

ARTIFICIAL INTELLIGENCE BASED DIGITIZATION'S INFLUENCE IN THE ORGANIZATION

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ABSTRACT

Technological development of society in the economic digitization will have a drastic impact on the labour market and on the manager job functions in the organization. The influence of artificial intelligence and robotics carries with it both tremendous opportunities and threads of changes and even the disappearance of certain professions. As the Digitization revolution sweeps through societies and enters an organization, its role in shaping India's development and growth is bound to be substantial. For management, AI-based digitization holds promise as a catalyst to accelerate progress, while providing mechanisms to leapfrog traditional hurdles such as poor infrastructure and bureaucracy. At the same time, an investment in AI is accompanied by risk factors with long-term implications in society. The areas of AI application are diverse and the possibilities extensive: in particular, because of improvement in computer hardware, certain AI algorithms already surpass the capacities of human experts today. As AI capacity improves, its field of application will grow further. In concrete terms, it is likely that the relevant algorithms will start optimizing themselves to an ever greater degree maybe even reaching superhuman levels of intelligence. Furthermore, scientific risk analysis suggests that high potential

Damages should be taken very seriously even if the probability of their occurrence were low.

Keywords: Digitization, Artificial Intelligence, Management, Organization.

1. INTRODUCTION

In the linearly changing unconditional and complex business circumstances with new digitized technologies are rebuilding the root structure of the economy, organization's characteristics. The way we collide with an organization with the digitization of business has a major impact and implication for our society, business life, management and especially in the labor market and employment rate. Artificial intelligence (AI) will bring a challenging environment to the organization's management system, as it could be considered as the 4th Industrial revolution catalyst. The ability to ensure correct and timely analysis of the challenge and the ability to restructuring the management system in accordance with some new consideration and opportunities would act as the reason for the success of the modern management's organization. All technological innovation may have two types of effect on the labor markets:

- Direct replacement of employees from their previously performed job tasks;
- Demand increasing for those job roles which arise due to

technological progress.

Nowadays in-depth machine learning technology development tends to global automation in various fields and intelligent machines can execute more non-standard tasks like improvised efficiency of e-commerce projects in IT industries (or) managing production lines in heavy industries. This may lead to the emergence of reasonable concern about the complete replacement of human beings by intelligent machine systems in different job tasks. The artificial intelligence not only provides an opportunity to create added values but also a challenging job task to the manager. The organization's management should adopt certain training program, talent managing, strategy concentrating the tasks which need evaluation, judgment skills such as collaboration, creativity, and ability to experiment.

2.ARTIFICIAL INTELLIGENCE -E (AI) DIGITIZATION'S DEFINITION AND FUNCTION

The artificial Intelligence-based digitization is considered as the machine being able to imitate the cognitive human job tasks, it is influenced in various fields of management activity like decision making, allocation of resource, data interpretation, strategy development. The AI digitization is built by the following building block elements such as virtual reality, 360⁰ videos, Augmented reality, Immersive Reality, Mixed reality, superhuman level of intelligence as in Figure 1.



Figure 1: Building blocks of AI

The AI-based digitization which also executes the following function: expert system, designed to simulate the problem-solving human behaviour, machine learning. The ability of machines which compute automatically to refine its method and improvise its results and it gets enormous data. The encoding and decoding of natural and machine language processing, designed to know and analyze the language coded by the human and as the time of considering the base for speech recognition AI and finally machine vision which is algorithmic inspection and analysis of an image. The first one considers AI as a useful technology being helpful in decision making and managers should treat it as a colleague. The second group expects the merger between AI and human in order to improve humanity. The

third school of thought considers strong AI as a threat to humanity because it can take human jobs by automation of their working tasks. This group insists that AI developers should keep in mind ethical and social issues while creating intelligent machines.

3. EVOLUTION OF ARTIFICIAL INTELLIGENCE

Current scenario

In narrow, well-tested areas of application, such as driverless cars and certain areas of medical diagnostics, the superiority of AIs over humans is already established. Increased use of technology in these areas offers great potential, including fewer decision-making processes, fewer in cloud computing and in data analytics. There is also the threat of an arms race in which the safety of technological developments is sacrificed in favor of rapid progress. In any case, it is crucial to know which goals or ethical values ought to be programmed into AI algorithms and to have a technical guarantee that the goals remain stable and resistant to manipulation.

Midterm scenario

Progress in AI research makes it possible to replace increasing amounts of human jobs with machines. Many economists assume that this increasing automation could lead to a massive increase in unemployment within even the next 10-20 years. It should be noted that while similar prediction in the past has proved inaccurate, the development discussed here is of a new kind, and it would be irresponsible to ignore the possibility that these predictions come true at some point. Though progressive automation, the global statistical average living standard will rise; however, there is no guarantee that all people or even a majority of people will benefit from this.

Long-term scenario

Many AI experts consider it plausible that this century will witness the creation of AIs whose intelligence surpasses that of humans in all aspects. The goals of such AQIs could in principle take on any possible form and would influence the future management process in the organization in ways that could pose an existential risk to humanity. The future aspects of AI accounted for in Figure 2.

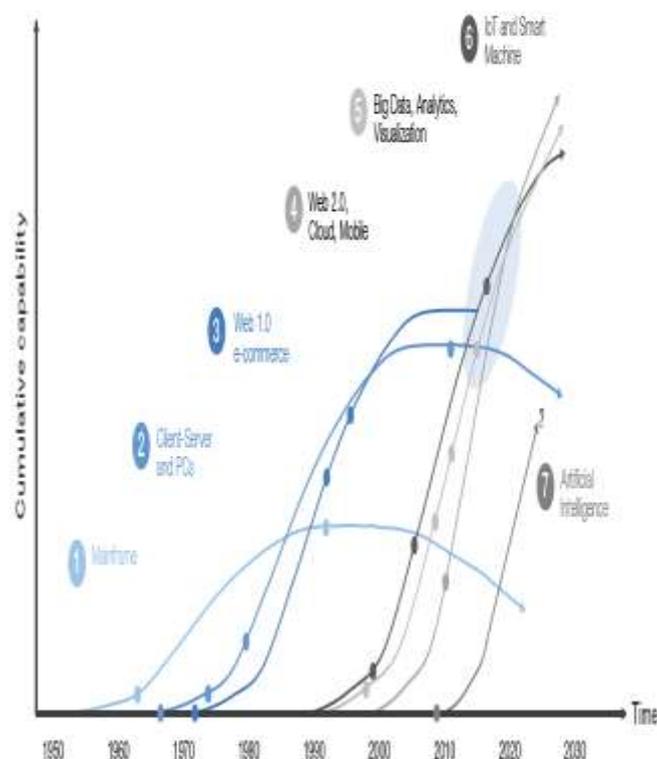


Figure 2: Future aspects of AI

Moreover, the possibility cannot be excluded that AIs also develop phenomenal states- i.e. Self-consciousness, and in particular subjective preferences and the capacity for suffering in the future, which would comfort us with new kinds of ethical challenges. In view of the immediate relevance of the problem and its longer-term implications, consideration of AI safety are currently highly underrepresented in politics as well as research.

4. RESEARCH METHODOLOGY

For our study, we use a mix of primary and secondary research. In the initial stage of the study we collected data regarding main trends of modern management, managers' job roles and AI application in management through the primary research using Delphi method using 3 iterations with Key Industry Participants (KIPs) which are the representatives of system integrators and market-leading companies in different industry verticals. During the second stage, we used secondary research collecting the big massive data from different competent data sources such as technical journals, trade magazines, independent studies, and paid data sources. In order to reveal the impact of AI on management we have assigned weight to the following factors:

- Managers job roles trends
- AI application industry trends
- AI market drivers

The weighted average formula is the following:

$$\text{Weighted Avg}_x = w_1x_1 + w_2x_2 + \dots + w_nx_n$$

W = related weight
X = value

5. ANALYSIS AND FINDINGS

For the AI application in modern management study, it is important to discover how managers see their main job tasks and how much time in percent they spent on performing each of them. The managers segregated certain of their job tasks which they want to be a job function of AI.

	A	B
1	Job Task	Time Period (%)
2	Co-ordination & Control	23
3	Decision Making	20
4	Reporting	15
5	Scheduling & Planning	10
6	Crisis Handling	9
7	Strategy development	8
8	Data analysis & Interpretation	8
9	Resource Allocation	4
10	People development & Development	3

Table 1: Time spent by managers for their job tasks performance

Managers spent 47% of their working time on such routine job tasks as coordination and control, scheduling, planning, and reporting. Figure 2 reflects the percentage of managers who are ready to transfer some of their job functions to AI.

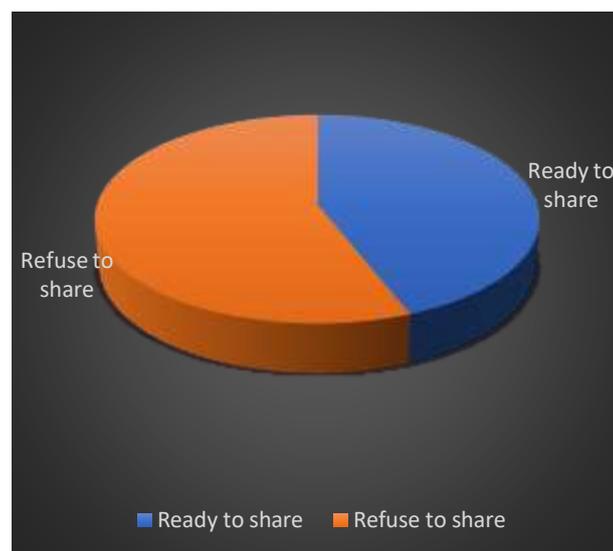


Figure 3: share of managers who are ready to transfer some of their job functions to AI

The share of managers who are ready to transfer some of their job functions to AI in terms of their specific job tasks is shown in Figure 4.



Figure 4: share of managers who are ready to transfer some of their job functions to AI in terms of their job tasks

Only 8% of managers are ready to delegate people's development and coaching to AI. 67% are ready to transfer to AI allocating resources, 24% - strategy development, 84% - data analysis, 26%- problem solving, 82%-scheduling and planning, 73%-reporting, 32%-decision making and 56% - coordination and control. Figure 4 shows the ratio of conditions under which managers are ready to transfer some of their job functions.

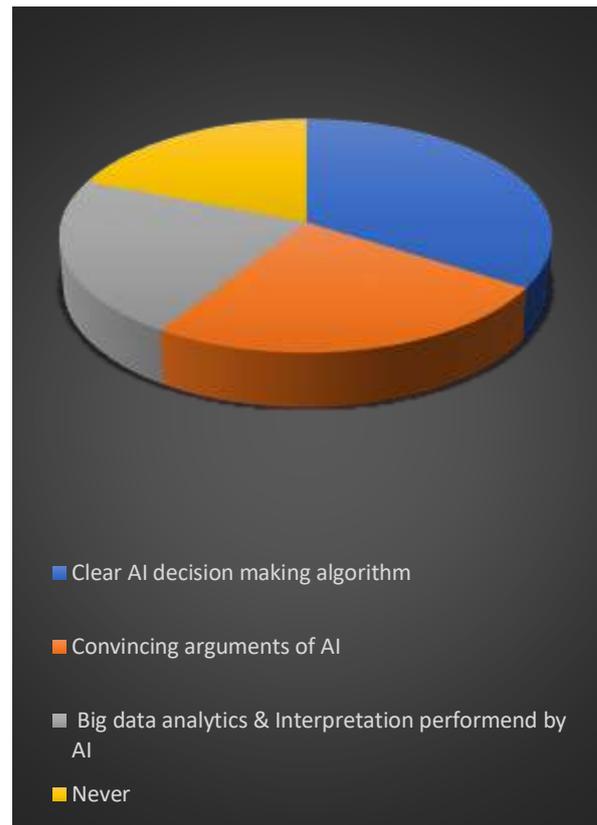


Figure 5: Conditions under which managers are ready to transfer some of their job functions to AI

The percentage of managers that selected the given skills as the top 3 skills they will need in the next 10 years is shown in Figure 6.



Figure 6: Most requested managerial skills in the next 10 years

6. DISCUSSION AND CON-CAUTION

According to the research, managers spent 47% of their working time on routine administrative job tasks. Most of these tasks like scheduling, reporting, allocating resources, data analysis could be transferred to AI in the nearest future. Managers in general support this transfer. In particular, 73% of managers are ready to transfer their reporting functions to AI, 82% are ready to transfer scheduling and planning and 67% are

ready to transfer allocating resources. 84% of managers are ready to transfer data analysis job function to AI which seems very logical due to the fact that AI can analyze big amounts of data in a relatively short time. Such job functions as people development and coaching, strategy development and problem-solving managers are not ready to transfer to AI – 92, 76 and 74 percent respectively even though technically it can perform them. There as on is that those functions need not only able to analyze BigData, find correlations and choose decision options but also such skill as human judgment which is combination of intelligence, experience and certain level of expertise in business decision making. There are three types of human judgment:

- Abstract thinking which could be considered as an ability to operate with concepts beyond the usual reality. AI can perfectly function in terms of existing rules but can't go beyond the existing frame in planning, decision making or generating ideas. AI is not able to create a carsharing service in a society where almost everyone has a personal car.
- Context analysis. In case a human does not have enough information for decision making or this information is ambiguous he is able to take into account historical, cultural or interpersonal context. AI can make an accurate assessment of a candidate for the job position in terms of his competence and psychological characteristics but the results of such assessment can not take into account the potential interpersonal incompatibility with other employees or his incompatibility with the organizational culture. But at least AI could be trained in

terms of context analysis.

- The intuition which could be considered as an ability to make decisions without using logic or rational thinking.

As for the decision-making job function which 32% of managers are ready to transfer to AI, it should be mentioned that there are 2 ways of business decision making – rational way and intuitive way. The rational way is based on data analysis by means of logical algorithms and choosing alternatives by means of rule-based methods. That means that AI can make business decisions based on this way. The intuitive way could be considered as an emotional judgment based on previous experience, implicit learning, creative thinking, and imagination.

Digital technology usage skill is not included in this classification – it is a basic skill which is necessary to work with AI. Routine skills, in general, are necessary to perform routine job tasks that could be transferred to AI in the nearest future. Summing up, we can say that the rapid development of AI will seriously change the labor market structure, but it will not be able to completely replace a manager because it is impossible for AI to acquire individual judgment skills and social skills. It will not be able to make decisions based on intuitive way.

But it will take over routine job functions from managers and will help them to make the right decisions in time by means of Big Data analysis. This means that the requirements for managers will not remain unchanged - they will have to reconsider their approach to work, thinking, and making decisions. Taking into account the fact that AI will take over routine job tasks which 47% of managers' working time will need to focus on other job tasks that will require

for example such skills as creativity-managers will work more like ideas creators. Also they need to train their personal judgment skills in order to perform their business tasks and make the right decisions at right time. Ability to collaborate with other people, create professional social networks in order to engage collective judgment for solving their business tasks will be necessary to perform as a manager. Managers should also be able to use various digital technologies to accumulate knowledge and judgments of partners, customers, external stakeholders, as well as to search for “best practices” in other industries. And finally manager should be able to collaborate with AI and even treat it as a colleague because it can make almost ideal rational business decisions which can help the manager in case when exactly rational decision is needed.

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