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DIGITAL TRANSFORMATION AND TECHNOLOGICAL INNOVATION IN CONTEMPORARY SOCIETY

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ABSTRACT:

In this article, I have tried to focus on the issues of need, benefits, advantages, and systemic vulnerabilities brought about by the introduction, development, and changes brought about by artificial intelligence, which is seen as an opportunity to provide quality public services. The article addresses the need to improve creative invention and innovation processes in the public and private sectors, highlighting the importance of digital transformation in the economic, social, technological and managerial fields. In this context, it is noted that digital transformation efforts focus mainly on large-scale changes to processes, systems, and operating models, while digital innovation is applied on a smaller scale and over a shorter period of time. One of the key elements of innovation is that it benefits from the use of artificial intelligence as the hardware and software systems it works with become more powerful. The review has shown that, in addition to the positive effects of the use of AI in different areas of activity, there are many concerns about the creation of a superintelligence that could replace the human factor or limit its access to different areas of activity. Important aspects of technological innovation based on AI were addressed and clarifications were made on the interaction between technology and AI. The article also highlights aspects related to the need to adopt and implement artificial intelligence and technologies based on it at the level of Romanian society, as a prerequisite and necessity on the evolutionary path to survive in a global market based on supply and demand.

KEYWORDS:

Digital transformation, digitization, artificial intelligence, technical innovation, public efficiency

1. Introduction

Digital transformation offers the chance to deliver higher quality public services, increasing public efficiency and productivity, offering the same solutions as before, much cheaper and with shorter timeframes. At the same time, by taking advantage of multiple digital tools, it also enables the delivery of services that were previously unavailable and could only be imagined or not.

Digitisation is equally aimed at both the public and private sectors, helping to improve the creative processes of invention

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and innovation. There is a greater appetite in the private sector for both processes, as both the technological uptake and the incentive side of those involved in the creative act are higher than in the public sector. From this perspective, in the future, both sectors should embrace, apply and use the same elements, specific to invention and innovation activities. This can be seen as a copycat strategy, which is becoming more challenging for the public sector, but is an important element of future digital transformation pathways in the public sector, the challenge being to identify the appropriate means of encouraging creativity and public innovation.

For digital transformation to work properly, the means to encourage creativity and innovation in the public sector must be found and or rethought. In terms of complementarity, public-private innovation networks need more attention and a business model and regeneration that is appropriate for the current moment. Through joint efforts, it has been possible to link some public sector structures with the private sector, but the pace is rather slow and needs to be improved, which is why it is necessary to study these interactions in greater depth.

Experts who have analysed the prospect of this possible interconnection suggest that innovation processes have a real impact in the business, social, technological and management spheres, and that success is only possible with the full involvement of government and public sector agencies for a real digital transformation of the public sector.

So the future innovation pathways will come in each of the four areas, as well as in the interactions between the areas of technological innovations, process and management innovations, social innovations and business model innovations.

The evolutionary processes call for a new set of measures to better map the main future trajectories of digital technologies, their adoption, use and recombination in organisations, in order to improve understanding of their impact on productivity, employment and inequality.

Digital transformation could be truly accelerated by the evolution/revolution of artificial intelligence. Artificial intelligence is everywhere, powering a thriving/profitable industry, fundamentally changing the way businesses operate and the way people work and play.

Research to date highlights that artificial intelligence (AI) can be both a boon and a detriment to a more sustainable world. What cannot be disputed is that AI will bring about changes in the business world, accentuate changes in the public sector and change the approach to issues of public innovation and digital transformation.

2. Digital transformation and Innovation

Digital transformation is about the big picture and the digital transformation effort is primarily focused on making large-scale changes to processes, systems and operating models.

In relation to a company, digital transformation aims to achieve improvements across the whole company over a longer period of time. The ultimate goal is to deliver tangible results that help drive growth or increase competitive advantage. It is important to note that digital transformation is not a one-off event, but an ongoing and changing process that updates and adapts over long periods of time, enabling the players involved in the 'marketplace' to deliver superior products and services to their customers.

Because it looks at the essential aspects of a business, digital transformation has attention:

- easier acceptance of new trends and use of modern technological tools;
- better use of data, continuous analysis and predictive maintenance;

- agility and adaptation to emerging trends to cope with the competitive system;
- better understanding of customer requirements to deliver an improved customer experience;
- making information and capabilities readily available to create more advanced products and bring them to market quickly.

By analogy, digital innovation has similar objectives to transformation, but is applied on a smaller scale and over a shorter timeframe. Innovation could therefore pursue aspects of an activity such as upgrading an existing product or production line, making a company more competitive and increasing its revenues in the short term. Transformations focus on elements of "newness", require consistency and commitment, and contribute through results to propelling companies as true leaders in their field.

Innovation requires consistency, its results do not last very long, which is why it needs to be repeated as quickly as possible, especially when applied to elements of a competitive, competitive system.

The importance of innovation is that it enables companies to make quick decisions in line with immediate requirements and market changes.

If transformation takes longer to implement, innovation can be done urgently and provide a response required by a specific market segment or demand, which maintains the loyal customer base as well as attracting new customers.

Strictly speaking, the benefits of digital innovation are:

- staying at the top of the market, providing rapid improvements and solutions in response to customer requirements and eliminating vulnerabilities;
- gaining competitive advantage by giving customers what they want, ahead of competitors;
- streamlining the business, reducing costs and increasing productivity;
- provides a new vision and maintains a proactive management direction.

From the above it can be seen that although digital transformation and digital innovation are distinct concepts, they work together and a business that aims to succeed will need to use a combination of the two. Although they are essential elements of running a business, they cannot be achieved easily, requiring a concentrated effort in many parts of the organisation, coupled with the allocation of resources and the right strategies.

A company that aims to remain relevant, competitive and productive in an age of information and technology must embrace digital transformation as an essential part of management, with the implications this has for the core business, including the human factor.

Digital transformation requires an infusion of capital, as it is a long-term process, aiming at constant change, fine-tuning, updating and adapting the organisation over long periods of time. Starting from the desire to keep the business at the top of the industry it represents and to be able to provide the best service to its customers, digital transformation does nothing but facilitate easier access to new technology trends and tools, enable better use of data, ensure understanding of customer needs, providing insights and capabilities to create more advanced products and bring them quickly to market. Digital transformation, through the experience gained, also increases the agility and adaptability of the organisation to new trends in the economic environment, aligned with the requirements of the market.

In symbiosis with transformation, it is innovation that enables companies to make agile decisions that respond to immediate

requirements and permanent market changes.

Innovation is a creative act, incorporating elements of novelty that have an immediate impact on the quality of products, the overriding aspect being to maintain customer satisfaction. It provides timely solutions when a gap in the market or a specific customer demand is identified. The dynamics of the requirement-innovation-product introduction process maintains the loyal customer base, and the attraction of new customers, with the beneficial effects on the organisation outlined above.

In order to achieve the desired result, innovation must focus on several key aspects, namely:

- a strong understanding of what customers really want, which requires constant communication and good listening skills;
- modern leadership and high-level communication within the organisation;
- achieving cohesion and motivation among creative teams;
- acceptance and development of the system based on diversity of ideas and perspectives;
- management's constant desire to improve.

Transformation involves major changes in the organisation and several aspects are important to achieve the desired effect, including:

- having a clear vision for change, knowing clearly what the transformation is intended to achieve;
- the existence of a strategy that is grounded in reality, leading to the achievement of the set objectives;
- the existence of the skills and abilities needed to lead a transformation without disrupting the current work and without causing upheaval within the organisation;
- the provision of material and human resources and tools necessary for transformation.

The most effective way to achieve success with both digital transformation and digital innovation is to call on a skilled and accredited consultant in the field.

3. Innovation and Artificial Intelligence

To talk about the role and importance of artificial intelligence, we must start from the truth that human intelligence is limited by the physical characteristics of the brain, which, compared to the hardware structure of artificial intelligence, can be remodelled, modified or improved more difficult to increase its performance level. So the transformation of the "human computer hardware system" is cumbersome, sometimes limiting, or cannot have anticipatory effects to analyse and process information in extremely small time units, in any working environment conditions.

Equally, the progress made by artificial intelligence in recent times raises fundamental questions about whether mankind can oversee the development of this field in the long term and maintain the independence of human creativity in the face of technological change. Recognising the natural progress, we observe every day the sequential superiority of computers over humans, which leads us to accept that in the medium and long term, the changes generated by the implementation of intelligent systems will be increasingly fierce.

There are many areas and sectors of activity in the industrial sphere where the advantages of artificial intelligence are already being reaped, being able to improve production lines, use information from databases, of very high capacity, which can then be used for creative acts or for advertising purposes. Basically, we have to accept that society is in a complex technical process of replacement of manual labour by

machines, which has not occurred in any other historical period known to date, which has produced changes or massively shaped our consumption habits. One could take away the idea that artificial intelligence only produces benefits and that it is only geared to meet increasingly sophisticated customer demands. In reality, artificial intelligence is used in both civilian and military domains, and the activities carried out may be legal or illegal, which is a matter of the human factor employing it, not the level of intelligence embedded in it. This often leads to differing attitudes towards the use of artificial intelligence, based on the idea that it can have catastrophic effects on mankind if left unchecked.

What is obvious and cannot be disputed is that in the market economy, companies, bodies and organisations are dependent on artificial intelligence, seen as the reverse 'machine intelligence' in relation to the 'natural intelligence' of humans, which has to do with how the structures mentioned understand to innovate or not, as a prerequisite for remaining in the fiercest and most ruthless competitive system. The public and military sectors are faced with growing demands and increased demands for improved product quality, coupled with a period of austerity that does not seem encouraging in terms of accumulation and investment. The chance to get out of this dilemma can be achieved by investing in research as a complementary element of innovation. It must be understood that investment in human intelligence, which generates or develops artificial intelligence, leads to the development of the creative act, through a high-performance innovation system. The end result is invention or innovation, which ultimately aims at cost reduction, increased productivity, user-friendly product design, increased quality and efficiency in services, remodelling or new business models.

While progress is inevitable, it is important for mankind that the level of intelligence embodied in innovations, especially technological ones, does not have negative effects on ecosystems.

This raises questions as to whether the act of creation is solely the prerogative of the human factor or can it also be taken over by 'machines' and if so how can a systemic balance and limiting level of information management be maintained. It is not yet possible to speak of artificial intelligence having human feelings, senses or spirituality, aspects which maintain a boundary up to which its development can be considered, although there are situations where certain limits have been reached in this respect (see humanoid robots).

Even if artificial intelligence can currently be seen as an algorithm used and followed by computers, it cannot be denied that the exponential increase in their processing capacity, the enormous volume of data accessible in a short space of time and 'cloud computing' are fostering the development of the creative act, with innovations on an upward trend and the future dependent on them. As innovation is dependent on financial resources, sometimes heritage resources, cultures, interests and motivations, and working styles, it is not possible to create a single long-term development target.

Time has shown that the process of innovation is perpetual and more slowly or more quickly leads to changes in people's lifestyles and living standards. It would be normal to achieve a rise in living standards but, as we have already pointed out, the act of creation does not always pursue noble goals.

Starting from the idea that artificial intelligence is the intelligence of the machine and allows in certain situations robots to control the means of production, the question arises as to whether there is not a conflict arising from their taking over a very high percentage of human functions, resulting in increased unemployment and social unrest. From this point of view, in certain situations, artificial intelligence may be limited in

technological innovation or its orientation towards technological production processes and lines, with a view to taking over from the human factor the tasks that are highly difficult, highly precise in execution, repetitive, involving frequent changes in position and work plan, high risk, high frequency of execution, complementary and less visible to competitors in the labour sphere. Artificial intelligence can therefore relieve us from many highly repetitive, dangerous or extremely detailed tasks. Sometimes it is possible to provide extra time for employees in various types of work to use for other purposes, possibly to develop, without the problem of job losses. A very large percentage of experts believe that artificial intelligence will only be able to replicate human performance in a few decades as presented in Figure no. 1.

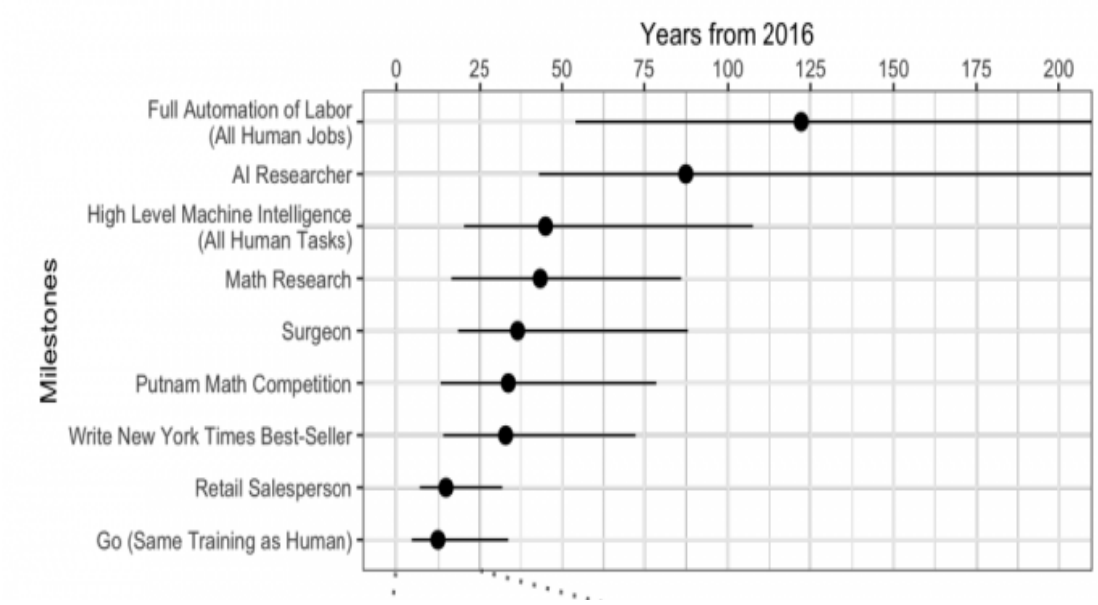

Figure no.1: When will AI exceed human performance?
(Source: https://www.technologyreview.com/2017/05/31/151461/experts-predict-when-artificial-intelligence-will-exceed-human-performance/)

Feelings, intelligence, creativity, senses are human and cannot be replaced by a machine, no matter how good it is. A robot will not adapt to the context but will operate according to an algorithm, just as it lacks humour, sarcasm and acts according to predictable and always rational thinking. The acceptance and use of artificial intelligence also depends on the way in which the citizen's privacy is respected, with the connotations in this direction being that of friend rather than foe. According to the Official Journal of the European Union (2017, p. 3.16) "*...new standardisation systems for the verification and validation of AI systems should be developed, based on a broad spectrum of standards, in order to be able to assess and control the security, transparency, comprehensibility, explainability of decisions and ethical accountability of AI systems"*.

Artificial intelligence and technological innovation have a direct impact on economic growth, with competition in the market for products generating the development of the two complementary segments (Zhang, 2020).

The business world, with artificial intelligence at its fingertips, which provides it with a huge amount of data and facilitates the rapid execution of analyses, syntheses and comparisons, can predict and forecast

the evolution of markets, and establish the optimum in sales, transactions and investments. Elements of this kind, vital to the existence, maintenance or growth of companies, contribute to the infusion of capital into the development and use of artificial intelligence in their various fields of activity.

It is easy to conclude that artificial intelligence, used creatively, with good intentions, can be the best thing that has ever happened to mankind and can help to raise performance levels in multiple fields of activity.

4. Technological innovation – The important step

According to some specialists, "innovation" has the following aspects:

- the production of a new or improved product;
- the introduction of a new process, line or method into the sphere of production or the market;
- the discovery of raw materials, materials or semi-finished products which may generate new sources of supply in the production sphere in the future;
- reorganisation of the activity or of a technological line to cope with the competitive market system and to eliminate the exclusive position of certain competitors.

Innovation, in the abstract sense of the term, can be seen from the perspective of novelty based on the discoveries of science and technology, but thought of as something useful the phenomenon is broader and looks at the link between the discovery and the level of customer satisfaction according to their needs.

Innovation is a wide-ranging process that starts from a state of need, involving the creative idea, the allocation of material and human resources, the actual transformation based on scientific knowledge, and finally the realisation of the innovation. When we also involve artificial intelligence, in various forms and with various tools to help, we can shorten lead times in execution and testing. The validation of any innovation is proven by the level of applicability of the technical novelty, in the field to which it is addressed, or by the market relationship, through the phenomenon of the market for the products and services made.

We can see that innovation does not happen by itself, it emerges as a state of necessity, which generally seeks to break down barriers, overcome human limitations in various forms, and is geared towards reducing the cost of the products made with an input of intelligence incorporated into them. Apparently the aim of creation is noble, but as it is the prerogative of the human factor, it would not occur without incentives and motivations except very rarely or in certain critical contexts and situations.

If it can be accepted that in the early stages the main aim is to reduce costs then we can accept that innovation is tailored to a particular type of business and is not the route to other types of business. It is therefore more likely to increase profits by reducing the costs of products and services.

Any technological innovation must be taken into account in the cost-benefit analysis, especially as there is also the possibility of technical failure, i.e. the invalidation of the adopted solution, as sometimes personal expectations do not match those of the market. On the other hand, in the context of innovation from the point of view of safety at work, when we are talking about the physical integrity of the individual, it must be accepted that the return on investment is no longer paramount.

Technological innovation based on classical principles of design and operation can be predictable in its effect and can ensure a decision-making link that is closer to customer expectations, which is not at the heart of the creative act where the facilities of artificial intelligence are used

and much of the transformation process is intrinsic, with users only having systemic inputs and outputs at their fingertips.

In today's context, technology has an impact both on parties in consensus and on those in conflict of interest. It is important, whatever the situation, not to stop the evolutionary process, trying as far as possible to adapt human behaviour and its reactive impulse.

As far as can be seen, a consensus has been mutually accepted, because this is the only way to explain the fact that technology is nowadays everywhere, with the possibility that at some point it may influence or be part of human decision-making.

"*Technology is increasingly present in almost every aspect of our lives, from the way we stay connected with loved ones, to the way we bank, to the way we learn and work. Our increasing reliance on technology has left us unable to make decisions unless we have access to it.*

We are now so dependent on technology that it is shaping our behaviour, both in terms of abstract issues such as beliefs and values and more tangible issues such as communication habits. Ignoring the power of technology in our everyday lives would be impossible these days" Maria Britton, CEO at Trade Show Labs, told The Sun (Jaupi, 2022).

This raises the question of whether this 'subordination' of mankind to technology does not lead to a slowing down of brain activity, with adverse effects on creative capacity and independent decision-making. As expert opinion is currently divided, we can accept that it is not unimportant that, with technology at our fingertips, we use it to make the best decisions in our daily lives.

Mankind wants to use and enjoy the evolution of technology, based on the multiple valences of artificial intelligence. To this end, it is worth stressing the importance of subtlety in how it is used, as a supporting element, without letting it get out of hand, avoiding the way in which it could seriously affect life itself on earth.

"*Technologies such as artificial intelligence (AI) have the potential to revolutionise many aspects of our lives, but they also bring with them a number of ethical challenges*" said Ben Tibbits, managing director at Broadband Deals.

Brandon Mackie, co-founder and CRO of Pickleheads, echoed this sentiment, noting, "*I think it's important to remember that AI is just a tool and it's up to people to determine how it's used*".

At the heart of the competitive system between the major economic powers is artificial intelligence , which is a cutting-edge technology that is making huge profits for large corporations and beyond. The most important players in the innovation sphere, according to the Global Innovation Index, are the United States, followed by Germany, South Korea, Japan and China, the latter aiming to become the global market leader in the artificial intelligence sphere. Such ambitious projections rely on huge infusions of capital and a super-skilled and trained workforce.

At a time of globalisation, when we have full labour market freedom, the rise and dominance of artificial intelligence and digital technologies is more noticeable than ever. Not unimportant is how the economies of various countries, especially small ones, will adapt to the new requirements and whether they can keep pace with the pace set by the big players in the development of artificial intelligence and technologies based on it without being driven out of the market.

Humanity is constantly changing, and the aim has always been to transfer some of the most difficult, dangerous and unpleasant human tasks to the world of machines and mechanisms, known generically as robots as can be seen in Figure no. 2.

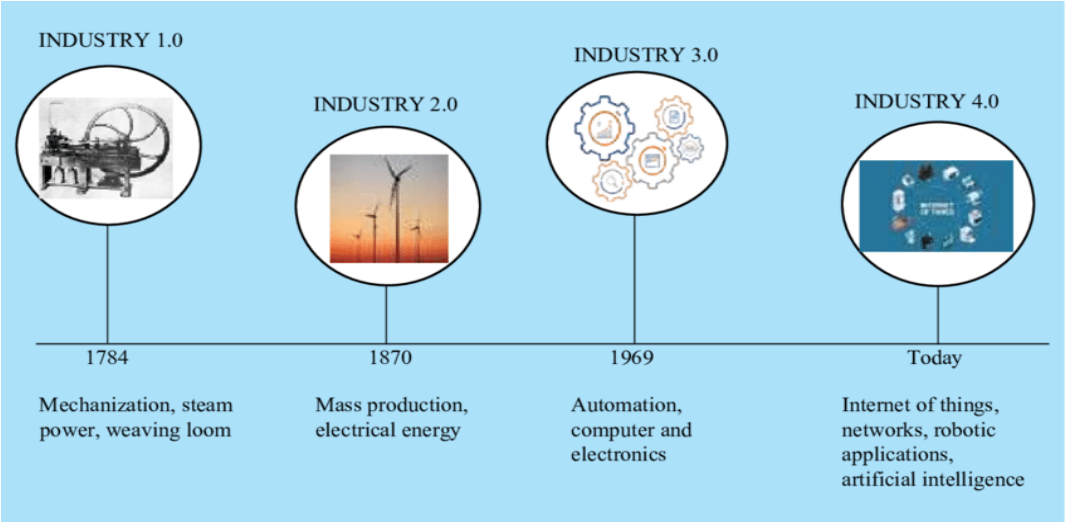

Figure no.2: From industry 1.0 to 4.0 (shows the industry revolution)
(Source: https://www.researchgate.net/figure/From-industry-10-to-40-shows-the-industry-revolution-1-st-industrial-revolution-used_fig18_346887629)

The phenomenon of transformation is an arduous and long-lasting one, which is why it has undergone three major periods, known as industrial revolutions, namely the revolution in the mechanisation of production processes, the revolution in mass production and the revolution in the automation of production.

As the process is not stagnant, it is evolutionary, and we are now in the period of the fourth industrial revolution, the transition from simple digitisation to innovation based on the combination of technologies. The current process is underpinned by the development of high-speed internet, cloud technology, artificial intelligence and automation, all of which benefit from the integrated support, storage, processing and interpretation capabilities of highly sophisticated hardware and software.

In addition to the fact that the new equipment has large storage and processing capacities, its even greater importance in the evolutionary innovation process is when the link between them is achieved, with convergence and interaction contributing to the acceleration of processes, almost instantaneous access to analysis and interpretation, aspects of relevance that are within the reach of researchers and investors alike, giving the possibility of continuing or abandoning certain actions, with reduced costs.

In the context of understanding and developing technological innovation based on artificial intelligence, a fundamental problem is to clarify the reciprocity between technology and AI. This aspect supports the acceptance of the new form of intelligence as a central element in the evolution of technology and thus of the production process based on its use. Sectors such as the automotive, aeronautics, medical and military industries cannot be thought of and cannot perform without the facilities offered by artificial intelligence. In a world of competition the market demands immediate adaptation and change, with levels of understanding and acceptance making the difference between the players involved. Changes in the industry have contributed to adapting and changing customer habits and consumption needs, with ever higher demands.

If artificial intelligence-based technology is taking over the consumer

market, there is a serious question about the disappearance of many jobs and whether its overdevelopment may, in the long term, be the cause of mankind's demise. The phenomenon is objective, but as long as a social balance is maintained, based on a guaranteed minimum income, it does not lead to social upheavals that are difficult to accept (Russell & Norvig, 2010). However advanced artificial intelligence is and will become, there will always be professions and activities that remain human tasks, such as that of teacher or social worker, where, in addition to knowledge, empathy is also needed.

Artificial intelligence tends to copy human behaviour, it is present in the everyday life of the citizen, it offers immediate satisfactions that seem to make it a friend but it can also control it in various forms, more or less hidden. The logical question arises as to whether the machine will control man, who will lose part of his privacy. Looked at one-sidedly, each of the aspects presented can be thought of as beneficial or restrictive and can lead to hasty conclusions. As the influence and impact of artificial intelligence in the transformation and development of technologies can no longer be denied, acceptance of the coexistence of the hybrid human-machine system is an important step in everyday life. We need to find those connecting elements that make artificial intelligence a friend and not an enemy.

Life has shown us that in areas such as the military or itelligence it is no longer possible to operate without the involvement of artificial intelligence, the risk that could be generated by its involvement in decision-making.

The world is constantly changing and in various forms, some of the easiest, has artificial intelligence at its fingertips. In the context of having it “think and decide” for humans, what can be done to permanently control it or what happens when at some point it stops responding to human command? Seen in this light, the question arises as to whether or not artificial intelligence poses a threat to life on earth, especially as we cannot leave it to well-meaning state actors alone. As there is no certain answer, all that can be done is to accept its presence and the fact that its use in society cannot be abandoned.

Probably, as long as artificial intelligence cannot self-regenerate to be able to function according to human belief, its coexistence with humans is at an optimal level of acceptance. One could understand the aspect of increasing the functional capacity of the brain by implanting microchips or other artificial forms, but these too raise questions about the possibility of controlling and manipulating the upgraded subjects.

Fundamental questions about the use and acceptance of artificial intelligence arise, such as:

- how and how does technology manage to improve and if it should simplify and increase the satisfaction level of human life?
- where and whether control of human life is allowed and whether personal privacy is lost by mixing in some form of artificial intelligence?
- who owns the information collected through various forms of technology's involvement with humanity?
- how is it used and what are the implications of loss of control over artificial intelligence in military conflict?
- what happens if artificial intelligence is used by various forms of government against the citizen?
- what happens and what are the consequences when artificial intelligence is used to influence or distort the will of the electorate in elections?
- how honest the competition is and whether anyone can distort it.

The bottom line is that technological innovation is accompanied by risk, but without accepting it we cannot progress or the pace is slowed. The state of affairs is

that of the presence of artificial intelligence in everyday life, the evolution is certain and the predictability of the impact on humanity is generated by many factors, the political one being a key one.

5. Pros and cons on the use of Artificial Intelligence and the need for its adoption in romanian society

There are many discussions on the uptake, advantages and disadvantages of artificial intelligence. Whatever the position, the fact is that this form of intelligence is accepted and used by all developed countries, large companies and corporations and smaller players, convinced of its importance, are striving to make substantial steps in the same direction. It can be seen that capital has gradually been injected into the development of artificial intelligence, and by 2018, more than 22 countries around the world, including the European Union, have designed real national strategies for the use of AI (artificial intelligence) in various forms of business. The trend is upwards and in a world governed by globalisation it is impossible to operate outside AI-based systems.

The prospects offered by AI make many see it as a magical tool that will redeem mankind. This excitement has been generated by the perception that AI will be the solution to solve all the world's problems in various fields of activity, from the economic to the political spectrum. The mirage of the possibilities of AI tends to omit the possible dangers of its use in bad faith or by the ignorant.

Undeniably, it offers multiple benefits, with many business models relying on AI, but equally importantly, more and more people are gaining access to the information and facilities offered by AI, gaining increasing confidence in its use. Through forms of immediate perception, society is drawn to AI with simple elements such as smart phones, super-performing video and audio media, cars with topical upgrades, themed advertisements appealing to the human eye, etc.

Large corporations are the main winners in the market which, by accumulating capital, contribute to the development of the technology. They have fully understood the need and usefulness of AI as an essential tool in increasing profits, and are aware that its widespread use can substantially reduce the number of staff involved in their sphere of activity. AI-based systems can be programmed to work according to a random schedule as needed, do not tire and do not need to recover to restore effort capacity, do not generate and do not maintain social problems. The amount of information stored and used by this form of intelligence is huge and can be constantly improved. It can also be seen that the benefits for some can also hinder others through job losses. This can give rise to differing interests in levels of acceptance and development. While it can make some rich overnight, it can leave others broke, and the prospect is often also circumstantial.

In the EU and beyond, such situations have led to the emergence of regulations for digital markets and services that aim to eliminate or mitigate such dangers. In addition to the issues raised, there are other benefits that recommend the use of artificial intelligence, representative of which are:

- increase execution accuracy by eliminating uncontrolled, human-factor errors;
- increasing productivity in the field of activity provided;
- eliminating the risks of injury and occupational diseases;
- elimination of labour conflicts;
- providing people with useful applications in everyday life;
- providing specialised staff for digital assistance.

As disadvantages, suggestive of the use of artificial intelligence (Raj & Seamans, 2019), we can list:

- the need to regularly update hardware and software systems to meet current requirements;
- high maintenance costs for equipment, machinery and installations;
- creating dependence on technology, with the side-effect of human laziness;
- disappearance of human connection and team spirit;
- the elimination of creativity in work, the operating principle being repetitiveness on a schedule rather than adaptability to context.

In a global environment, where transparency and free access to information are benchmarks of the European citizen, the Romanian society cannot make a discordant note and remain tributary to old ideology, with entrenched structures, unsuited to change, where technology based on artificial intelligence is only a desideratum and not a contemporary reality. Regardless of the political and governmental spectrum, it will not be possible to stop or hinder the evolutionary process in its two fundamental aspects, technology and artificial intelligence, even if there is a rather marked inertia and sometimes even a refusal to accept them. Perhaps the requirement of systemic decentralisation is one of the tributary elements of the pace of development. As the private sector is the one motivated to face the system based on competition, internal or external, the expectations regarding the understanding of the moment, acceptance, use, development of artificial intelligence and technology based on it, are essential elements that can promote Romanian capital and ensure business success. So far, realistically speaking, we are lagging behind the established sites, given that we are doing less than we declare.

Not unimportant is the fact that the Romanian state invests rather little in research and that the private sector has not developed an initiative in this area that would lead to obvious medium and long-term benefits. This is also explained by the fact that the financial potential of local capital is limited and foreign capital wants to have a market in Romania and not a competitor in the creative sphere. There is no denying that financial efforts have been made for the technological development of certain areas of activity, such as the medical or education sectors, but investment must also be increased in other sectors such as agriculture and tourism, sectors in which the big players from developed countries can compete.

We need to go beyond the stage of incipient capitalism, be patient and make serious investments in research, while accepting the rate of failure or bankruptcy. It would also be desirable, given the gap with the best-performing global systems, to study niche markets more carefully and invest in technology in areas not covered by the best-performing competitors, as a possible guarantee of recovery and return on investment.

In order to be successful, Romanian society needs to become an entrepreneurial one, which fully understands the importance of selling products and services, for which a technological sturtup is needed.

Another essential element in entrepreneurship is the divestment of teams or joint ventures, with great transparency in shareholder management, creating trust between the parties involved both financially and in decision-making.

Last but not least, attracting skilled labour and capital from the diaspora can help to open up to international markets and infusions of foreign capital.

In conclusion, both the state, through governmental and NGO involvement, and the domestic private sector can increase their contribution to the infusion of capital in the sphere of artificial intelligence and technologies based on it, as a condition and a necessity for adapting to their evolutionary path in the contemporary era, in order to survive in a global market based on supply and demand.

6. Conclusion

Digital transformation offers the opportunity to deliver higher quality public services, increase efficiency and productivity, and provide the same solutions as before, only much cheaper and with shorter lead times. The use of new digital technologies can help governments automate routine tasks, streamline processes, improve the accessibility and responsiveness of public services, reduce bureaucratic costs, and provide real-time information and feedback, all of which improves the overall quality of life for citizens.

Through the use of digital technologies, governments can harness the power of Big Data and analytics to identify trends and patterns that would be invisible through traditional means, benefiting vulnerable populations and those with limited access to traditional services in particular.

Digital transformation could be truly accelerated by the development/revolution of Artificial Intelligence (AI), as it has the potential to unleash new levels of efficiency and innovation by enabling organisations to automate tasks, derive insights from data, and create new products and services.

AI is already transforming industries such as healthcare, finance, and manufacturing, as AI algorithms can be used to analyse large amounts of data and recognise patterns to support decision-making and improve service delivery. The continued advancement of AI has created new employment opportunities in areas such as data science, machine learning, and software development, which have spurred economic growth and created new markets for innovative products and services.

With all of these benefits, the development and adoption of AI also poses potential risks and challenges, including privacy and data security concerns, bias and discrimination in AI algorithms, and last but not least, concerns about job loss or frequent staff turnover due to the adoption of process and workflow automation. It is important that organisations and policy makers take a responsible and ethical approach to AI development to ensure that the benefits are equitably distributed and that any negative impacts are negated or mitigated.

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