemented using the packages `pandas`, `statsmodels.api` in the Python.

The final version of linear regression model explains the relationship between the number of bank cards and GDP per capita. The number of transactions through electronic payment systems has a positive effect on the dynamics of GDP per capita ( $R^2 = 0.94$ ). According to the model, it can be concluded that each 1,000,000 cards issued brings additional 40 euros to the GDP per capita, which is 0.14% of the average value of this indicator for the period under study (28 thousand euros). Thus, we can conclude that the expansion of the network of customers of electronic payment systems has a positive impact on the economic growth of the territory where such implementation takes place. It is worth noting that the figure of 0.1% to the cumulative GDP growth in the world was obtained in a study by Moody's, which confirms the correctness of our calculations [1].

## Conclusions

Electronic payment systems have a positive impact on economic development. The analysis of statistics allow to conclude, that EPS help to reduce the percent of shadow “cash” economy, speed up trade operations, make them more accessible and more attractive to the growing generation of the economically active population. What is more, electronic payment systems increase the financial stability of country, especially banking system.

Econometric models have demonstrated a direct quantitative impact of the use of electronic payments and economic growth of the country (EPS contributes 0.1% to a country's or region's GDP). In addition, with the help of using machine learning models, it is possible to assess the relationship between the directions of change in real GDP and indicators of development of electronic payment systems.

Thus, according to the results of the study, there is the positive impact of electronic payment systems on the economic development of countries, and therefore strategies and concepts for the development of macroeconomic entities should consider the possibilities of digitalization of the financial sector.

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## TECHNOLOGIES FOR SECURING INTELLECTUAL PROPERTY THROUGH THE USE OF SMART-CONTRACTS

### **Abstract**

The work is devoted to the coverage and evaluation of smart contract technology as one of the current ways to ensure the implementation and protection of copyright.

Every day terabytes of content are created around the world. Protecting your rights is not easy without proof. Creators risk stealing or using their works without their consent. Most people who create unique content face copyright infringement in one way or another. All previously existing methods have shown their ineffectiveness, especially with regard to objects of modern copyright and related rights, expressed in digital form. The possibilities of using smart contracts are almost limitless, as they allow you to safely process any information, information resources that require identification to a particular entity and which can not be changed or deleted without the consent of their owner.

**Keywords:** smart contract, blockchain, hash, intellectual property, register, block, copyright.

### **Introduction**

Nowadays, an alternative version of copyright confirmation - the preservation of works in a public decentralized register - blockchain - has become widely known. In short, first of all, the blockchain is effective as a fact of confirmation of the creation and download of a work, official document, audio or video. In addition, this technology provides cryptographic confidentiality of data by analogy with the protection of banking transactions on the Internet or the protection of text messages in messengers such as WhatsApp or Telegram by creating a special "hash" and creating a set called "block".

The convenience of the blockchain is that it is allowed for everyone involved in the exchange of anything with its help, to know about the transactions of other participants, as well as the opportunity to coordinate their activities without wasting time and money, such as the registration in official government systems [1].

However, even with the existence of such technology, the understanding of what a blockchain is has not yet been clearly formed in Ukraine. Meanwhile, the active use of the blockchain in various fields makes it necessary to determine it, including the need from a legal standpoint. This is especially true due to the fact that all references to digital circulation in the law, in the speeches of high-ranking officials and in the information space of the Internet, one way or another, are related to the world of intangible assets and their tokenization using blockchain.

### **Literature review**

There are several approaches to denoting the legal nature of the blockchain. Yes, many simply point to it as a technology on the basis of which many cryptocurrencies appear; technology of a single space in which there is no intermediary. According to AI Saveliev, it is a technology that is a decentralized register of data on transactions, which is based on cryptographic algorithms that protect it from fraud [2].

### **Purpose**

The purpose of this work is to highlight and evaluate the technology of smart contracts as one of the most important ways to ensure the implementation and protection of copyright and related rights, expressed in digital form, and the state of its legal regulation at the present stage of development, because the emergence of digital circulation and blockchain transactions activities leads to the need to collect and analyze information about the nature of changes in the rights and responsibilities of the parties, because such actions increase the value of production of intellectual products and stimulate the formation of a system of values on the Internet.

### **Presenting main material**

The possibilities of using blockchain are constantly evolving. According to AI Saveliev, one of the promising areas of application of Blockchain technology is the possibility of its application to create fully automated, programmed contracts, ie such agreements that can be concluded and executed without human intervention. Such contracts are generally referred to in the foreign literature as "smart contracts". This technology is also used in the formation of distributed registers of rights to certain assets. In this case, each participant in the electronic interaction will have access to the full transaction history for such an asset and a copy of such a register, which will be completely identical for each participant and will be synchronized on a blockchain protocol without the central depository of the register [2].

In the field of copyright, the use of the blockchain is updated by the non-registration procedure for the emergence of copyright in most countries - parties to the Berne

Convention. Existing platforms based on blockchain, such as Proof of Existence, Keybase, Storj, Blockchain Apparatus, Binded, Monegraph, Verisart already provide users with the opportunity to work confidentially with documents, they can be divided according to the nature of services provided to the rights holders. A number of platforms such as "Proof of Existence" (founder Manuel Araoz, Argentina) allow creators of copyrighted works, computer programs and other objects that are transformed into digital form, easily prove the authorship and date of compilation of documents. The cryptographic operation of creating a hash is performed on the client side, which falls into the transaction, and the transaction - in the block [3].

The use of blockchain platforms gives rights holders the ability to control the circulation of intellectual property on the Internet and enter into contracts with third parties. After registration, the author of the copyright work is issued a digital certificate of authenticity, which allows third parties to identify the author of the object or other copyright owner. For the purpose of ensuring the safety of works, for example, programs such as Binded, Monegraph, Verisart can be used, which allow users to permanently record digital content (data), such as photos and text, as well as browsing history, changes and other actions. Edits of actions, protected from editing, can serve as the evidence, the authenticity of which cannot be challenged. In addition, it is possible to track the actions of users of the platform.

From the standpoint of information law, the blockchain should be considered primarily as a kind of information technology, on the basis of which is the collection, processing, storage and transmission of information. For the most part, the blockchain can be considered both as an information system that makes up the register of information, and as information technology processing, including the formation, storage of accurate, specific data confirming the set of property and other rights and responsibilities of their owners, and as technology, which allows for electronic payments and other legally significant actions. The accuracy and specificity of such data is protected by mathematical rules in such a way that due to the unique identifying symbols they are associated with their owner. Therefore, any user, including payment systems, can be sure that this data belongs to its owner. This system allows for maximum simplification of the interaction of the subjects of settlement relations. The protection of symbols is provided by a mathematically verified system of generating identifying symbols, which allows to protect the blockchain data as much as possible from illegal alteration, forgery or deletion.

The blockchain technology itself, in fact, is computer code that describes a computer program, the rules according to which it works. No computer code is protected from

errors, vulnerabilities, called "bugs". For this reason, the contract included in the computer code to which the transactions are made, in the event of a computer error may not be executed improperly. The consequences of such errors, including disputes between persons whose interests are violated in this regard, should be regulated by law or other contractual terms that are already included in smart contracts, added to the codes of relevant programs. Experts emphasize that the blockchain itself will not be able to become a panacea for solving all problems, including the transition of works, say, in the public domain, therefore, not only the legal framework for the regulation of such technical systems is needed, but also the state mechanisms for their implementation. The legal force of blockchain is being recognized around the world: the California government has approved the legalization of blockchain and smart contracts [4]; Arizona recognized the legal force of the blockchain in the spring of 2017 [5]; The United Kingdom is conducting a project to explore the possibility of legalizing smart contracts using blockchain [6]; Russia has launched a "Single Depository of Intellectual Activity Results", where you can register copyrights for computer programs, works of literature, design sketches, music, photography and more through the blockchain.

## **Conclusions**

Blockchain is a non-partisan digital book of economic transactions that can be programmed to record not only financial transactions but also virtually anything of value. To unleash the full potential of a new blockchain-based copyright management system, it must be used by a large number of copyright holders and cover a sufficient number of copyrighted works. As the number of users increases, the system will become even more valuable and will be able to attract a wider range of user audiences.

Blockchain technology allows you to minimize transaction costs, increase the level of commercialization and ensure reliable protection of intellectual property. The task of state legal regulation remains a clear legal regulation of digital circulation of intellectual property and ensuring a balance between the private interests of right holders, users and the public good in the form of free circulation of intellectual property of universal importance. Thus, the legislation must be adapted to new technologies, and given the inherent nature of cross-border blockchain technology, it is also necessary to harmonize legislation throughout the world community, in particular to establish applicable law. It is necessary to direct the activities of state and international bodies to regulate the protection of users of such technologies, including provisions on copyright and related rights to objects expressed in digital form, implementation of anti-money laundering, market manipulation, dissemination of information with limited access, etc.

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## **MODELS AND METHODS FOR EVALUATING THE EFFECTIVENESS OF USING COMPUTER SOFTWARE FOR ENTERPRISES**

### **Abstract**

The Industrial Revolution, which opens up fundamentally new opportunities for organizing production using smart contracts, big data, artificial intelligence, total automation, and so on, leads to the need to review the effectiveness of all the factors translated above.

**Keywords:** Markov models, machine vision, "smart" production systems, Carin systems, smart contracts.

### **Introduction**

One of the most widespread scientific approaches to the study of economic phenomena is the use of the methodology of economic and mathematical modelling, which allows us to study the properties of economic systems and predict their development based on mathematical models that consider the main features of the systems under study. These properties and advantages of the economic and mathematical modelling toolkit allow us to use it for research and optimization of the processes of implementing "smart" production systems to solve the following tasks: identification and assessment of the impact of information factors, which are the driving forces for the formation of a smart industry; optimization of resource costs by focusing them on the most promising areas from the position of influencing the development of the smart industry; forecasting the development of the economy taking into account the influence of information factors and so on.

### **Literature review**

Based on the generalization of foreign experience in economic and mathematical modeling of "smart" production systems, it is determined that most of the publications devoted to the formation of the smart industry are either descriptive and introductory or consider this process from an engineering point of view. Publications of economic

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analysis are not numerous, their conclusions are of an empirical descriptive nature, based on existing observations, and the methodological variety of economic and mathematical models used mainly covers correlation and regression analysis. It is argued that economic and mathematical modeling of "smart" production systems should be carried out by developing well-known models with additional parametrization of specific conditions associated with the institutional features of different countries. Therefore, different parameters for evaluating the effectiveness of models are used for most countries.

Thus, theoretically, by examining the level of use of this information factor in the economy of various countries or in various industries, it is possible to assess the degree of compliance of these economies (industries) with the criteria of smart industrialization, or simply, the degree of their "smartization". Since one of the key trends in the current stage of industrial development is the increasing role of digital information technologies in all aspects of production activities, the justification of management decisions in this area requires an assessment of the criteria for compliance of individual enterprises, entire industries and even countries with the amortization criteria.

### **Purpose**

The purpose of this study is to assess the level of smart industrialization of economies of different countries and individual enterprises.

### **Methodological approach and discussions**

The use of articles substantiates that value added in the processing industry at the present stage of production development, in addition to traditional factors of production, the information factor, or the factor of "smartization" of production, has a significant impact. As traditional factors of production, the use of the number of hours worked in PP (as a factor of "labor") and the cost of machinery and equipment at comparable prices (as a factor of "capital") is justified. It is also proved that the best estimate of the information factor is the cost of computer software and databases in PP at comparable prices.

To assess the impact of the information factor on the PP of these countries, we will build production functions. This requires the use of appropriate indicators, which are currently lacking. According to the results of modeling the production function, the main factor for analyzing the level of amortization is the cost of the cost of bullpen and database. As we can see from one of the articles, this is the most effective analysis. The cost of bullpen' and databases correlates with the complexity and variety of tasks you perform, so this indicator dynamically reflects the increase in the complexity of tasks performed

per unit of equipment used, in particular, the intellectualization of the machines used. In addition, this indicator is comparable for different economies and industries, it can be compared in dynamics and used at the micro level to assess the amortization of individual enterprises. The following countries were selected to develop the testing approach: Germany, the Czech Republic and Australia. Germany - as a standard of Information development processes in Europe; the Czech Republic - as an example of a developed country with a special, socialist past; as a developed country remote from Europe. In addition, the choice of countries is related to the availability of the necessary statistics on the cost of bullpen and database, which are presented for an arbitrarily limited number of countries. The cost of bullfinches and databases in Germany and Australia is steadily growing from year to year: for Germany, the increase was 120% (2.2 times), for Australia – 178% (2.78 times). In the Czech Republic, with an overall growth of 136%, growth was not always stable and was observed in 2003-2009 and 2013-2019, while in other periods there was a decrease in this indicator due to the global crisis and the COVID-19 pandemic. To assess the impact of the information factor on the PP of these countries, we will build production functions that include this factor of production along with traditional ones, according to the methodology justified in the work [5].

Based on the previous section, it is proved that the endogenous variable in this study should use value added in the processing industry of countries, namely Germany million. euro, Australia million. Australian dollars and Czech Republic million. CZK in 2021 prices (Y). As exogenous (factors of production):

- cost of computer software and databases in the processing industry, mln. euro, Australian dollars and Czech kronor 2021 (J);
- for Labor: the number of hours worked in the processing industry, million. hour. (L);
- for capital: the cost of machinery and equipment in the processing industry, mln. euro, Australian dollars and Czech kronor in 2021 prices (K).

The direct relationship between these factors and value added, which would not contradict the economic content of the production function, can only manifest itself as a result of the multiplicative effect of the connection of these factors with the growing factor of informatization. In this regard we construct a three factor multiplicative function of the form:

$$Y = a^0 \cdot J^{a^1} \cdot L^{a^2} \cdot K^{a^3} (1)$$

This is an analog of the Koba-Douglas function only for the three – factor case, where Y are the model values of value added in the processing industry; L, K, and J are, respectively, the costs of labor, capital, and informatization factors.

Substituting the obtained coefficients into equations (1, 2, 3), we obtain the following:

$$Y = 0,18 \cdot J^{1,48} \cdot L^{2,2} \cdot K^{-1,56} (2)$$

$$Y = 0,04 \cdot J^{0,97} \cdot L^{0,76} \cdot K^{0,17} (3)$$

$$Y = 0,000\ 002 \cdot J^{-0,11} \cdot L^{1,17} \cdot K^{1,37} (4)$$

In all models, the coefficient of determination is greater than 0.86, which indicates the high quality of these models. The values of the F-criterion and P-level indicate the adequacy of the models.

So, after analyzing the A1 coefficient, we have that Australia(-0.11) is the outsider in terms of bullpen and database, and Germany (1.48) is the leader. Based on this model, we can conclude that German enterprises use the most effective computer software program.

Also, do not forget about the disadvantages of this model, namely:

- it is problematic and almost impossible to track the dynamics of the smart industrialization process and compare how much the level of smart industrialization of a particular economy has changed over a short period of time.
- Cobb-Douglas models are macroeconomic [5] and, therefore, are not suitable for studying and comparing individual industries and enterprises.

## Conclusion

Analysis of the values of the proposed indicator for the manufacturing industries of Germany, the Czech Republic and Australia allowed us to conclude that among the countries considered, Germany is the leading country in terms of smart industrialization, Australia ranks second, and the Czech Republic lags behind. These data correlate with the available information on the level of development of advanced production in the countries under consideration.

Based on the results of the analysis, we can assume that the most effective bullpen in Germany. So, the most effective models produced in German industrial[6] enterprises, namely:

- models of artificial neural networks for machine vision, mechanical and robotic systems, production automation tasks and intelligent production systems.

- Markov and semi-Markov models, mathematical models of queuing systems theory, Petri nets for describing and automating production processes, creating new equipment, improving technological processes.

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## MODELING THE IMPACT OF E-COMMERCE ON GLOBAL GDP

ORCID 0000-0001-6909-7478

JEL Classification: C01, F17, O47

### **Abstract**

Nowadays electronics commerce is developing at a rapid pace and its value cannot be diminished. Information and Communication Technology (ICT) promotes the development of international cooperation between various companies, opening new opportunities for enterprises and customers. Thus, there is no doubt that these technologies effects economic growth and share of e-commerce will increase in the future. This study provides the analysis and modeling of relationship between global GDP and some e-commerce indicators such as individuals using Internet (% of population), individuals using the internet for ordering goods or services, and investment in ICT with private participation.

**Keywords:** e-commerce, GDP, economic growth, economic development, econometric analysis, regression.

### **Introduction**

E-commerce as a set of economic relations between subjects of different national economies regarding the exchange, distribution, and redistribution of goods using computer technologies as an instrument of information exchange, becomes a natural consequence of scientific and technological progress and profound changes in the structure of global consumption and economic growth.

The transition of enterprises to electronic methods of doing business makes it possible to upturn the effectiveness of marketing promotion, improve customer service and communications with the target audience, expand distribution channels, and help optimize financial and time costs.

E-commerce helps an organization cut the cost of distributing, receiving, and managing paper-based information by digitalizing information. Besides, ICT helps the government provide public services such as health care, education, social services at reduced prices and in an upgraded way.



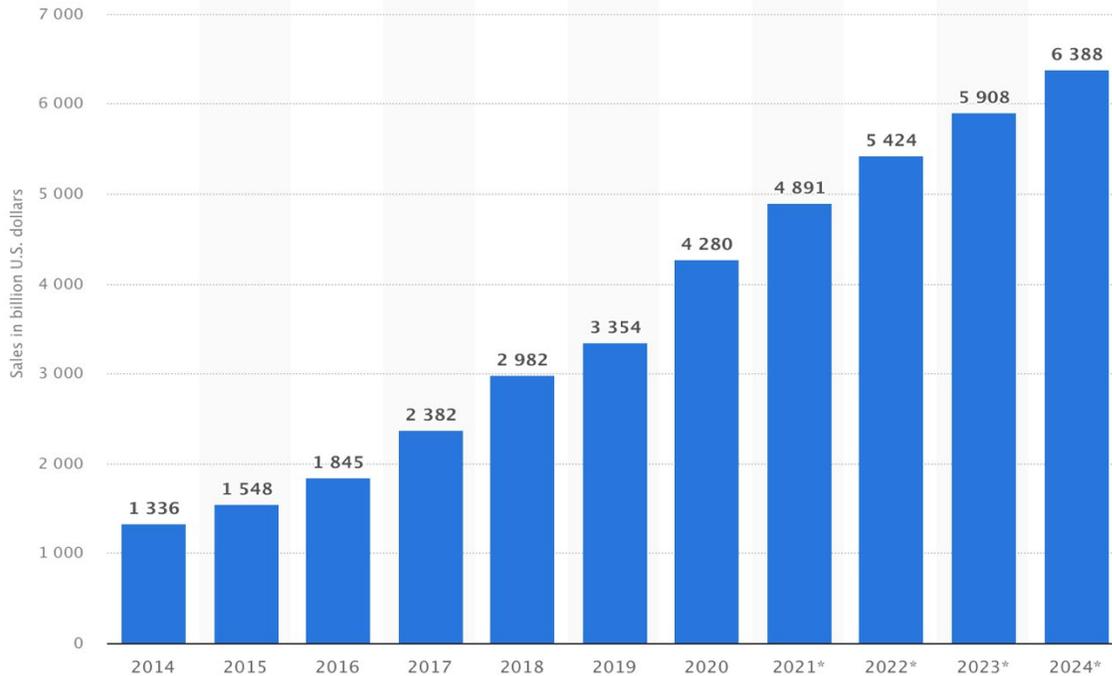
**Figure 1. Real GDP growth (annual percentage change)**

Source: IMF Datamapper [1]

Gross Domestic Product (GDP) is the outcome of the production activities of resident producers during a given period and is calculated in market prices. It characterizes the interrelated aspects of the economic process: the production of goods and services, the distribution of income, the final use of goods and services. Besides, GDP is the main indicator of economic development.

The coronavirus pandemic forced many countries to establish quarantine measures and widespread lockdowns, which, as expected, led to a decrease in GDP. According to the International Monetary Fund, the global economic decline in 2020 was 3.5%, while the US economy contracted 3.4%, Japan -5.1%, Germany - 5.4%, France - 9.0%, India - 8.0% [1]. According to State Statistics Service of Ukraine, Ukraine's GDP decreased by 4% [2]. Among the world's largest economies, only China showed 2.3% growth (Figure 1).

However, the results could have been much worse unless the explosive growth of e-commerce. Its development is facilitated by a high level of Internet penetration, which on average in the world at the beginning of 2021 amounted to 64.7%, in Europe – 87.1%, in North America – 89.9%, in Asia – 62.6%, in Africa – 46.2% [3].



**Figure 2. Retail e-commerce sales worldwide from 2014 to 2024 (in billion U.S. dollars)**

Source: Statista [4]

The amount of retail e-commerce sales worldwide was increasing during last year and has tendency to grow, as shown in Figure 2. The purpose of this study is to analyze the relationship between some selected indicators of the e-commerce market and global GDP.

### Literature overview

Topical studies of foreign and domestic authors have shown that an escalation in the share of ICTs in the global economy leads to an increase in GDP. For example, RD Anwari and D Norouzi in their 2016 study observed the impact of e-commerce on economic development in 21 selected countries. Generalized Least Squares Regression (GLS) method was used for data between 2005 and 2013 in this study [5].

Romanian authors FV Pantelimon, TM Georgescu, BS Posedaru in their paper compared two countries from European area and analyzed how Covid-19 influences the e-commerce activity worldwide [6]. They gathered different types of statistics: the

internet access and evolution of internet adoption, the level of GDP between 2014 and 2019 in analyzed countries, and data about ICT during the same years. Regression was used to correlate the data. The research proved positive relationship between mobile commerce growth and the GDP both of Romania and Germany. Furthermore, results displayed positive effect of pandemic on the online shopping.

T Zatonatska, O Rozhko, N Tkachenko observed modern trends of impact e-commerce and R&D on economies of Austria, Poland, and Ukraine [7]. By means of econometric analysis three models were built for each country. The hypothesis about significant impact of ICTs on GDP per capita was confirmed.

## Results

The modeling was performed using linear regression method. For analysis e-commerce data was selected: individuals using Internet (% of population), individuals using the internet for ordering goods or services, investment in ICT with private participation. GDP (in billion U.S. dollars) was used as macroeconomic factor of economic development. The model explains the relationship between ICTs and economic growth and shows the positive impact of e-commerce on global GDP ( $R^2 = 0,89$ ).

## Conclusions

Although the global economy is in decline because of Covid-19 pandemic, some sectors are seeing a rise in values, including e-commerce. Moreover, it is an effective way to increase economic development worldwide. The analysis given in this paper provides the evidence of positive impact of e-commerce on global GDP and shows that the future ICTs growth is evident.

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## MODELING THE IMPACT OF E-COMMERCE ON THE INTERNATIONAL DIVISION OF LABOR

ORCID: [0000-0002-6258-1707](https://orcid.org/0000-0002-6258-1707)

### **Abstract**

The development of the Internet and modern technologies has transformed wholesale trade to such an extent that most transnational flows of goods cover online platforms, reaching a situation where e-commerce has become a function of transnational B2B trade.

**Keywords:** e-commerce, B2B, labor.

### **Introduction**

E-commerce is defined as a business model in which business is conducted through the Internet and electronic networks. E-commerce can be carried out in different forms and forms (Anjali Gupta, (2016)):

- in different types of business. There are players who only sell online.
- different involvement of the parties in e-commerce. Example: B2C, B2B, C2C, B2A, etc.

Strong market players such as Amazon, Alibaba, eBay, etc., dominate the e-commerce market segment, where net players participate (Nuray Terzi`a (2011)). Although these players have achieved a global presence, they do not dominate all markets. The "clean" e-commerce market is approaching maturity in many segments, and large companies have reached its dominant and monopolistic position in the market. Dominant companies are prone to unfair commercial practices that prevent small players from entering the market.

## **Literature review**

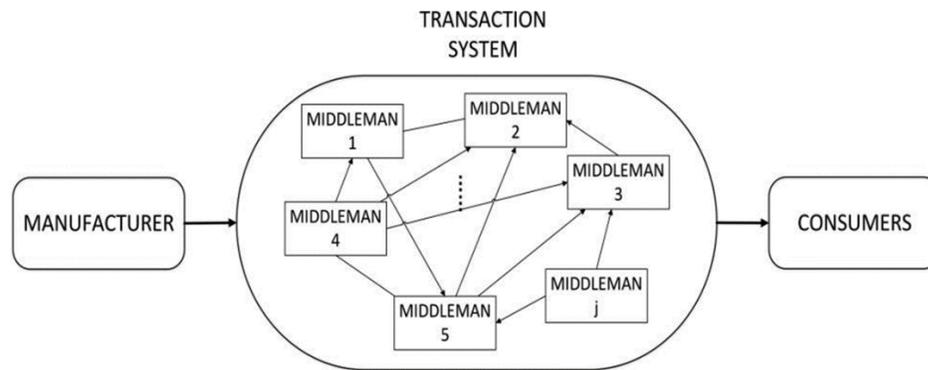
By modeling product and information flows on separate but connected subnet domains, it is possible to demonstrate the nature of the relationship between logistics in geographic space and e-logistics in cyberspace. This is exactly what Yuko A., Samuel J. R. and Guido S. did in their work (Yuko Aoyama, Samuel J. Ratick, Guido Schwarz (2005)). Their results suggest that competitive transport costs can still play an important role in the logistics industry even after the introduction of B2B e-commerce. However, B2B ecommerce intermediaries have been adopted in all scenario decisions, which demonstrates the sustainability of the benefits that such intermediaries can provide and is a good predictor for the further growth of e-logistics.

## **Purpose**

The single-purpose static optimization model presented by the authors minimizes the total cost of the supply chain in one case. Modern production processes, which rely on timely delivery and lean production strategy, usually require a couple of goals. First, the time needed to manage the supply chain based on demand should be minimized. Secondly, to minimize the number of goods in transit or storage in the system at any given time. The model can be extended to include numerous real-world goals by clearly including time and allowing goods to be stored at intermediate nodes between one period and the next. This paper introduces a special production order form according to transactional services.

## **Methodological approach and discussion**

The work of arbitrators is very important and the efficiency of transactions has an impact on this. With the efficient operation of the transaction system, the distribution of the work of arbitrators is improved. This could include the cost of products and services and the level of financial literacy. E-commerce today has become more used in the international financial system. Today there are many modifications of the concept of "e-commerce". It is now just as important to include in the e-commerce system and logistics service providers, and payment intermediaries and others. It is these transaction concepts that are formalized by many arbitrators. (Figure 1).



**Figure 1. The structure of transaction systems**

Source: <https://www.emerald.com/insight/content/doi/10.1108/IJCS-08-2017-0015/full/html>

By improving the efficiency of transactions, the cost of transactional services can be reduced. This will allow all intermediaries to better allocate their investments. This paper will demonstrate the issue of creating and trading supply of intermediaries. For the implementation of transactions, four types of transactional services are required: an enterprise of transactional industries, information work, logistics services and payment services. The size of the demand for the above services in the transaction is similar, i.e. 1:1:1:1 ratio.

One of the participants chooses from 1 to 4 types of transactional services. If he wants to start selling goods that belong to the middleman who manages the distribution, then there must be someone who is obliged to provide services in accordance with the agreement. Moreover, the number of goods that the intermediary trades depends only on the number of services that he provides to the given company.

The author constructed the following model (Li Wang, Yueting Chai and Yi Liu (2017)). Let  $w$ ,  $x$ ,  $y$  and  $z$  be the production of transaction management services, information services, logistics services, and payment services, respectively. The production functions of transactional services are as follows:

$$w = l_w^a x = l_w^b y = l_w^c z = l_w^d \quad (1)$$

where  $a$ ,  $b$ ,  $c$  and  $d$  are the degree of specialization economy of 4 types of services. We believe that there are increasing returns to scale in the production of transaction services. Thus, we have:

$$a > 1 \quad b > 1 \quad c > 1 \quad d > 1 \quad (2)$$

Let  $l_i \in [0, 1]$  ( $i = w, x, y, z$ ) be the resource used to produce the service  $i$ . We think the total resource of a middleman is constant, and we let it be 10, so we have:

$$l_w + l_x + l_y + l_z \leq 10 \quad (3)$$

Let  $N$  be the quantity of commodity sold by a middleman, then:

$$N = \frac{w}{s} = wk \quad (4)$$

where  $s$  is essential services quantity and  $k$  is transaction efficiency.

If  $i > w$  ( $i = x, y, z$ ), the middleman has  $i - w$  units of transaction services to sell. If  $i < w$  ( $i = x, y, z$ ), the middleman has to buy  $w - i$  units of transaction services. The profit function is:

$$P = p_g N + p_x(x - w) + p_y(y - w) + p_z(z - w) \quad (5)$$

where  $p_c$ ,  $p_x$ ,  $p_y$  and  $p_z$  are the prices of commodity, information services, logistics services and payment services, respectively.

The optimal specialized production mode decision problems of a middleman are as follows:

$$\max P = p_g N + p_x(x - w) + p_y(y - w) + p_z(z - w) \quad (6)$$

$$s. t. \begin{cases} x = l_x^a, y = l_y^b \\ z = l_z^c, w = l_w^d \\ l_x + l_y + l_z + l_w \leq 10 \\ N = wk \\ 0 \leq k \leq 1 \end{cases} \quad (7)$$

To simplify the model, we think that the degree of specialization economy of information service, payment service and logistics service economy are the same, i.e.:

$$a = b = c = d \quad (8)$$

Thus, the decision problem could be rewritten as follows:

$$\max P = p_g N + p_x(x - w) + p_y(y - w) + p_z(z - w) \quad (9)$$

$$s. t. \begin{cases} x = l_x^a, y = l_y^a \\ z = l_z^a, w = l_w^a \\ l_x + l_y + l_z + l_w \leq 10 \\ N = wk \\ 0 \leq k \leq 1 \end{cases} \quad (10)$$

Now consider a system in which transactions are conducted with 100 intermediaries. Everyone must decide how many resources are required to be implemented in each of the 4 types of services. Prices are determined only by the ratio of supply and demand. The price drops when the supply rises. Conversely, when the supply falls, then the price falls. Then the price function looks like this:

$$P_g = g_g - hN_t \quad (11)$$

The price functions of transaction services are as follows:

$$P_i = g_i - h_i(i_{ts} - i_{td}), i = x, y, z \quad (12)$$

where  $N_t$  is the total quantity of commodities sold in the system,  $i_{ts}$  ( $i = x, y, z$ ) is the total supply of service  $i$  in the system and  $i_{td}$  ( $i = x, y, z$ ) is the total demand of service  $i$  in the system.

To simplify the model itself, we can assume that the price functions for these 4 types of services are the same. Then there will be the same gradients of price functions, that is:

$$g_x = g_y = g_z \quad (13)$$

$$h_x = h_y = h_z = h_w \quad (14)$$

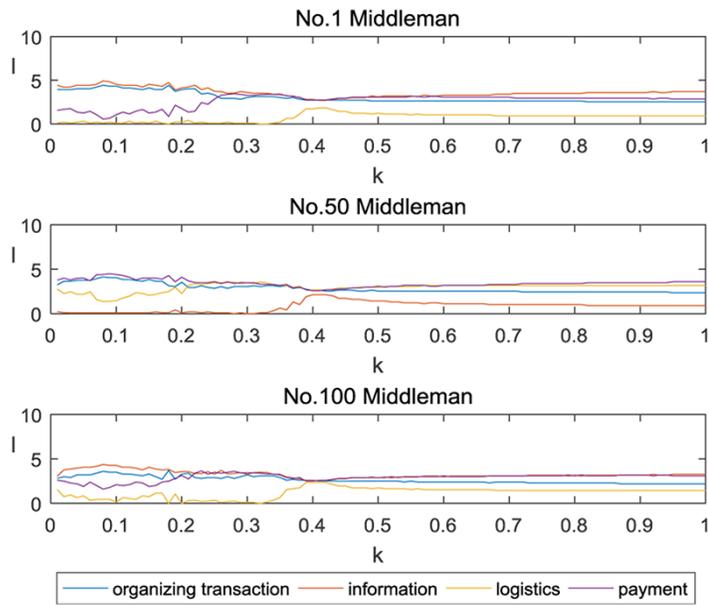
The rules of simulation: If the total supply  $i_{ts}$  ( $i = x, y, z$ ) of service  $i$  is less than the total demand  $i_{td}$  ( $i = x, y, z$ ), then every demander can get  $i_{ts}i_{md}/i_{td}$ , where  $i_{md}$  ( $i = x, y, z$ ) is the demand of the middleman. If the total supply  $i_{ts}$  ( $i = x, y, z$ ) of service  $i$  is more than the total demand  $i_{td}$  ( $i = x, y, z$ ), then every supplier can sell  $i_{td}i_{ms}/i_{ts}$ , where  $i_{ms}$  ( $i = x, y, z$ ) is the supply of the middleman.

## Results

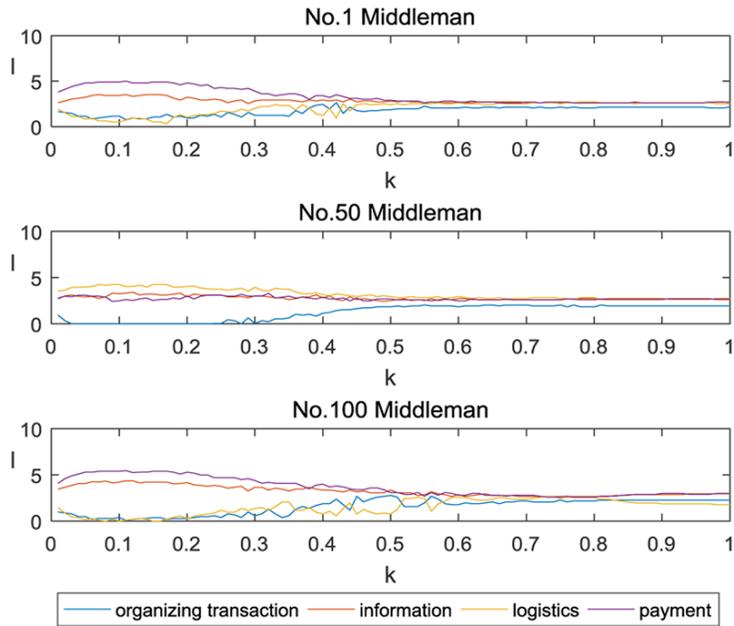
If we talk about equilibrium prices, then they refer to the ratio of the equilibrium price of goods and transactional services ( $e/g$ ). We change only the price of goods, while fixing the equilibrium price of services in order to change the relative equilibrium price:

- Economics specialization degree  $a = 3$ .
- Price gradient  $h = 2$ .
- Equilibrium price of transactional services  $g = 500$ .

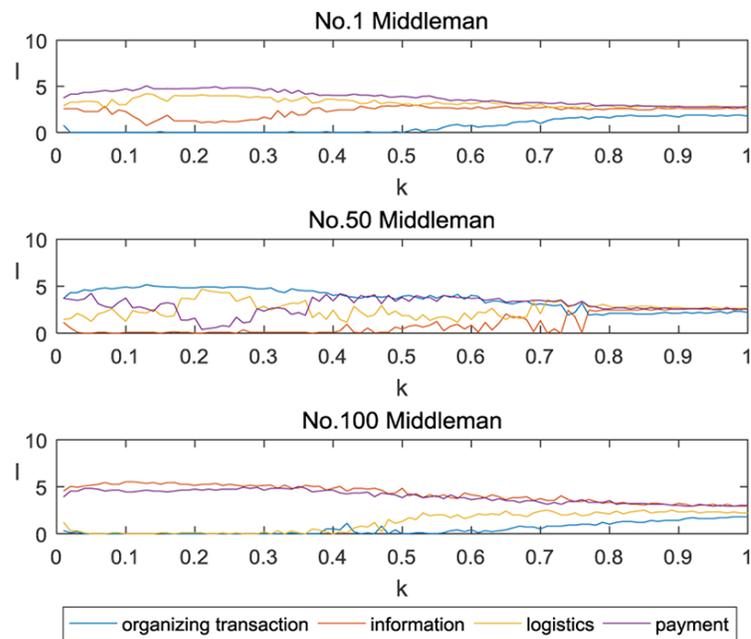
The effect of different relative equilibrium prices on the distribution of intermediaries' resources is shown in Figures 2-4.



**Figure 2. Commodity equilibrium price  $e = 1,000$ .**  
*Source: modelling results*



**Figure 3. Commodity equilibrium price  $e = 2,000$ .**  
*Source: modelling results*



**Figure 4. Commodity equilibrium price  $e = 3,000$ .**

*Source: modelling results*

From the above results, we can see that with the increase in the efficiency of transactions, the level of division of labor first began to increase, then followed a decline, and then again increased. As the efficiency of transactions increases, the cost of purchasing transactional services decreases, which increases the investment of intermediaries' resources. The higher the price relative to equilibrium leads to an increase in profits from the sale of goods than from the sale of transactional services.

## Conclusions

This paper has demonstrated the form of division of labor when using transactional services. If the market has a general demand for transactional services, then it is possible to create patterns of behavior of intermediaries and their solutions. In addition, this will allow us to investigate their impact on the efficiency of transactions.

A decision making model was developed to serve intermediary transactions. You should also consider the impact of the overall supply of services and market demand on prices. The results show that as the efficiency of transactions increases, the division of labor first increases, then decreases, and finally may rise again. Improving transaction efficiency lowers the cost of purchasing transactional services.

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## **DEVELOPMENT OF CLOUD TECHNOLOGIES AND SPECIFICS OF THEIR USE IN E-COMMERCE**

JEL Classification: L81, M2, O33

### **Abstract**

This thesis describes possible application of cloud computing technology in e-commerce. The aim of the thesis is to determine in what ways do cloud computing technologies affect e-commerce businesses as well as what are pros and cons of implementation of such systems. Analyzed what is cloud computing in e-commerce, what types of cloud computing are used and primary reasons for its use today. Conclusions are made about the encouraging future of cloud computing in different sectors of economy, specifically its importance and necessity in e-commerce today for substantial lowering of business expenses as well as for potential increase in operational efficacy and positive influence on national economy.

**Key words:** Cloud Computing; E-Commerce; Enterprise cloud technologies; SMEs; Internet; Business Technology.

### **Introduction**

One of the fastest growing sectors of the economy today is e-business. It spreads effectively and rapidly. Traditional business tools need to be improved, their use is becoming more complex and time consuming. New rising technologies stimulate financing and business activity of e-commerce. As commerce in general moves online, new solutions and strategies for merging and developing come to the forefront. One of such ways of improvement is the utilization of cloud technologies and remotely managed E-commerce is a prime example.

Cloud computing and technology today is one of the leading trends in global information technology and businesses. They are discussed by literally all companies, both big and

small, everyone in one way or another uses them to create, manage and sell products and services and there are good reasons for it.

### **Relevance**

Cloud computing is a model for providing ubiquitous and convenient network access on demand to a shared pool of configurable computing resources (for example, data networks, servers, storage devices, applications and services - both together and separately), which can be quickly provided and canceled with minimal operating costs and other inconveniences. Accordingly, cloud services provide services of this kind to both small, medium and large businesses and individuals.

So naturally it's going to be of utmost interest to SMEs. For the first time there is a solution that significantly reduces the cost of IT services. Not only that but it can also give a new look at the whole process of automating companies and creating software, help abandon the high investment in infrastructure and its further support, as well as to solve the problems of entering new markets, expanding the customer base, the number of customers, etc. Hence why researching cloud computing in ecommerce and possible ways of its practical application is essential.

### **Purpose**

The purpose of this work is to analyze and find out the specifics of the application of cloud computing technologies in the e-commerce.

The main goal of this work is to study the prospects for the use of cloud computing technologies, as well as structuring their impact in economy in general in addition to e-commerce.

### **Main material**

Cloud computing is a highly effective tool for increasing profits and expanding sales channels for Independent Software Vendors, which expand the capabilities of existing products to resell to the end users. The cloud approach allows you to organize a dynamic provision of services, where users can make payments on the spot and adjust the amount of their resources depending on the real needs without long-term obligations. The cloud is organized in a pyramidal structure, where the top layer is quite easy to use, while in order to work with the bottom ones it requires more effort, sometimes even a whole team.

First is SaaS (Software-as-a-Service). It is a layer of custom applications like Twitter or Facebook etc. This is the layer that end users of the product most often interact with, and it provides the functionality that these users need: social networking, collaborating

on documents, ordering a car or a room for the night. Configuring cloud services in this layer is only possible within the limits of their functionality, and the user has practically no control over the resources used by the application. But the average user gets what he came for – functionality.

Next is PaaS (Platform-as-a-Service). This layer of cloud platforms allows developers to create and host applications used by ordinary users. In this layer, customers of cloud platforms, for example Azure, use the functionality available to them in the service provider's control panel. This layer requires a greater understanding of processes occurring in it, but the vast majority of control over cloud resources is still simplified for the user experience.

Last layer is IaaS (Infrastructure-as-a-Service) or a cloud infrastructure layer. Developers and engineers work at this level. They use a specific set of tools to control vital functions of cloud server like load balancing, creating backups, storage of different to name a few.

We can hear a lot of the times terms e-commerce and cloud computing together and that makes sense. The main idea behind the convenience of cloud technology for online businesses is that it allows small and medium enterprises to utilize functionality of high-cost IT infrastructure for their development on what is essentially a rental basis which helps them to virtually eliminate capital expenditures. Large enterprises can also largely benefit from use of cloud computing. One such way is to use it in a development stage for testing which can reduce costs before investing into a new project. In addition, such companies often require local low-latency network for better performance which can be established in cloud. It goes to show that businesses of all shapes and sizes can benefit from cloud computing.

**Table 1**

**Positive and negative traits of cloud computing technology**

<b>Positive traits</b>	<b>Negative traits</b>
Cheaper equipment for users	Bad function with poor connection
Increased productivity of the equipment	Constant need for internet connection
Decreased expenses and increased efficacy of IT infrastructure	Some software can work slower than on local network
Less expenses for software	Not all programs can be used remotely
Endless database storage	Safety of data can be questioned

Source: [1,2]

While it has its significant advantages, SMEs should weigh all pros and cons of using cloud system for their business. When using these systems, you're totally dependent from provider. In case of an outage in cloud computing service, which can happen to anyone, your business is also affected, and you can't really do anything about it. In addition, some speculate on relative security of personal information that's located in a cloud. Main pros and cons of cloud computing are listed in a table 1.

Considering positive effects of cloud computing on e-commerce and specifically SMEs, economy as a whole can seriously benefit from implementation of cloud computing. As it enables fast business development with what seems to be negligible expenditures, it was never as easy to open and lead a business as it is now, which can ultimately contribute to tax payments and as a consequence beneficially influence national economy. In addition, it can ensure economic growth simply by creating new vacancies and job opportunities inside a country and these are only basic ways in which cloud computing can contribute to the flourishing of national economy.

### **Conclusion**

So, all in all, it can be said that cloud computing in e-commerce is a trend of current time. It's extremely useful especially for SMEs as it is much more budget friendly and gives what seems to be the same functions as local network services on a rental basis. On top of that, it gives significant advantage in storage and management capabilities which is crucial for e-commerce development. Both of these combined create very favorable conditions for further growth and development of SMEs, which can positively influence the economy as a whole. Although, it has some caveats to it, just like any other new technology, the more it's going to be utilized, the more developed the area is going to get over time and as a result more solutions to the current arising problems associated with cloud computing, not only in e-commerce but also in other lanes of business for example marketing, will be proposed. Cloud computing is definitely important for businesses of all sorts, and will bring change to the economy in the nearing future as more e-commerce is going to emerge on the base of cloud computing, being more readily available for everyone to harness.

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## **MANAGING A CROWD FUNDING WEB-SITE**

Crowdfunding is a funding concept by raising small amounts of money from many people using the Internet for a project or Documentation. Crowdfunding is a form of crowd-sourcing and alternative income to success our dreams.

The practice of funding a project by raising money from many people (the crowd) who each contribute a relatively small amount, typically via the Internet. Most crowdfunding campaigns are run on websites called platforms. Most platforms charge a fee, based on the sum raised by the campaign. Some platforms like Kickstarter and Indiegogo have become so well known that their names are often used to describe the act of running a crowdfunding campaign, so “I am going to do a Kickstarter” means “I am going to run a crowdfunding campaign”.

The basic principle is that set a target sum to raise and a timespan within which to do it. Then place the project on a publicly available platform and encourage people to visit the page through an active and planned outreach programmed using tools like Social Media, Newspapers, Magazines and E-mails.

The intention is to appeal to as many of these visitors as possible so that they contribute funds to the project and share this news with their own network. We must collect the financial pledges made with the intention of reaching the target set.

Crowdfunding reaches widely by using technology and reduces the size of funding each individual contributor must come up with. This means that more people can take part. Making it easy for a wider group of people to support a business or project introduces a wider range of motivations for people to back a campaign. This means that, there is a range of reasons why people might support you, and not simply for a financial return.

## SECTION 3:

### PROJECT MANAGEMENT, KNOWLEDGE TRANSFER AND EXCHANGE STRATEGIES DURING PANDEMIC

*Ayub Mohammad*  
*Ph.D student,*  
*International Institute of Paris,*  
*Pakistan*  
[ayub\\_fr@yahoo.com](mailto:ayub_fr@yahoo.com)

## ECO-INNOVATIONS: EUROPEAN EXPERIENCE

Eco-innovation is any innovation resulting in significant progress towards the goal of sustainable development, by reducing the impacts of our production modes on the environment, enhancing nature's resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources.

By supporting new processes, technologies and services that make business greener, eco-innovation helps Europe optimise its growth potential while addressing our common challenges such as climate change, resource scarcity and dwindling biodiversity.

Eco-innovation is also an opportunity for businesses. Eco-innovation leads to reduced costs, helps capture new growth opportunities and strengthens the company image in front of its customers. This is why the EU needs to accelerate the transformation of good ideas into business and industrial development by removing economic and regulatory barriers and promoting investments, demand and awareness.

Eco-innovation refers to all forms of innovation – technological and non-technological – that create business opportunities and benefit the environment by preventing or reducing their impact, or by optimising the use of resources. Eco-innovation is closely linked to the way we use our natural resources, to how we produce and consume and also to the concepts of eco-efficiency and eco-industries. It encourages a shift among manufacturing firms from “end-of-pipe” solutions to “closed-loop” approaches that minimise material and energy flows by changing products and production methods – bringing a competitive advantage across many businesses and sectors.

The European Commission adopted in 2010 the Europe 2020 strategy for a smart, sustainable and inclusive growth. This switch to sustainable growth will be triggered by greater innovation and by managing our resources more efficiently. Seven flagship initiatives will help deliver the objectives of the strategy, including the Resource-Efficient Europe and the Innovation Union flagship initiatives. The Resource-Efficient Europe initiative recognises the role that eco-innovation can play and details the support foreseen under numerous EU policy instruments. The associated Roadmap towards a Resource-Efficient Europe outlines how we can achieve a resource-efficient growth and suggests tools and indicators to help guide action in Europe and internationally. The Innovation Union sets out a bold, integrated and strategic approach, exploiting and leveraging our strengths in new and productive ways. The initiative called for the adoption of an 'Eco-innovation Action Plan' focusing on the specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation.

Environmental challenges and resource constraints have led to a growing demand for environmental technologies and facilitated the emergence of eco-industries. Europe is in a strong position to lead the way in using the power of innovation to meet today's challenges. This is also a great opportunity to step up its investment in this fast-growing sector.

## INSIDER THREAT MANAGEMENT DURING COVID-19 PANDEMIC

**JEL Classification: M12, M54**

**ORCID ID: 0000-0002-4828-9144**

### **Abstract**

It became apparent that the process of the digitalization, COVID-19 pandemic, and the transition to a remote format for most employees caused a new wave of updated research in the field of personnel and information security, mainly regarding insider threat management to minimize the risk of losing important information due to accidental or intentional actions of employees. We propose to utilize the approach featuring the synergistic system of indicators that can be used individually or in combination, depending on the individual needs of the enterprise. The result of the study is the development of an expert system using the corporate network based on the emotional state of employees and the manifestation of behavior atypical for the employee of the company, which allows to identify employees whose behavior shows an increased risk of damage or loss of confidential information.

**Keywords:** personnel security, insider threat management, expert system, Data science, personnel, information leaks.

### **Introduction**

Nowadays, it is important to realize that technologies and tools to prevent risks and threats of leakage of confidential information must be systematic and go beyond formal control rules. A person has always been and remains the carrier and source of strategically important information, no matter how perfect the forms of accumulation and channels of information transmission are.

The aim of the study is to develop a system of models of insider threat management of enterprises as a part of its economic security based on the advanced tools of Data science.

The use of advanced insider threats management practices will reduce the risk of losses caused by the breaches of the economic security system due to leaks of confidential information, and will correct the behavior of employees before the negative factor becomes critical. It is established that in existing conditions an important area of the insider threat management is the development of an effective control system for the remote operations of the enterprise.

### **Research Results**

The increased risk of insider threats is due to the increasing number of points of access to confidential information and the inability to fully control the devices from which the work is performed, because they are not connected to the company's internal or local network. At the same time, experts recommend providing remote employees with company devices for work, raising awareness of the personnel about possible threats, it is also important to create an algorithm in case of cyber-attacks and to develop protocols for responding to insider attacks. To protect against the above mentioned threats, the company can create a secure remote network, which involves the development of security infrastructure, such as individual security protocols, meaning VPNs or remote workstations. It became very popular for the employee to connect through their equipment to a remote server, which can be located in any country, and to work only at the desktop, with the data that is on this server, he cannot copy data to his device.

To create its own customized concept, a company must first determine the level of its vulnerability to internal threats. In case of the company having low vulnerability to internal threats, standard frameworks can be used, such as training staff in basic safe online behavior and using standard software. If the company has a medium level of vulnerability, it is advisable to use international standards of personnel security, as well as to monitor the activities of the employees in the network. To further increase the level of insider threats security, various anomalies should be identified when analyzing the behavior of users in the corporate network (including the use of computers, the Internet, e-mail). Thus, the main idea of this approach is to identify potential employees who behave in a manner atypical for the company using the corporate network.

It was found that at the present stage of development of the models and approaches to the insider threats management there are two main approaches: psychosocial models and monitoring of computer activity of the employee. The psychosocial approach can be considered prognostic, because with its help the company tries to determine whether the employee poses a potential threat to economic and personnel security to predict his future actions. Instead, activity monitoring involves the use of technical strategies that,

based on tracking the actions of an employee in the network, allow to establish his involvement in an insider attack.

One of the commonly-used models under this approach is the most well-known model OCEAN. It makes it possible to establish a link between threats and counterproductive behavior of workers at the workplace. This model describes the following 5 personal factors such as emotional stability, extraversion, openness to experience, cooperation, honesty. These factors, if properly assessed in a timely manner, can alert an organization to the development of personnel crime among employees.

### **Discussion and Conclusions**

The approach based on identifying employees who show an increased risk of insider threat has two advantages: first, it prevents unnecessary costs for the employer due to the loss of confidential information and helps the employee before the negative factor becomes critical. Thus, an expert system based on a psychosocial model will benefit both employees and employers if this model is adopted by the company as one of the tools to ensure personnel security and is included as an instrument for staff evaluation.

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## THE LACK OF HUMAN INTELLIGENCE AND THE MISUNDERSTANDING OF MODERN MEDICINE

With the continuous improvement of modern medical technology, the means become more and more complex, but many traditional diseases have not been cured. Because in addition to micro factors such as cells and molecules, human diseases are also affected by macro systems such as nature and society. Chinese traditional medicine regards human as the synthesis of nature, biology, society and spiritual system. It treats disease and health problems from the harmonious relationship between human and nature, society and itself, which is simple and effective.

To establish a harmonious relationship with oneself, we need to form a reasonable living habit. For example, in eating habits, traditional Chinese medicine advocates eating to keep seven points full, and hunger therapy is often used in treatment. Modern research shows that human genes contain hunger factors, which can stimulate human life instinct. The state of fullness and over nutrition of modern people will cause the body to make wrong reactions, such as: endocrine disorders, hyperlipidemia, diabetes and other symptoms.

**The doctor-patient relationship of traditional Chinese medicine plays an active role in the treatment of diseases.** In the process of diagnosis, TCM will listen to the patient's narration, understand the medical history and introduce the treatment methods to the patients. The effective communication between doctors and patients improves patients' mood, and some patients have improved in the diagnosis process. As TCM has a comprehensive understanding of the patient, it will prescribe precise prescriptions for the patient. However, modern medicine relies too much on instruments and man-machine conversation replaces doctor-patient communication, which is a deficiency in humanistic care and psychological comfort.

**Human health is inseparable from social culture.** Chinese medicine has great vitality because its health care awareness is integrated into the whole traditional culture and reflected in social behavior. Such as: tea culture, tea has health care function, is the Chinese people's daily drink. Traditional Chinese medicine believes that Enron's

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mentality is the best medicine, and it is the characteristics of Chinese traditional culture to pay attention to the spirit of peace and introversion.

**Human health is closely related to the social environment.** According to traditional Chinese medicine, an excellent king has the same wisdom and responsibility as an excellent doctor: they are all for solving people's sufferings. It takes a wise doctor to treat individual diseases, and a wise king to treat diseases of the whole society. At present, in the face of thousands of smokers, alcoholics, drug users and AIDS patients, doctors alone can not solve the problem of human diseases.

For economic purposes, human beings are still producing harmful food, using unhealthy methods to treat diseases, and engaging in medical research against social ethics. In some countries, medical treatment and drug production have become lucrative industries. Every year, thousands of people lose their health and lives due to wars, environmental pollution and various industrial accidents. Without eliminating the social causes of diseases, medicine can not completely cure human diseases.

How to treat human diseases is not only a scientific problem, but also a problem of wisdom. It is also a philosophical problem of how human beings view themselves. Western medicine relies on high technology, while traditional Chinese medicine relies on wisdom. Traditional Chinese medicine discusses disease and health in natural system and interpersonal relationship, and believes that disease is not only a biological phenomenon, but also a social and spiritual phenomenon. In the early stage of the disease, TCM intervenes in time to prevent the disease from developing to the extent that surgery is needed. It provides a valuable solution for human medicine.

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## **NATIONAL INNOVATION SYSTEM IN AZERBAIJAN: RISKS AND CHALLENGES WITHIN COVID-19**

After the country's independence, the hydrocarbon sector saw a new revival, thanks to new exploration leading to the discovery of significant new oil and gas reserves. The resulting upsurge in the sector produced an extraordinary economic boom during the past decade, which has been unmatched in recent history on the global scene.

The new Innovation Policy Outlook (IPO) of the United Nations Economic Commission for Europe (UNECE) reviews and compares innovation performance and governance across the EESC sub-region. Complementing quantitative composite indices, the IPO compares innovation ecosystems in six countries with similar economic, structural, legacy and institutional features, challenges, and opportunities. It is an essential part of UNECE support for trade and economic cooperation among its member States.

The overreliance on fuel exports has left the economy undiversified and vulnerable to global commodity price fluctuations, such as the COVID-19 induced sharp fall of oil prices in 2020. This risk is compounded by low productivity in non-oil sectors and growing environmental concerns, undermining the long-term prospects of Azerbaijan for sustainable growth.

Trying out new ideas, or innovation, systematically will be vital to forge a solid, diversified and well-integrated foundation for long-term sustainable development in Azerbaijan. As the IPO shows, the country shows strong political commitment and investment into innovation infrastructure, such as high-technology parks. For example, Azerbaijan has recently launched high-level events, such as the annual InnoWeek, to foster synergies in innovation policy and unite stakeholders from the Government, the business sector, academia and international organizations. It is a global pioneer in hydrocarbons, and its exports from the massive reserves in the Caspian Sea remain the main driver of the economy, contributing to a well-endowed sovereign wealth fund. To sustain growth, Azerbaijan needs to reinvest this revenue into innovation and diversify its economy by supporting and catalyzing entrepreneurship and research and

development across a broad range of potentially successful economic activities in the non-oil sector.

Recognizing this need for innovation, Azerbaijan has taken several important steps to reform innovation governance over the past years. These include:

The active development of a national innovation system. The Government shows a high level of commitment to innovation by preparing the national innovation strategy and establishing government bodies in charge of innovation policy, such as the Innovation Agency. Azerbaijan has made progress in developing digital government platforms and public sector innovation.

Existing public-private partnerships work towards aligning support measures with current market needs and building synergies for creating a knowledge-based economy. The expansion of public provisions to innovative start-ups includes information and brokerage services, as well as access to international markets. Digitalization is a priority for policymakers, including initiatives for improving e-government, accessing and using data, and obtaining Government-to-business (G2B) services. The Azerbaijan National Academy of Sciences (ANAS) established a widespread network of scientific laboratories to support research activities. Recent efforts to improve the quality of Sciences, Technology, Engineering and Mathematics (STEM) education complement existing support measures to improve education.

A legal framework with requirements for preparing policy is in place. The Law on Public Participation provides a legal basis for public councils, hearings and consultations, written consultations on the internet, and public consultations on draft legislation, organized by the Parliament. Policymakers have started to apply foresight exercises in preparing policies. The examined Grant Scheme was coherent with the objectives of the National Strategy for the Development of the Information Society and supported by a project manual and a structured selection process.

Enabling and promoting innovation also involves tackling a range of systemic constraints in the economy. Despite the construction of high-technology parks, commercialization efforts at higher-education institutions (HEIs) remain ineffective, impeding productivity in the labour market. To fully exploit its innovation potential, Azerbaijan needs to diversify its economy by increasing support for Small and Medium-sized Enterprises in the non-oil sector and foster innovative activities by supporting investment in R&D activities in the private sector and by improving SMEs access to finance.

The IPO points to three important areas to address:

Innovation support is not systematically implemented across sectors and coordination efforts between policy initiatives are underdeveloped. Government support concentrates on high-tech sectors and systematic efforts to support innovation in sectors with lower uptake of advanced technologies are lacking. Coordination of science and innovation policy initiatives is limited as public authorities with responsibilities for science and innovation develop their measures in silos. Some mandates for implementing science and innovation policy initiatives are missing or not enforced sufficiently.

The types of support for innovative start-ups, such as early-stage investment, as well as support for industry-science collaboration need to be strengthened. Low access to early-stage finance obstructs the implementation of innovative projects. Policy measures related to knowledge absorption do not sufficiently address the promotion of non-technological innovation in the public and private sectors. Mechanisms for stimulating mobility between academia and industry are limited and mainly cover separate projects within universities.

The quality of the analysis supporting new innovation policies and laws leaves room for further improvement. Monitoring and evaluation have only a tenuous link with future policy design and evidence-based policymaking is not yet fully established. Innovation foresight is not yet integrated systematically and tends to be done ad hoc, tied to specific policy design efforts.

In this spirit, recommendations of the IPO for Azerbaijan include:

Strengthen innovation governance across sectors and facilitate synergies between policies. Ensure that the Government provides sufficient support for R&D and innovation activities in the service sector and in industries with lower technological intensity, in addition to high-tech industries. Establish coordination working groups among government authorities with responsibilities for science and innovation.

Increase the support for start-up development and introduce policy instruments that facilitate industry-science linkages. Develop a venture finance mechanism, in cooperation with international donors, to overcome the early-stage financing gap and facilitate the growth of innovative projects and technological creativity. Promote organizational and managerial practices by extending measures for stimulating non-technological innovation. Support science-industry collaboration and stimulate commercialization of innovative ideas by introducing early-stage finance for non-

competitive financial support, such as innovation voucher schemes. Consider reinstating a cooperative R&D grant programme to stimulate cooperation between innovative enterprises and public R&D institutions.

Establish a more systemic linkage of monitoring and evaluation to policy design, including in government bodies responsible for innovation policy. Integrate innovation foresight practices into the policy processes of relevant line ministries to capture future trends in and perspectives on research activities for incorporation in the long-term strategic direction of innovation development. Ensure that drafters use evidence-based policymaking systematically. Implement regulatory impact assessments systematically to enhance the quality of the flow and stock of laws and policies.

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## **DIGITALIZATION AND KNOWLEDGE TRANSFER IN INDIAN PUBLIC SECTOR**

The Digital Age has only just begun to change how we work and play. The 21st century ushered in a new era of technology that, as the digital transformation redefines business, has been reshaping everyday life, facilitating updated processes, and even giving rise to entirely new business sectors

As digital technologies continue to permeate our daily lives, the challenges and opportunities presented by such technologies are forcing local and national bodies to adapt to this digital transformation trend. Today, locals are not only tasked with doing more with less money, they must also meet increasing digital demands from technology savvy constituents. Indeed, the era of digital transformation offers public sector organizations the unique opportunity to implement new technologies to move services online, which will help to deliver greater operating efficiencies while meeting the demands placed upon them.

However, there are many challenges that public sector organizations face when embarking on digital transformation. These include:

**Knowledge Transfer Initiatives (KTIs):** A majority of the public-sector enterprises are simply oblivious to the need and advantages of enabling their businesses further by adapting to digitalization. It's all about the transfer of tangible and intellectual property, expertise, learning and skills between academia and the non-academic community. KTIs also need to be well recognized by government and funders, since they provide a significant driving force for enhancing economic growth and societal wellbeing. For academics, KTIs can be a way of gaining new perspectives on possible directions and approaches for research. This two-way exchange element of KTIs is at the heart of successful and sustainable collaboration.

**Finance:** Finding the necessary funding to start a new project is always a challenge. Currently, public sector organizations face a dilemma: They must do more with less while trying to meet new customer demands. That said, when budget allocations are invested in new, more efficient digital technologies, long-term costs are reduced for manual processes. While public sector budgets are challenged by numerous complications, the opportunity to innovate is game changing if they can get the funding to work on new digital initiatives.

**Time Limits:** Public sector budgets are tied with political cycles, which means that new projects must show results quickly for citizens. Gathering political support to invest in digital technologies is a way for public sector organizations to achieve lasting impact.

**Technical System Issues:** Many public-sector organizations operate a range of outdated systems that need replacement. Digital upgradation should be a priority if a public sector organization is preparing to reinvent their business. Organizations need to take a systematic approach that starts with internal approval and ends with a long-term outlook. This can be done in incremental steps within a larger digital transformation initiative to gain support and buy-in from other stakeholders around the organization. In addition, the support and active involvement of department heads are needed to make the goals of the digital initiative and effectively migrate away from old systems and processes.

**Coordination and Cooperation:** Digital transformation requires a top-down approach. It starts with the top management and must be embraced by all the internal stakeholders. If public sector organizations can obtain the required internal support, as well as gain the much needed funding and showcase a positive ROI, then they will be able to readily make improvements that will yield short-term operating efficiencies and lay the groundwork for long-term success.

Although there are inherent challenges in digital transformation, public sector organizations can begin to make lasting changes; and this doesn't have to be an extensive approach. This can be done in incremental steps within a larger digital transformation initiative to gain support and buy-in from other stakeholders around the organization.

The Government of India understands that millions of Indians are looking to it to deliver on its promises and meet the expectations for India to take a position as one of the fastest-growing global economies. With the spotlight on India, there is a national sense

of urgency for action, and strategic investments in technology will be critical to creating a new path for the future.

The government can truly deliver on the promises of Digital India through the following:

- **Supporting the startup ecosystem:** The startup ecosystem will be a significant growth driver for India. With the government's support, the country is creating an environment conducive to innovation, which will also create jobs. With over 3,100 startups, India is currently the fourth-largest startup community in the world, and these numbers will only increase. By 2020, India will have more than 10,000 startups, which, in turn, will create 250,000 to 300,000 jobs. With continued support and investment, this flourishing ecosystem has the potential to bring about many more opportunities for India to compete on the global stage.
- **Transforming industries:** Companies across every industry and geography are realising the value that comes with going digital, and in India, there is tremendous value that has yet to be unlocked. By using the Internet to connect, businesses can increase efficiency, productivity and quality, in turn boosting GDP growth. Across industries in India's private sector, digitisation has the potential to create \$394.4 billion in value over the next decade. Enabling manufacturers to do business better and faster will drive new opportunities for India and help manufacturers to increase competitiveness and achieve their growth goals.
- **Creating smart cities:** The UN expects India's urban population to grow to 404 million people by 2050 and the government must prepare for this influx. Technology will be essential to providing the urban services that citizens need and improving quality of life, while also creating an environment that is more favourable for business investments. The government in India has announced a budget for the development of 100 smart cities, which, if invested in the right ways, could have a tremendous impact.

**Oburoh Agbu**  
**Ph.D student,**  
**Marketing Manager,**  
**International Business Institute,**  
**France/Nigeria**  
[o.agbu12@gmail.com](mailto:o.agbu12@gmail.com)

## **SOCIAL CAPITAL AND PUBLIC HEALTH: RESPONDING TO THE COVID-19 PANDEMIC**

Social capital is an economic idea that refers to the connections between individuals and entities that can be economically valuable. Social networks that include people who trust and assist each other can be a powerful asset. These relationships between individuals and companies can lead to a state in which each thinks of the other when something needs to be done.

Along with economic capital, social capital is a valuable mechanism in economic growth. As technological advancements continue to make the world smaller and the global population more interconnected, companies rely on social capital more than ever to drive business. While in decades past, companies could rely on persuasive marketing to get customers in the door, in the 21st century, those customers are plugging into social networks and relying on their peers to direct them to a provider when a business need arises.

As countries continue to respond to the COVID-19 pandemic, the importance of ensuring that fair and equal access to healthcare for all is more urgent than ever. Policies that promote social capital building along all levels of society may offer an important avenue for improved healthcare delivery and health systems strengthening in the COVID-19 response.

The global response to COVID-19 has required decisiveness, resilience, and resolve from governments around the world. However, economic, legal, technological, geographic, and cultural barriers can limit the ability of a government to effectively respond to critical public health needs. The intricate network of stakeholders that operate within and interconnect with the public health space is an essential component of a health system's response. In this context, considerations of social capital emerge as a powerful frame of reference for understanding how health interventions may be best

implemented to effectively ensure an inclusive extension of health services for all members of society. It is patently clear that if a population group is excluded from accessing the health system and its attendant services and products, the efficacy of any pandemic response or recovery program may be severely undermined.

As countries adopt urgent public health measures in response to the many challenges posed by COVID-19, lessons learned from public health intervention studies that link enhanced social capital with improved mental health outcomes, greater community buy-in, and the extension of health services to vulnerable populations suggest a critical role for social capital in ensuring a rapid adjustment to today's new public health reality.

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**Kuldeep Singh Bullar**  
**Bachelor business administration student,**  
**Graduate School of Management Lille and Paris,**  
**Ecole Supérieure de Commerce de Lille,**  
**France/India**  
[k.bhullar1989@gmail.com](mailto:k.bhullar1989@gmail.com)

## **HUMAN ASPECT AND INDIVIDUAL INFLUENCE IN BUYING DECISIONS**

It is difficult to change from decentralized to centralized level mainly at human level. Generally speaking, there is low communication and integration between different buyers from different sites of a group which affects centralized purchasing.

*“Nearly 80 percent of the senior executives surveyed in a 2005 study said that effective coordination across product, functional, and geographic lines was crucial for growth. Yet only 25 percent of the respondents described their organizations as “effective” at sharing knowledge across boundaries”.*

[http://www.mckinseyquarterly.com/Mapping\\_the\\_value\\_of\\_employee\\_collaboration\\_1827#foot3#foot3](http://www.mckinseyquarterly.com/Mapping_the_value_of_employee_collaboration_1827#foot3#foot3)

In centralized purchasing, buyers from different sites, branches and divisions have less power to take decisions. They have to provide all information at group level and then wait for the final decision. It can demotivate them and lead them not to be interested in sharing information with their colleagues from branches and at group.

There is not only motivation but individuals demographic and psychological traits also affect the group buying decisions.

Group purchasing decisions are taken by centers composed of different individuals from different functional areas within an organization such as: purchasing, marketing, finance, engineers and other stake holders. So, we cannot miss this thought of an individual’s influence over group center buying decisions.

These individuals influence sometimes make it difficult for companies to make final decision in a central meeting to choose between centralized or decentralized purchasing even though they know the benefits of it.

**Mitalkumar Patel**  
**Master Research,**  
**International Business Economics,**  
**International Institute of Paris,**  
**Paris, France**  
[montu637@gmail.com](mailto:montu637@gmail.com)

## **EDUCATION SYSTEM IN INDIA: FACING A NEW CHALLENGES DURING COVID-19**

The education system in India is facing a new crisis thanks to COVID-19. Besides the effect on short-term learning outcomes, extended school closures will result in a loss in human capital and diminished economic opportunities in the long run.

India has the world's second-largest school system, after China. Shutting schools to maintain social distancing amidst the COVID-19 crisis was the most logical solution to avoid community transmission. However, this prolonged closure has a disproportionately negative impact on the most vulnerable students. The pandemic has not only caused the wide rift in educational inequality to balloon but also exacerbated existing disparities.

A total of 320 million learners in India have been adversely affected and transitioned to the e-learning industry, which comprises a network of 1.5 million schools. An NSSO 2014 report highlights that 32 million children were already out of school before the pandemic — the majority of them belonging to the socially disadvantaged class in the country.

While the government endorses India as the flag-bearer of the digital revolution and acknowledges that it is a diverse and multilingual country, as supported by the recently drafted new education policy, e-learning platforms cannot replicate the various dialects, varied contexts and different lived experiences that are brought together by physical classrooms. If e-learning is the “new normal”, the policy must go further to address the feasibility of digitalization to ensure equity and quality in education.

E-learning, as the name suggests, relies on the availability and accessibility of technology, but little or no availability of electricity is a significant challenge to taking advantage of education online. In a recent 2017-18 survey, the Ministry of Rural Development found that only 47% of Indian households receive more than 12 hours of electricity and more than 36% of schools in India operate without electricity. This

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suggests that while students from families with better means of living can easily bridge the transition to remote learning, students from underprivileged backgrounds are likely to succumb to inefficiency and a lack of adaptation, either because of the inaccessibility of the technology or the low education of their parents to guide them through tech-savvy applications.

Aside from the stresses of access and affordability, a daunting task for a student is to keep up with their studies and peers. Unlike an active classroom setting, e-learning does not accommodate one-to-one discussions or problem solving with tutors. Reports emphasize that the receivers (students) are not the only ones struggling – teachers are too. Teachers and institutions are not always trained and equipped to transition to online teaching. Many teachers are unqualified when it comes to using new technologies and interfaces.

According to the Key Indicators of Household Social Consumption on Education in India report, based on the 2017-18 NSSO, fewer than 15% of rural Indian households have internet access (as opposed to 42% urban Indian households). A mere 13% of people surveyed (aged above five) in rural areas — just 8.5% of females — could use the internet. Girls in vulnerable households face increased domestic duties inducing their inability to access online education either because of inadequate access to the internet and gadgets or because the male child and his teaching are prioritized. This silent exclusion of children belonging to families in distress may cause child labour and child marriage.

Economic reform policies have always leaned towards hyper-digitalization. For a long time, they have discussed how to innovate working and studying with at-home technologies. However, the implementation of these policies has not addressed the educational inequalities that have today emerged as a crisis in the caste and class struggle in India.

The scope of e-learning is enormous and can help realize the potential of each student. There lie both opportunities and challenges for the government and the private sector. The aim should be to ensure equal and adequate access to such platforms as the country continues to globalize and catch up with advanced economies. If the Indian education system aims to transit to online learning in the future, it must emphasize policies that bridge the digital divide and move the country closer to achieving the Sustainable Development Goals.

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## **INTERNATIONAL MARKET AND TRADE OF GREEN VEHICLES**

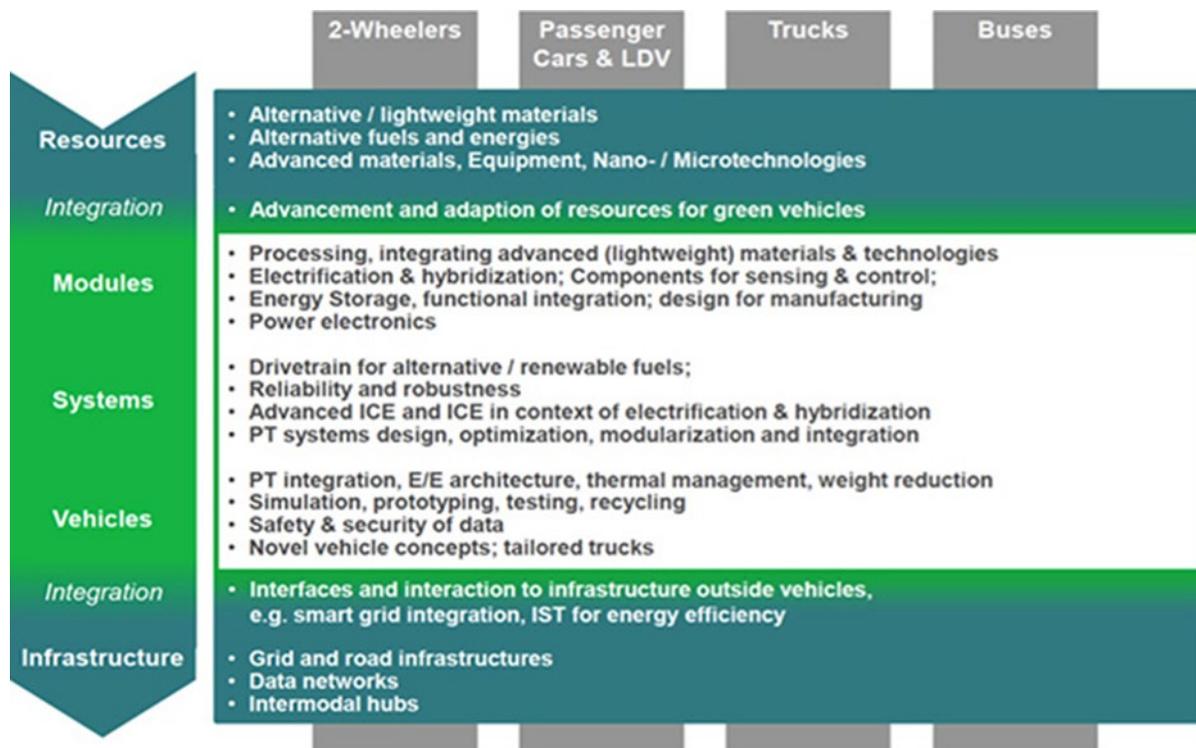
A green vehicle, or clean vehicle, or eco-friendly vehicle or environmentally friendly vehicle is a road motor vehicle that produces less harmful impacts to the environment than comparable conventional internal combustion engine vehicles running on gasoline or diesel, or one that uses certain alternative fuels. Presently, in some countries the term is used for any vehicle complying or surpassing the more stringent European emission standards (such as Euro6), or California's zero-emissions vehicle standards (such as ZEV, ULEV, SULEV, PZEV), or the low-carbon fuel standards enacted in several countries.

Green vehicles can be powered by alternative fuels and advanced vehicle technologies and include hybrid electric vehicles, plug-in hybrid electric vehicles, battery electric vehicles, compressed-air vehicles, hydrogen and fuel-cell vehicles, neat ethanol vehicles, flexible-fuel vehicles, natural gas vehicles, clean diesel vehicles, and some sources also include vehicles using blends of biodiesel and ethanol fuel or gasohol.

According to the Horizon 2020 regulation, the development of 'Smart, Green and Integrated Transport' is a major Societal Challenge for Europe. The EGVI PPP addresses this challenge: it aims at delivering green vehicles and mobility system solutions which contribute to the development of a competitive and sustainable transport system in Europe.

Involving the automotive, smart systems and smart grids industries in a cross-sectoral approach, it should also have a positive impact on the innovative strength and global competitiveness of the European economy.

The scope of the European Green Vehicles Initiative focuses on the energy efficiency of vehicles and alternative powertrains in the road transport sector. It covers several types of road vehicles, from passenger cars, trucks and buses to two-wheelers and new vehicle concepts.



The topics addressed within the EGVI PPP need to respond to this goal of energy efficiency of vehicles and alternative powertrains. They concern all the technologies required at various product layers - from modules to systems and vehicles, as well as the integration of resources and the integration into the infrastructures. The objective of this integrated approach is to cover the entire process chain from resource application to demonstration and creation of services, and to extend research and development to innovation. Produce objective information for policy and decision makers on hybrid and electric vehicle technology, projects, and programmes and their effects on energy efficiency and the environment.

This is accomplished through topic-specific Task groups, which produce general and market studies, assessments, demonstrations, comparative evaluation of various options for applying these technologies, technology evaluations, and more. Disseminate information produced to the International Energy Agency (IEA) community, national governments, industries, and to other interested organizations. Collaborate on pre-competitive research projects and related topics and investigate the need for further research in promising areas. Collaborate with other transportation-related IEA Implementing Agreements and collaborate with specific groups or committees interested

in transportation, vehicles, and fuels. Provide a platform for reliable information on hybrid and electric vehicles.

The government's wants to understand the only way to change to the globally green vehicles. Every country should make sure fellow people's wants to understand about feature how we affect because of global warming. If the people understand before 2050 we can able to change globally green vehicles.

Electric vehicles are several times more efficient in converting energy into vehicle movement than conventional gasoline and diesel vehicles. They are much more compatible with renewable energy sources. They can produce no emissions at the vehicle tailpipe and much lower life-cycle "well to wheel" emissions.

Accordingly, businesses, governments, and non-governmental organizations are turning to electric vehicles to dramatically lower oil use, reduce carbon pollution, eliminate local air pollution, and spur economic development. Long-term planning scenarios indicate that the global vehicle fleet will have to be almost entirely made up of electric vehicles, powered mostly by renewable sources, by 2050 if the world is to avoid worst-case global climate-change scenarios.

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**Sigele Ishola**  
**MBA,**  
**Project Management and R&D Expert,**  
**France/Nigeria**  
[sigeleishola6031@gmail.com](mailto:sigeleishola6031@gmail.com)

## **INVESTMENTS IN KNOWLEDGE AND INNOVATIONS IN E-BUSINESS IN NIGERIA**

Nigeria has a bold vision of becoming one of the top 20 economies in the world by 2020, as outlined in its “Nigeria Vision 2020” strategy. Although currently eighth in the world in terms of population, the country ranks 41st in terms of GDP and 161st in terms of GDP per capita. Despite being one of the poorest countries in the world, Nigeria is a powerhouse on the African continent by virtue of its size. Its vast oil wealth also promises much in the way of potential finance for development.

Knowledge has always been central to development. Traditionally, cultures that knew more than others were better able to adapt to their environments, survive, and thrive. Knowledge is becoming truly global, accessible, and democratic. The impacts of this paradigm shift are all around us. The challenges faced by the Nigerian education system are great, but so too are the potential and the scope for meaningful government participation as an architect, provider, and partner, rather than just as a regulator.

To improve access, quality, and funding of education, Nigeria must harness the contribution of the private sector. Government can play a catalytic role in the process of building strong public-private partnerships that could provide funds and know-how to improve curricula and realign research priorities. A stronger and continual exchange among schools, universities, research institutions, government agencies, and private firms can help cater to the needs of industries and produce more employable graduates, thus reducing the serious problem of unemployment among Nigerian youth.

The first step toward adopting an innovation culture is to adopt existing technologies and adapt them to the local situation. As demand exceeds the supply of skilled human resources, and labor rates in Asian economies edge upward, Nigeria has the potential to absorb existing technologies and production systems, especially in the services industries. Nigeria’s production systems are far from efficient and there are great potential gains to be achieved simply by moving toward more modern and efficient

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production techniques, especially in the service sector. In practice, many of these improvements will come through increased FDI in nontraditional sectors, especially ICT, tourism, and financial services.

Nigeria's innovation system is not as well-developed as those of other African comparator countries. The country needs to strengthen the collaboration between its universities and the private sector. Higher education institutions have few formal linkages to industry, and as a result tend to continue teaching outdated materials and producing graduates who are ill-equipped for the working environment.

This is an opportune time for Nigeria to begin its transition toward a knowledge economy. Dialogue and partnerships should be used to encourage the development of research communities in order to build the national innovation system. This will help Nigeria attract more FDI and research and development resources to establish national centers of excellence.

Nigeria boasts the largest population in Africa – set to increase from 180 million today to 440 million by 2050, with gross domestic product expected to grow between 4.5 and 9 percent each year in between. With 38 percent of Nigerians now connected to the internet – a figure that's on the rise fueled by a growing middle class – our e-commerce industry clearly has potential.

But reaping these online rewards isn't straightforward. To encourage Nigerians to make more online transactions the e-commerce industry must find innovative solutions to the table stakes of online sales, such as fast and easy payments and refunds, and trouble-free deliveries and returns. Perhaps it's the passion and commitment involved in bringing Nigeria's strong trading culture online that makes our country an attractive proposition for investors.

## **ENTERPRISE RESOURCE PLANNING**

Enterprise Resource Planning frameworks have considered as the maximum massive development in the corporate utilization of statistics innovation inside the 1990s. These days, ERP frameworks have become out to be huge in modernday commercial enterprise activities, and ERP market is relied upon to recoup from the sharp downturn in 2000 and 2001 and develop to \$9. Five billion via 2006 as indicated by an investigation by using the ARC Advisory Group.

Actualizing an ERP framework is usually a broad and expensive procedure inclusive of the large degree of human and one of a kind property, incorporating diverse intrigue gatherings, coping with the time weight and confronting one of a kind problems. The ERP execution disappointment fee is high. A significant sum study has completed on elements that have an impact on the utilization method to understand the simple achievement elements which might be essential for robust ERP execution.

Numerous analysts have recorded individuals factors of their essential success variables list and have concurred that properly overseeing HR is a key for an accomplishment in ERP utilization ventures. Likewise, propelling an ERP undertaking consequences an unavoidable exchange method, which as desires be received numerous social and administrative difficulties, as an instance, patron competition, the executive's obstruction, representatives absence of proposal, high turnover of crucial workforce, absence of mastery, inadequate human sources, lack of getting ready, etc.

Enterprise resource planning (ERP) systems have become increasingly popular in modern business operations over the last decade. These software systems have been a matter of interest for various organisations and researchers reasons being the benefits promised and problems encountered in achieving those. This chapter provides a brief introduction to what ERP is, its major vendors and characteristics, reviews reasons for implementing an ERP system, discusses the advantages of ERP and shortly reviews the ERP implementation process.

Endeavour Resource Planning (ERP) is a PC primarily based framework intended to location groups' actual movement zones: arranging, introduction and patron management beneath an umbrella. ERP framework is a product package of diverse modules, as an instance, constant assets the executives, controlling, budgetary bookkeeping, fabricating, HR, arranging and development, etc. Every module is enterprise technique express. By and large, businesses pick one on the spot package deal available for their enterprise, but it is added every day to choose the modules that nice deal with their problems.

ERP frameworks executions make the accompanying benefits for the businesses:

- improves the affiliation's presentation;
- kills wasteful manual processes;
- offers incorporated, mission wide ordinary devices and methods;
- diminishes the costs by way of enhancing the challenge effectiveness through computerization;
- includes upgrades in coordination's, technology booking, customer management and consumer responsiveness;
- offers undertaking extensive statistics permeability, detailing and preference help;
- carries the potential to cope with the all-inclusive challenge of providers, unions and customers as incorporated wholes.

The favourable principle function of these frameworks from the mechanical point is they give a regular coordinated programming degree for commercial enterprise bureaucracy. These frameworks have giant highlights: proper off the bat, they inspire a causal association between a visual model of enterprise bureaucracy and the product usage of these methods, and furthermore, they guarantee a degree of combination, statistics respectability and security, which isn't correctly accessible with exceptional programming stages.

## About the authors

**Andrii Kupriiov**

Student, Economic cybernetics,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine

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**Avik Ahmad**

MBA, International Marketing Department,  
India  
[ahmadaaav14@yahoo.com](mailto:ahmadaaav14@yahoo.com)

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**Ayub Mohammad**

Ph.D student,  
International Institute of Paris,  
Pakistan  
[ayub\\_fr@yahoo.com](mailto:ayub_fr@yahoo.com)

---

**Bishal Thapaliya**

Master Research – IT System Management,  
International Institute of Paris,  
Paris, France  
[vishal.thapaliya@gmail.com](mailto:vishal.thapaliya@gmail.com)

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**Dan Phan**

MBA,  
Project Management Expert,  
Hanoi, Viet Nam/Paris, France  
[danphan02660@gmail.com](mailto:danphan02660@gmail.com)

---

**Daryna Vorontsova**

Student,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine  
[v.darisha@ukr.net](mailto:v.darisha@ukr.net)

---

**Dirghayu Khadka**

BBA,  
International Institute of Paris,  
Paris, France  
[khadka08@live.com](mailto:khadka08@live.com)

---

**Dmytro Zatonatskiy**

National Institute for Strategic Studies,  
Kyiv, Ukraine  
[dzatonat@gmail.com](mailto:dzatonat@gmail.com)

---

**Du Hongwei**

Cultural Scholar, Doctor of Philosophy,  
China  
[duhongwei1717@163.com](mailto:duhongwei1717@163.com)

---

**Gulara Aliyeva**

Independent Expert on Economics and Finance,  
Baku, Azerbaijan  
[aliyevagulara@yahoo.com](mailto:aliyevagulara@yahoo.com)

<b>Justin Ojumobi</b>	Pre-doctorate Student, International Institute of Paris, Paris, France <a href="mailto:chineduo30@gmail.com">chineduo30@gmail.com</a>
<b>Karolina Petrenko</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:karolina.ptrxk@gmail.com">karolina.ptrxk@gmail.com</a>
<b>Karan Bhavnani</b>	MBA, Banking and Finance Expert, International Business Institute, France/India <a href="mailto:kbhavnani1985@yahoo.com">kbhavnani1985@yahoo.com</a>
<b>Kuldeep Singh Bullar</b>	Bachelor business administration student, Graduate School of Management Lille and Paris, Ecole Supérieure de Commerce de Lille, France/India <a href="mailto:k.bhullar1989@gmail.com">k.bhullar1989@gmail.com</a>
<b>Lina Wordley</b>	Master in Economics, Project Management Expert, London, UK <a href="mailto:linasconst@gmail.com">linasconst@gmail.com</a>
<b>Linh Nguyen</b>	MBA, Marketing Manager, Hanoi, Viet Nam/Paris, France <a href="mailto:L.nguyen15@gmail.com">L.nguyen15@gmail.com</a>
<b>Mangamuri Ramakoteswar Rao</b>	Master business administration student, International Business and Diplomacy Institute, France/India <a href="mailto:mangamuri1993@gmail.com">mangamuri1993@gmail.com</a>
<b>Manon Gords</b>	MBA, Communication Expertise, Business Consulting, Paris, France <a href="mailto:m.gords00@gmail.com">m.gords00@gmail.com</a>
<b>Mariia Sytnyk</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:msitnik99@gmail.com">msitnik99@gmail.com</a>
<b>Maryna Hubska</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:maryna.hubska@gmail.com">maryna.hubska@gmail.com</a>

<b>Mitalkumar Patel</b>	Master Research, International Business Economics, International Institute of Paris, Paris, France <a href="mailto:montu637@gmail.com">montu637@gmail.com</a>
<b>Nagaraju Chowdary R</b>	Ph.D student, International Business and Diplomacy Institute, France/India <a href="mailto:cnagarajuchowdary@yahoo.com">cnagarajuchowdary@yahoo.com</a>
<b>Nicolas Dupont</b>	MBA, Professor, Finance and Crisis Management Expert, Paris, France <a href="mailto:nicdupont061@orange.fr">nicdupont061@orange.fr</a>
<b>Nikita Silchenko</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:mukuta063@gmail.com">mukuta063@gmail.com</a>
<b>Oburoh Agbu</b>	Ph.D student, Marketing Manager, International Business Institute, France/Nigeria <a href="mailto:o.agbu12@gmail.com">o.agbu12@gmail.com</a>
<b>Oleg Koleda</b>	Head of sector, International Competitiveness Development of Regions, World Economy Center, Institute of Economics, National Academy of Sciences of Belarus, <a href="mailto:icei@economics.basnet.by">icei@economics.basnet.by</a>
<b>Oleksii Nadvodniuk</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:aaaaa.1.08@ukr.net">aaaaa.1.08@ukr.net</a>
<b>Olena Shaikova</b>	Student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine <a href="mailto:alenashaikova@gmail.com">alenashaikova@gmail.com</a>
<b>Olga Anisimova</b>	Ph.D, Senior Researcher, State Scientific Institution «Institute of Educational Analytics», Kyiv, Ukraine <a href="mailto:olgaanisimova@ukr.net">olgaanisimova@ukr.net</a>

<b>Paola Diez</b>	MBA, Strategic Development Expert, STU Consulting Group, Spain <a href="mailto:stu_diezpaola1@hotmail.com">stu_diezpaola1@hotmail.com</a>
<b>Prabhu Ramakrishnan</b>	M.Sc., MBA, International Trade & Marketing, International Institute of Paris, India/France <a href="mailto:prabhureyy@gmail.com">prabhureyy@gmail.com</a>
<b>Praveen Raju</b>	Ph.D Candidate, International Institute of Paris, Paris, France <a href="mailto:prg1340@gmail.com">prg1340@gmail.com</a>
<b>Prithvi Kumar</b>	MBA, International Marketing Department, India <a href="mailto:pkumaraa2002@yahoo.com">pkumaraa2002@yahoo.com</a>
<b>Rahul Seeram</b>	Ph.D, Doctoral program in Information technology and Data management, International Institute of Paris, India/ France <a href="mailto:Seeramrahul@gmail.com">Seeramrahul@gmail.com</a>
<b>Rashid Basheer</b>	BBA 3rd year Student, International Institute of Paris. Paris, France <a href="mailto:rashi.rashid.m@gmail.com">rashi.rashid.m@gmail.com</a>
<b>Santhosh Venkedachalapathy</b>	Student, International Institute of Paris, Paris, France <a href="mailto:santhoshjean89@gmail.com">santhoshjean89@gmail.com</a>
<b>Segun Turaki</b>	MBA, Business Consulting Department, International Business Institute, France/Nigeria <a href="mailto:sturakiab82@yahoo.com">sturakiab82@yahoo.com</a>
<b>Sigele Ishola</b>	MBA, Project Management and R&D Expert, France/Nigeria <a href="mailto:sigeleishola6031@gmail.com">sigeleishola6031@gmail.com</a>
<b>Taraneh Khullar</b>	MBA, Business Consulting Department, Iran <a href="mailto:khullart007@yahoo.com">khullart007@yahoo.com</a>

***Tatsiana Viartsinskaya***

Doctor of economic sciences,  
Associate professor,  
Head, World Economy Center,  
Institute of Economics,  
National Academy of Sciences of Belarus,  
[vert.region@economics.basnet.by](mailto:vert.region@economics.basnet.by)

---

***Tetiana Zatonatska***

Doctor of Economic Sciences, Professor,  
Economic Cybernetics Department,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine  
[tzatonat@ukr.net](mailto:tzatonat@ukr.net)

---

***Vitalii Markov***

Student,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine  
[realvitmark@gmail.com](mailto:realvitmark@gmail.com)

---

***Yehor Pashkevych***

Student,  
Taras Shevchenko National University of Kyiv,  
Kyiv, Ukraine  
[pashkevych.egor@gmail.com](mailto:pashkevych.egor@gmail.com)

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- Papers are accepted in English and French. Good English and French spelling and punctuation are preferred. Papers should be written in a third person, impersonal style and any use of 'I/we' should be avoided.
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Contacts:

E-mail: [info@irn.center](mailto:info@irn.center)

Address: 16, rue de la Roche,  
Crégy-lès-Meaux, 77124, France

Tel.: + 33 6 48 18 86 95

[www.irn.center](http://www.irn.center)