CONSIDERATIONS REGARDING THE INTEGRATION OF ARTIFICIAL INTELLIGENCE INTO THE MANAGEMENT OF ORGANIZATIONS

Liliana Ciresica STOICA
University of Craiova
Email: lilliana_stoica@yahoo.com

Abstract:
The challenge facing society is to identify a way to meet customer needs in an innovative way, and Artificial Intelligence helps us achieve this innovation through creative ways. In this paper, we aim to study, from simple to complex, the overview of artificial intelligence technologies, the opportunities generated by their creation and implementation but also the consequences generated by it in the activity of all companies/corporations/and institutions regardless of work done. The subject is deepened by a case study on the process of transformation of an institution in the banking financial system that will allow us to highlight the origins, content, execution and consequences of the transformation process generated by the adoption of artificial intelligence.

Keywords: artificial intelligence, robotics, organizational culture, predictability, digital economy, information technology, decision-making processes.

1. Introduction

The concept of Artificial Intelligence (AI) is not necessarily new. In the last century there has been an openness and a concern, regarding the combination of conceptual notions with the strategies of development, promotion and technological evolution. In recent years it has taken on a variety of forms, beginning to become practically a ubiquitous component of economic and social life - a real set of computer disciplines designed to copy natural intelligence. The term artificial intelligence covers a wide range of fields such as: mathematics, computer science, medicine, biochemistry, aerospace, military, etc.

In order to be defined, artificial intelligence has known several meanings, considered in fact, as a perception of reasoning and human action based on the study of behavior with the help of computers that allow and achieve it.

Kaplan and Haenlein (2019) define AI as "the ability of a system to correctly interpret external data, learn from such data, and use what it has learned to achieve its specific goals and tasks through flexible adaptation."

In our interpretation of artificial intelligence took various forms, which can be structured in the table below:

Table 1

Interpretation/vision Artificial Intelligence

Artificial intelligence (interpretation)	**Human thinking** (vision)	**Action** (vision)
Human Factor	Cognitive Science	Behavioral
Rational Factor	Learned rules	Do the right thing

We can say that artificial intelligence is the ability to replicate behaviorally on a machine / computer, natural elements and / or human activities, such as the ability to acquire and apply knowledge and rules learned by the human mind.

Over time, people's concern has focused on supplying heavy, resource- and energy-consuming activities by machines and computers, thus developing their technical ability to learn, recognize, and reinterpret voice commands, the ability to operate, and to sometimes move massive objects around. This happened with unprecedented speed. The industrial revolution determined both important movements on the labor market in favor of cars, but also mutations in the perception of the importance of labor. Now things have evolved and artificial intelligence is present in any type of work in an obvious or less obvious form, in the form of robots that replace repetitive work, hard work or work in hazardous areas. Intelligent machines / computers thus created through artificial intelligence function and react like human beings. The best example of the use of artificial intelligence worldwide is mobile phones and/or industrial robots. At the same time, information technology plays a key role in digitizing organizations. Focusing on this area, Winkelhake (2017) notes the technological advances that have a great transformative impact on organizations. For example, in the field of banking, the integration of artificial intelligence has led to an unprecedented interpretation/development/refinement of both interpersonal and commercial relations and decisions with major impact on the integration of machines in human interaction, an essential component of technical progress. An example of this is given by Martin Markiewicz, founder of Silent Eight, a Singapore start-up, which has developed and integrated, at the bank level, on the basis of artificial intelligence a technology, much more efficient than the classical method, designed to identify and to stop any illegal transaction before it occurs.

At the macroeconomic level in the field of banking finance, the importance of artificial intelligence no longer needs to be emphasized. Banking financial institutions embrace new technologies in a proactive logic, in order to benefit from all the advantages offered by them (cost reduction, customer satisfaction, exploitation of new sources of income) but also in a defensive logic, to avoid eroding the market position in front of the new, digital suitors. In order to integrate these changes, the digital transformation is initiated, a complex process that involves the organization in its entirety and which aims to adapt it to new economic realities.

Artificial intelligence meets the current requirements of the banking system in order to shape the banking system.

2. Requirements for the creation of an ethical and legislative framework in the field of artificial intelligence according to the vision of the European Union.

At the level of the European Commission, a group of independent experts for artificial intelligence research and analysis was set up, which was developed and

published on April 8, 2019 the "Ethical Guide to Reliable Artificial Intelligence", designed to define and clarify a number of technical terms. The conclusions expressed in this guide exclusively reflect the views of the Group of Experts, in which case they cannot be considered official positions of the European Commission.

In the sense of the promoted ideology, these experts appreciate that artificial intelligence can be assimilated with robotics due to its interaction with the physical world. Thus a robot, defined as a physical machine, must cope with the dynamics, uncertainties and complexity of the physical world, and attributes such as perception, action, learning, but also the ability to interact with other systems is an integrated component in the control architecture of the robotic system. In the design and operation of robots, in addition to artificial intelligence, an important role is played by a series of disciplines such as mechanical engineering and control theory with which to build a series of robotic manipulators, autonomous vehicles such as drones, humanoid robots, vacuum cleaners, robots etc. As mentioned above, it is necessary to develop a legal framework and sets of ethical rules designed to provide legal guarantees so as to prevent the occurrence of abuses caused by the interest and speed of development of AI technology, while respecting human rights.

In this regard, the European Commission stated that there is a strong regulatory framework defined at EU level that sets the global standard for artificial intelligence focused on the human factor. The General Data Protection Regulation ensures a high standard of personal data protection and requires the implementation of measures to ensure data protection in the design phase by default. The adoption of the law on cybersecurity and the regulation on privacy in electronic communications strengthens confidence in the online world.

The new challenges posed by AI allow equipment to learn and implement decisions without human intervention. Decisions made on the basis of algorithms for querying incomplete and / or subjective data, which may be unreliable, or manipulated by cyber-attacks, may lead to some problematic results, as well as the reluctance of citizens to accept or use it. This developed technology, in order to broaden the scope of experiences and exchanges of information, must focus on the human factor. Therefore, AI applications must comply with the law and respect ethical principles by ensuring that they do not cause harm, their implementation. The stated goal of artificial intelligence is to increase people's abilities and not to replace them, to provide citizens with easy tools / means to act / solve problems and at the same time respecting their fundamental rights. To this end, the Commission's experts have the task of developing a set of ethical recommendations, applicable to all developers, suppliers and users of artificial intelligence in the Member States.

At the level of the Commission, in December 2018, a Group of Experts was set up and published, for the first time, a first version on ethics, which subsequently, following consultations with Member States' representatives, materialized in March 2019 in a document - practical guide to guidance / guidance and key requirements. They define three minimum components, necessary and mandatory for artificial intelligence to be reliable, namely:

- to respect the law and the principles in ethics
- be reliable
- be thorough

Starting from these basic components, seven key requirements can be identified that must be met by AI applications, namely:

a) ***Surveillance and human involvement***: Artificial intelligence devices have been created with the stated aim of supporting the people involved to make better decisions, in line with their own objectives, which should contribute to the creation of a fair and prosperous society, supporting -human involvement and its fundamental rights.

b) ***Safety and technical robustness***: The information flows maintained by artificial intelligence must be reliable, so it is necessary that the electronic algorithms be sufficiently robust, reliable and reliable to guarantee the resolution of errors or inconsistencies in all phases of a cycle, system life and proper approach / interpretation of erroneous results. The technology must be reliable, secure to be able to be resilient to external attacks and / or attempts to manipulate electronic algorithms and / or data, and a backup plan must always be provided in the event of problems. Decisions taken from the system must constantly reflect the level of accuracy of the results, and they must be reproducible at all times. In terms of safety, artificial intelligence systems have integrated security mechanisms since the design phase, thus emphasizing the technical and physical robustness of all equipment and processes. To this end, analyzes and processes for clarifying and assessing potential risks, associated with the use of any artificial intelligence system, in all areas of application are established.

c) ***Respect for privacy***: Respect for privacy as well as data protection is essential and must be guaranteed in the IA system. Moreover, digital records of human behavior can allow AI technology to computerize not only people's preferences, age and sex, but also to deduce sexual orientation, anxiety, religious or political opinions. People's trust in data processing can only be achieved if they are guaranteed full control over their own data, as well as the fact that it will not be used for other purposes, to discriminate against them or to violate their right to privacy. In this respect, certain minimum and mandatory requirements must be met to ensure a high quality of the data used and implicitly the performance of AI technology. When collecting and correlating data, subjectivities may arise due to the interpretation of data exchanges on information flows that reflect and generate certain inaccuracies, errors and / or mistakes, so it is very important that access to data, testing / documentation be managed / controlled adequately, thus ensuring the integrity of the data sets at each stage of programming to respect and not compromise people's privacy.

d) ***Transparency and data governance***: The traceability of AI technology is an important requirement to ensure that the entire process is recorded and documented, decisions made by systems and a description of data collection and labeling decisions, electronic algorithms used in decision making. In this regard, all ongoing research is documented, the phases of development of mechanisms, clearly ensures the explicitness of the decision-making algorithmic process, adapted to the people involved, respectively the extent to which it influences and models the process, options and reasoning as well as the transparency of the data underlying the implementation of the business model. Finally, all the limitations / capabilities of an AI system must be identified and communicated to the stakeholders involved, so that end-users know, in an appropriate and responsible manner, that they are interacting appropriately with an AI system.

e) ***Accountability***: This requirement concerns the audit of AI systems, which is mandatory and fundamental and involves the establishment of mechanisms necessary to ensure responsibility / accountability for AI technology and its results,

both in the implementation phase and later, the evaluation of systems by internal auditors and / or external and results in a set of evaluation reports that significantly contribute to and determine the degree of confidence of critical applications including the level of security in AI technology, in terms of fundamental rights. The audit process aims to identify, evaluate and document AI systems, but also the extent of potential risks, minimizing the negative impact of the impact that sometimes involves the use of AI systems. Evaluations approached in a rational manner are methodological, justified and analyze the trade-offs between requirements and potential risks, unfair adverse effects but also accessible mechanisms to ensure adequate remedial measures.

f) ***Protection of society and the environment***: In order to determine whether electronic algorithms and artificial intelligence positively or negatively influence human (biochemical) algorithms, the impact of AI on society and the environment on all living beings must be analyzed. Starting from the idea of biodiversity and the existence of a living environment, including for future generations, we believe that both the sustainability and the ecological responsibility of all AI solutions and systems, regardless of the area addressed, should be encouraged as a global concern for sustainable development. The social impact of using artificial intelligence technology must be analyzed globally from the perspective of society and the environment as a whole, not from an individual / personal perspective, in electoral contexts or political decisions, knowing that AI systems can contribute to the development of social skills and their deterioration.

g) ***Diversity, non-discrimination and fairness***: Information exchanges facilitated in AI systems by new technologies paradoxically use data sets that can sometimes include both unintentional historical subjectivities, poor governance models and incomplete data that invariably lead to discrimination, direct and / or indirect, to unfairly competitive activities, which may generate undesirable effects. In this sense, the creation from the beginning of joint teams for consultation / design / analysis of programming codes of algorithms, exchanges of data sets to information flows, mechanisms necessary to ensure the unitary development of the AI system could and should take into account the full range of human skills, competences and requirements needed to ensure accessibility through a universal design approach, thus ensuring equal access for all involved.

Even if the requirements are created to apply uniformly and even in different contexts to all artificial intelligence systems, their implementation will be done in a concrete way given both the impact and the specific area of each requirement application, as intelligence artificial constitutive element of contemporary reality can no longer be ignored.

It is clear that there is currently a lack of mandatory regulations that adequately address the problems posed by the emergence and functioning of artificial intelligence to meet all expectations, but there is an ethical perspective and a concern of the authorities about the implications for life due to unpredictable impact.

It should be noted that all these indicative recommendations, as opposed to the existing provisions and key requirements with specific use for each area, are not binding or create a legal obligation.

The imminent danger of artificial intelligence is the impossibility of making a clear prediction of the consequences it will have on society. „(…) Once we humans lose our functional importance for the network (this being taken over by artificial intelligence - nn), we will discover until after all, we are not the apogee of creation

(...) Looking back, humanity will prove to have been just a wave in the cosmic flow of data" (Harari, 2018).

The actions of the European Commission aim at achieving a single digital market with a solid regulatory framework, in order to ensure an environment favorable to innovation but also to man.

3. Integration of Artificial Intelligence in the decision-making processes of banking institutions

Advanced analytical techniques for processing large databases involve the use of a large number of data sets from which to extract the information needed to make an effective business decision. Traditional procedures are not able to address issues related to adaptation, use or scalability in terms of the use of these advanced techniques. Using large data sets, advanced data analysis involves the integration of processes and tools, such as statistics, predictive analytics, data mining, reporting, artificial intelligence, and natural language processing, providing the ability to deliver important information to improve the process of decision making.

In recent years, organizations have built extensive data sets for companies with different objects of activity but also for customers, thus generating a disruptive situation in terms of data management. The ongoing digital industry has created huge data flows, forcing organizations to generate, more than ever, processes based on advanced data analysis. Thus, big data sets have been transformed into assets that require specific strategic approaches. These large data sets can develop a key criterion for differentiating competition.

The new technology based on Artificial Intelligence offers companies opportunities to reinvent the decision-making process. Information technology has fundamentally changed the way we use and process information and science has become an essential resource for development. Technology must become a strategic priority at the organizational level because it allows the right person access to the necessary information, at the right time, having an essential role on organizational results. An annual survey of the top 100 companies looks at how managers in large companies view the link between Big Data and Artificial Intelligence, noting that the disruptive potential of new entrants is the main risk.

It is essential that managers actively invest in Big Data and Artificial Intelligence processes to use advanced analysis to improve the decision-making process, and the results are directly proportional to the type of investment. The transition from a traditional, classical organizational culture to a data-based organizational culture is slow at large companies and especially in traditional ones. In small companies or start-ups, these database cultures have been much easier to adopt.

Before embarking on a process of digital transformation, traditional organizations need to conduct an analysis to understand and take the risks of adopting a digital strategy. In other words, an objective and thorough analysis of the external environment (digital offer of competitors, trends in the field of new), organizational deficiencies/disadvantages (outdated processes, closed organizational culture, absence of digital skills, etc.) and customer expectations is needed (analysis of the organization's mission in terms of the existence of the real need to which it responds by offering the product). The results of this analysis may indicate the need to initiate a process of digital transformation, depending on the direction in which the organization evolves but also on its level of digital maturity.

Data-driven decisions are better decisions in those companies that manage to combine industry expertise with data science in order to gain significant competitive advantage. The most important areas for efficient management of the change process in the data-based business environment are:

- management vision;
- identifying and attracting qualified human resources;
- the existence of a technology development strategy correlated with a data orientation;
- interdepartmental collaboration maximized through decision-making processes at the company level;
- adopting an organizational culture that develops an environment conducive to a new level of action superior to that based on limited assumptions.

The decision of managers to invest in new technologies is the main influencing factor for improving decision-making performance within the company.

Companies that due to the specifics of their business have large databases and understand and accept how they can be used effectively for the benefit of the business, can easily strengthen their market position. Large databases are an essential element for business and also an advantage that allows differentiation from competing companies.

Gartner's annual report for advanced analytical solutions highlights the openness to rapid change within companies, (Table 2):

Table 2

Types of leaders and companies - implementation of advanced analysis techniques, examples

Leaders	KNIME, Alteryx, SAS, RapidMiner, H2O.ai
Challengers	MathWorks,TIBCO Sofware
Visionaries	IBM, Microsoft, Domino Data Lab, Dataiku, Databricks (Nou)
Niche Players	SAP, Angross, Anaconda, Terad

Source: Gartner Annual Report – 2018

Over time, economists have used statistics to formulate various hypotheses / predictions, later using one of the subdomains of artificial intelligence, Machine Learning technology - respectively machine learning, which aims to identify relationships that have not been identified by theory. The machine learning process consists of algorithms that can learn from data without the need for rule-based programming. Thus, through the following processes machines can learn data:

- supervised machine learning process - involves the use of initial data to formulate and obtain, through mathematical models, the desired result value
- unsupervised machine learning process - involves the use of initial data that is not labeled; a commonly used unsupervised learning method is to identify common elements in databases and group them into categories - according to requirements
- solution-oriented learning - involves the use of algorithms to make decisions and is even rewarded for making the right decision, for example the game Solitaire.

Mainly, machine learning helps systems to learn using past observation or experiences. In other words, by developing a system based on machine learning, a system is actually built that learns from previous experiences or from the accumulated database. Machine learning is used to solve complex situations that people can solve, but due to inefficient communication the solution is not possible. Machine learning, thanks to the experiences gained, offers optimal solutions to solve these situations.

In table no. 3 are five examples of Machine Learning platforms for building and implementing predictive analytics in living environments.

Table 3

Platform Machine Learning

H2O.ai	Leader in Gartner's 2018 Magic Quadrant for Data Science and Machine-Learning Platforms after being chosen as visionaries in the previous edition, respectively 2017). Customers include eBay, Capital One, Comcast
Microsoft Azure	The platform allows to quickly launch in production the data models as a web service and then to share them on the Azure marketplace, thus gaining exposure. Clients: Carnival Cruises, JLL, Fujitsu
IBM Watson	The platform comes equipped with learning and collaboration functions, tools compatible for working with Notebook Jupiter for Python and Rstudio for R. Clients: Chevrolet, Macy's, The North Face
Dataiku	Startup. The platform provides a Host to guide machine learning processes and data science, integrating a level of abstraction so that anyone who uses it can code in any of Python, Pig, R Hive etc. Clients: L'Oreal, Trainline, Axa Insurance
Databricks	Startup. New vision. The platform provides a Host for modeling machine learning processes, integrating a level of abstraction so that anyone who uses it can code in any of Python, R, PySpark, etc. Clients: NBC, Viacom, HP

Source: Autonomus –May 2018- The Financial Brand

Artificial intelligence interacts two more notions that often create a certain state of confusion: Natural Language Processing and Machine Learning. They intertwine so that they are almost identical. The ideal model of artificial intelligence consists of the mix between Natural Language Processing and Machine Learning, components of Artificial Intelligence.

To better understand how machine learning works, we can take the following example: if we do not know how to play chess, we can develop a sequence that plays chess. Unlike artificial intelligence, we give him examples of past games, and let him learn from all those past examples. The only rule given to the system in this case is how to learn and create algorithms, through our decision on what he will learn using the examples we have given the system. He will learn all these things by processing natural language.

Implementing AI involves analyzing and correlating the relationship between new technologies and the dimensions of the decision-making process at the organizational level. Research shows that the implementation of these systems will generate complex decision-making processes, artificial intelligence coming to support managers who want to become more agile and more creative in terms of how to approach the new, transformations. The premises for decision-making transformation are provided by the analysis of large databases - Big Data.

Organizational managers need, in decision-making processes, forecasts to cope with the vast increasing complexity generated by various influencing factors such as: competitors, digital technologies, sudden changes in demand, seasonality, price reduction campaigns, strikes, pandemics and / or other economic fluctuations / crises, etc. The choice of forecast models is influenced by the context of the forecast, the availability of historical data as well as their relevance, the desired degree of complexity, the time available and last but not least the cost / benefit ratio for the organization.

The speed of decision-making based on data analysis is related to the behavior of the executive, motivated by shareholders in order to accelerate the growth of profitability, but also by fierce competition in the same market segment. One of the main steps in implementing advanced analysis is data-driven culture, as a key factor in transforming data resources into a powerful competitive differentiator. Instrumentation of data and analysis in decision-making processes requires new skills and a better understanding of the company's activity by employees. More than ever, companies have begun to implement and use the principles of agile strategies.

Overall, jobs in the service area, in retail, in industry have a high potential for advanced automation. Following the estimates regarding the automation potential, we can conclude that in certain sectors the activities carried out by human resources can be automated in a percentage of 40%, which leads to a reduction of expenses and implicitly to an increase of profit but also can generate a considerable risk of unemployment. The use of data and analysis could lead to an increase in productivity and an improvement in the quality of work, but in return there is a risk of high unemployment. At the same time, it is necessary for the managers of the organizations to address in a distinct, transparent way all the aspects related to ethics and the models used in the decision-making processes. Thus, for initiating the processes of defining control systems in order to monitor the quality and ethics of decisions, the limitations of the machine learning system require a balanced and consistent approach. For some companies, the implementation of artificial intelligence can become an obstacle caused by the lack of transparency in the specific models they have opted for.

Managers 'and employees' access to databases, accurate information and forecasts are redefined through new technologies that have generated even changes in decision-making within organizations. Thus, for decision makers, access to information becomes a main source of power, giving the advantage of making strategic decisions in new areas of activity.

If, within the organizations, the decision-making flow is a bureaucratic one arranged on hierarchical decisional levels, in order to implement decision-making systems based on data analysis, structurally the organization must initiate a reorganization process and simultaneously provide skills to employees.

An edifying example is the strategy of changing the structure of hierarchies, adopted by the management of DBS Bank Singapore, regarding the granting of powers to some employees in order to reorganize the way the activity within some departments. In order to reprogram the internal workflows, the experiences of employees and customers with the bank were mapped using a hackathon (event in which several programmers and other people involved in software development: designers, project managers, etc., collaborate for development of a software project), the experience and knowledge of employees but also the workspace. The transformations led DBS to be considered the best digital bank in that year, significantly reducing customer waiting times from the very first year.

In the age of rapid change and disruptive technologies, the definition of effective leadership needs to be reformulated. Managers need to develop skills, guidance and openness in the use of technical knowledge through intelligent machines but at the same time, develop skills of inspirational leader that will become essential in decision-making and leadership processes. Another decisive role will be played by their ability to adapt to new challenges that present an upward trend simultaneously with the ability to build / develop a vision of how to run the business in a constantly changing environment.

Redefining the role of manager is imposed by the acceptance of advanced analysis techniques but also by the implementation of artificial intelligence, elements that lead to changing the dynamics of political factors that impact decision-making processes.

Each business segment requires new approaches to regulating risk levels, with the adoption of machine learning models, by establishing policies to achieve the desired results, monitoring these results to analyze discrepancies and also updating procedures or models for data collection in order to improving future results. For the long-term success, the sustained management of the processes of integration of the cognitive systems within the decisional processes of the organization is vital.

Due to the complexity and multitude of machine learning models, executives need to develop new knowledge and skills, with a higher level of analysis and integrity, which will allow them to determine potential errors and the degree of risk that can be taken at the decision-making level.

In the conjuncture of cognitive technologies, it is necessary to create professional functions to build and manage data strategy, respectively chief information officer, chief data officer, chief digital officer, chief analytics officer.

If we refer to the financial system, it will face the potential offered by the new business models because it is developed in a classic way based on extended regulatory structures. The new operators have developed operationally efficient business models through which they reshape the customer experience towards automatic interactions in the online environment, interactions based on data analysis at an advanced level.

It is obvious that the dynamics of competition complemented by the efficiency of the business model, efficiency supported by the implementation of artificial intelligence, will generate the premises for a new resettlement in the banking financial market.

4. Strategic guidelines and methodologies in the process of making decisions based on data.

As we know, organizational culture can be explained as a system of values that encompasses both knowledge, skills, moral attitudes, individual habits and common rules that must be learned and respected by all employees of an organization. But, regarding the organizational culture, it was found that some managers have different perceptions on the tools of database analysis, which sometimes leads to a behavior of accepting or rejecting the benefits of such an approach. Practice shows that managers in smaller organizations are more inclined to base their decisions on analytical results compared to managers in large organizations, which causes them to remain more motivated compared to their counterparts in larger organizations.

Decision-making processes in parallel with the culture of taking responsibility for results and performance management systems largely influence the leadership role. In order to be able to create and implement analysis systems / processes, necessary for the generation of reports, organizations must have coherent, repeatable processes suitable for the analysis of large volumes of data on models specific to the activity carried out.

The analysis stage of a project for the implementation / development of an IT solution based on advanced data must include:

- analysis of the existing situation
- identification of the list of functional and business requirements
- analysis of existing business processes and proposing methods to optimize them by using IT tools

The strategic approach to the implementation of the analyzes is essential in order to achieve the desired results from a data-based perspective.

At the organizational level, a major concern is the adjustment of strategies to improve business processes.

The research phase for the implementation of business analysis projects is a sensitive stage because it is based on a series of uncertainties and repeated sets of requirements that are constantly changing which generates a high risk in the implementation and delivery of these implementations.

The main risk in the implementation stage of the advanced analysis process but also of artificial intelligence is generated by low data quality, the identification of appropriate data analysis solutions, the available analytical capabilities and, at the same time, the type of organizational culture.

The levels of internal bureaucracy within the organization and traditional structures of influence will be impacted by a certain change on hierarchical levels, which generates a new dimension of divergences in organizational structures that could create the premises for new innovation opportunities.

The level of conflicts in the organization can be reduced by adopting the decision-making process based on data and by increasing transparency among the staff involved. Data-driven culture offers long-term business sustainability in all areas of activity.

Taking into account the limitations found in traditional approaches to business process management, two types of methodologies can be identified that generate

speed for the adoption of new technologies, namely agile development and continuous development.

a) ***Agile Methodology***: Agile is a methodology used in IT organizations to build software or manage processes efficiently. The method involves organizing on inter-functional collaboration teams, in order to develop in a short period of time minimum viable products, which are tested with customers, which to improve and refine in quick iterations. Through the Agile methodology, it will be possible to speed up the redesign of business models, offering the possibility to remodel in a short time the strategy, the structure but also the analysis processes.

Agile is a strategic data management tool that has evolved beyond the development of software methodology or operations management. The notion of Agile is an approach that aims at the business model, the establishment of cross-functional teams that aim to collaborate to quickly achieve the desired result.

Business and IT inter-functional teams work on the principle of development and delivery because they can generate complex data analysis based on which the organization's management can identify the main business priorities in order to implement them quickly. The process of transforming companies to adopt organizational agility is in primary stages and is a long process. Even if the advantages are clear, the companies have not fully implemented agile structures.

A possible failure of agile implementation can be generated by cultural issues such as lack of coordination, work and protection of organizations, internal conflicts, issues related to the internal policy of each organization.

The digital economy requires an innovative attitude within the work teams throughout the organization, in order to maintain a high level of performance in order to develop and maintain the business on competitive levels.

In order to create agile organizations, executives must give autonomy to work teams to be able to act in the digital economy in a fast way. An Harvard Business Review study shows that adopting an Agile strategy is best for innovative companies (Rigby et al., 2016). Organizations like Spotify and Netflix were born agile and further developed this strategy, and companies like Amazon and USAA are working to move from traditional hierarchies to more agile businesses. Systems based on command and control by management work better in stable and predictable operations, but today's information overload has a high probability of paralyzing command centers, creating blockages.

To reduce the risks, Agile leaders implement the following actions:

- communicates the business strategy, constantly, to a wider circle of employees
- adopts the role of coach instead of commander
- develops and encourages communication between teams/departments

By implementing data management strategies properly, in order to automate processes and efficient consumption of sources, entities will have the opportunity to better respond to customer needs / requests, thus generating an increase in business and profit.

b) ***Continuous Development Methodology***: Originally designed, similar to Agile, although it does not involve the same special effort to create a removable construction, the software development methodology has a strong impact on the development of processes and business potential.

The software industry, in terms of continuous strategy development, relies on continuous software updates made according to requirements, which sometimes speeds up the entire construction cycle making it quickly available for delivery. Some companies adopt continuous development as a new methodology in the business process. The strategic implications of this methodology are: increasing productivity, conducting experiments in a larger number, shorter launch period, rapid error correction, maximizing technical development processes.

The objectives of the organizations are always correlated with the strategic options in different stages of development. The methodology of continuous data development allows a faster development of solutions regarding critical operational processes and through its use the development of new products is ensured. Establishing key performance indicators ensures the successful implementation of data management projects.

The integration of emerging technologies and the implementation of data analysis projects, create opportunities for the recognition of analysis tools appropriate to the change of organizational power at the departmental level.

The new type of organizational culture based on data and decision-making processes has a significant impact on structures in implementing strategic methodologies, the regulatory framework having a decisive role in integrating data-based tools, adopting new technologies and shaping competition dynamics.

The analysis of the two software development methodologies: Agile and Continuous Development, shows that the Agile concept accelerates innovation, being based on inter-functional teams, common responsibilities, process automation being necessary to create new sources and respond more efficiently to customer requirements.

Continuous data development allows faster implementation of data-based solutions, providing the opportunity to develop new products and critical operational processes that have a significant impact on the organization's objectives. Thus, in different stages of development of the objectives of an organization, the competent persons will be able to decide and will assume the correlated strategic options of the new technologies aimed at artificial intelligence.

The risks associated with technologies using artificial intelligence are mainly due to algorithmic biases generated by the lack of transparency of the models developed at the limit of current scientific research.

Thus, the implementation of artificial intelligence and the adoption of machine learning models raises questions about the relationships between technologies, organizational decision-making and some ethical issues, leading to a new approach and development of the leadership dimension in risk management and regulation. an ethical and strategic perspective at the same time.

5. Conclusions

Artificial intelligence has fundamentally changed the way we interact with each other, but also with technology or the future. Artificial intelligence has entered our lives through programs such as Instagram, Facebook, search engines, special ads for each user but also in other areas where we did not think it would be possible, namely cars that drive cars.

The benefits offered by these applications make these gadgets indispensable and it is difficult to imagine life now without artificial intelligence. On the other hand,

it cannot mimic emotion, it cannot understand you as a teacher, where you stumble to explain, or it can understand you when you have a bad day. Also, artificial intelligence cannot replace the acting game of the famous actor Morgan Freeman, for example even if his voice was used for the Waze application, nor the interaction of a mother with her child. Therefore, Artificial Intelligence improves the quality of services, it does not replace them. The reasons why artificial intelligence will not be able to completely replace people, but will only help them carry out their activities more efficiently, are complex.

Probably one of the biggest fears is to have robots instead of doctors, but medicine does not work that way, and the health system will continue to be dominated by doctors, who show empathy, can correlate information that may not be part from a basic package of questions, which can do certain queries and operations that robots cannot do with the exact same accuracy.

In this context, the problem of robots vs. humans was not raised, but only how robots can brilliantly complete the health system - for example, we mention the application in which you can enter your symptoms to suggest a diagnosis, but in the end it however, it is recommended that you consult a real doctor.

Artificial intelligence could not handle a case of missing persons. Of course, with its help you can search the databases with robot portraits, partial fingerprints, you can identify the fingerprints on the spot, etc., but they cannot replace a detective looking for a person and has the ability to ask questions necessary to build a case. And in this case, artificial intelligence comes as a complement, not as a replacement.

Artificial intelligence frees us from repetitive or meticulous tasks. It leaves us more time for other activities, it does not cancel our jobs. On the contrary, now is the time for each person to diversify their skills as much as possible, in order to be prepared in a way that is as versatile as possible in their field of activity. Artificial intelligence gives us space and time to excel and evolve. Therefore, we cannot be replaced by robots, but we have the chance to become super humans ourselves.

Creativity, talent, genius and the human mind cannot be replaced by artificial intelligence. Not only because it is not advanced enough, but also because we do not work so that we can make creativity an algorithm that will later allow us to learn what Artificial Intelligence means and we can give it a free hand. It looks like a vicious circle, but the reason is that we will continue to be the most creative species.

Robots cannot understand humor, sarcasm, situations that are exceptional, outside of their programming, that generate and determine predictable thinking that you can rely on. However, we will see major changes caused by the influence of AI, especially in the areas: Social Media, Administration, Marketing & Internet, Financial, Recruitment and human resources.

The data flows generated by the new digital economy have created a paradigm of business intelligence processes, thus increasing the potential of advanced and cognitive analysis tools, and with the reduction of implementation costs, large data structures have become a strategic asset make a difference in the face of competition.

At the same time, we can see that the internal culture of a data-oriented organization is strongly influenced by cognitive tools and advanced data analysis, which have the potential to change decision levels, future strategies, but also the structure and revenue streams.

The approach of the qualitative and quantitative development of the way of processing the analyzed data in decision making creates value at organizational level and favors the transformational changes on the long-term sustainability.

Another significant aspect is represented by the current legislation which is relatively deficient failing to cover the entire range of applications / developments etc. of artificial intelligence, in its entirety, given the dynamics with which it develops, but also its volatility.

Given the almost exponential development of what we can currently call the artificial intelligence industry, certain prudential legislative regulations at Community level are expected and urgently needed in this context, in order to avoid both a blockage in the development and progress of new technologies due to legislators in the field, but also one due to its lack.

Although the requirements are designed to apply uniformly to all artificial intelligence systems, in different contexts, their implementation will be done in a concrete way taking into account both the impact and the context of application specific to each.

A number of indicative recommendations have been developed at European level, which, unlike existing provisions and key requirements with specific use in a particular field, are not binding and therefore do not create a legal obligation. These recommendations aim to achieve a single digital market with a solid regulatory framework, in order to ensure an innovation-friendly environment.

In order for artificial intelligence to represent something more than a series of algorithms and technologies (robots, digital assistants, machine learning, etc.), it must serve the needs of customers and in order to demonstrate the need to use it, close collaboration with customers is required.

The labor market deficit of employees with digital and analytical skills can slow the progress of the implementation of artificial intelligence. In addition to the process of recruiting or developing data analysts and specialists in the field of artificial intelligence, of similar importance is the training within organizations of teams ready to apply, in their specializations, artificial intelligence techniques and innovate solutions with experts. in artificial intelligence. At the same time, the entire human resource must be encouraged, open to change and use the technologies based on artificial intelligence implemented within organizations. In conclusion, we can say that artificial intelligence is meant to streamline our work and life, through speed and accuracy provided we use it in a creative but productive way.

REFERENCES

European Commission (2019), *Ethics guidelines for trustworthy AI*, available at https://ai.bsa.org/wp-content/uploads/2019/09/AIHLEG_EthicsGuidelinesforTrustworthyAI-ENpdf.pdf, [accessed on 12th October, 2020].

Gartner (2018), *Annul Report*, available at https://www.annualreports.com/HostedData/AnnualReportArchive/g/NYSE_IT_2018.PDF, [accessed on 10th October, 2020].

Harari, Y. N. (2014), *Sapiens. A Brief History of Humankind*, Signal Books.

Harari, Y. N. (2018), *Homo Deus. A Brief History of Tomorrow*, Iaşi: Ed. Polirom.

Kaplan, A., and M. Haenlein (2019), “Siri, Siri, in my hand: Who’s the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence”, *Business Horizons*, 62(1), 15–25.

Rigby, D. K., Sutherland, J., Takeuchi, H. (2016), "Embracing Agile: How to Master the Process That's Transforming Management", *Harvard Business Review,* (94)5, 40–50.

Taleb, N. N. (2007), *The Black Swan: The Impact of the Highly Improbable*, Random House.

Winkelhake (2017), *Die digitale Transformation der Automobilindustrie, Treiber - Roadmap – Praxis*, Heidelberg, Berlin: Springer.