# THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE DEVELOPMENT OF AN AUDIT PLAN FOR ORDERS IN THE AUTOMOTIVE INDUSTRY. A CASE STUDY.

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**Abstract:** The use of artificial intelligence is becoming more and more stringent in all industries in the world. The step towards digitization comes somewhat in line with what is desired in companies, human errors wanting to be removed as soon as possible and without impacting the day-to-day activity. A series of projects were opened after these two very difficult years of COVID-19, to solve a series of problems and work possibilities encountered when the activity was disrupted by remote work. Many things will be written about this period, in which several companies faced the lack of staff at their offices, and the daily activity was very difficult. From financial - accounting, audit, human resources and much more production, all these departments had to deal with a difficult way of working, digitization, the use of AI - Artificial Intelligence being the chance to resume the activity in other terms than the known ones so far. This case study was made using the data from a car company, where a series of economic processes was discussed and adjusted according to the criteria that artificial intelligence requires. We are dealing with the economic process of reviewing the existing stocks and analyzing what has been done, historically speaking, for a type of car - so that the supply can be done as efficiently as possible, how these aspects influence the way of working, in production, for the activity to be improved.

**JEL classification: C61, M15, M41, P41**

## 1. INTRODUCTION

These troubled years in the history of mankind, put us in front of some very complicated ways of working to be resolved, with technology that has not yet been widely accepted in Romanian companies. Time and what happened brought a change in terms of the optics that management in companies had, so that innovation, digitalization, the use of AI - artificial intelligence as well as RPA - Robotic Process Automation, are now terms that have become a "must" for them. The main objective of the audit is to improve users' confidence in the financial statements.

To achieve this, the external auditor must express his opinion on how the financial statements are drawn up in accordance with the financial reporting regulations present in Romania. The audit consists of a system of activities practiced by both auditors and other experts, who analyze the information received based on practical and theoretical knowledge and aim to provide assurance by formulating an opinion or recommendations. The involvement of IT systems in terms of auditing seems to have from now on a very big impact on the companies that choose to be involved in these activities.

The authors of this article found it quite difficult to analyze the procedures that needed to be completed and, if required, automate some of them, so the engagement of the business was fortunate. Two viewpoints were compared: one from an accounting standpoint (digital accounting) and the other from a production perspective (and this is the portion about digital production). Regarding the idea of digital accounting, according to Vial G. (2019), it has emerged in the world of accounting practitioners (it is now a common language), and Big 4 audit firms are investing significant resources in digitizing accounting processes to gain an advantage in the market. With this strategy, they can spot opportunities to enhance the business (Gotthardt M., et. al. 2019).

In the upcoming years, any organization that uses an ERP system will need to automate more and more of its financial procedures. This also applies to our situation, where the company wanted to continue operating despite the pandemic and tried to automate some of the processes already in place. The authors of this article had anxieties when beginning a modeling and implementation project of the economic process we are describing in this case study since employee engagement was very low and there was a high risk of job loss. A lot of collaboration options were explored, bringing up the argument that the need for personnel is so great that the loss of a job is not taken into consideration. Additionally, the goal to automate the factory's current procedures somehow continued the trend that the parent business started two years prior.

Regarding branch management (factories in 4 countries), this pattern showed very positive results, with the error rate sharply declining. If the steps taken are entirely the ones initially designed of two directions, namely an increased complexity of the managerial act as well as an increasing decentralization of activities in companies, we can speak to her about the importance of the managers of the companies in setting up these internal audit departments, whose purpose is to periodically verify the activity carried out by subordinates as well as the analysis of economic processes.

What is very gratifying is the fact that these companies want to make their economic processes more efficient, so the involvement of technologies that have

incorporated artificial intelligence is a desire that a number of economic entities tend towards. This is considered a great achievement, because it brings with it a series of improvements in terms of working with economic processes. Anyway, it seems that the automotive industry has a very big advantage in terms of the modeling of economic processes, the involvement of intelligent technologies helping them to overcome the COVID-19 period in an easier way. What we wanted to achieve was that the modeling of the economic process of producing some sub-assemblies for cars in the category mentioned above could be done using the implementation of AI and RPA in several stages of the process. Thus, the automation of the process reached almost 60% and the productivity increased, so that the sales orders recovered after the pandemic period.

The departments that were involved in modeling the economic process are the following: Logistics, Accounting, Quality, Production, Product Development, Shop Floor Management. Of course, the main link in defining the steps necessary to implement AI brought to the fore the collaboration between those who were responsible for execution, cooperation, as well as those from information (the part of special clients). In the below figure 1, you can see a flow of information, regarding the collaboration between the departments as well as where each of them had the least intervention.
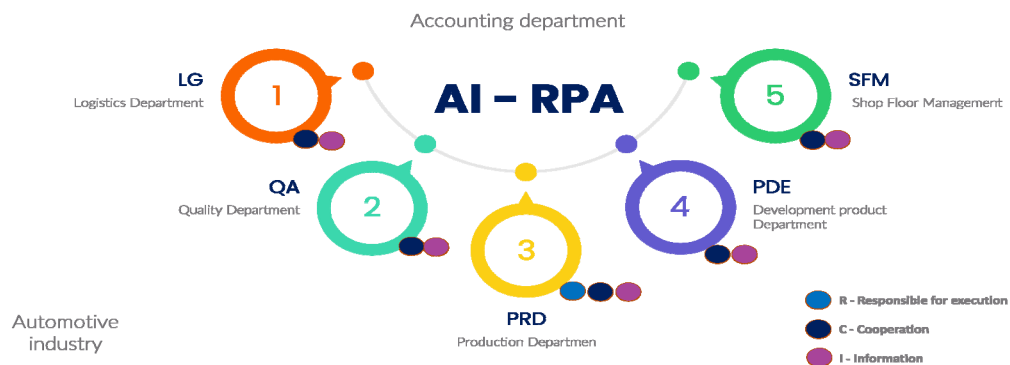


**Figure no. 1 – The link between departments for AI orders**

## 2. LITERATURE REVIEW

Concerning the study and supporting documents portion, after reviewing several articles, we observed that the concept "digital accounting" is described and used as a synthesis term, in terms of research efforts in the area of digitization and automation of economic processes based on emerging technologies (Quattrone P., 2013). As a result, we can conclude that the role of technology solutions is very well defined in both quantity and reporting (Güney A., 2014), (Ghasemi M., et al., 2011), (Janvrin D.J., Weidenmier Watson M., 2017).

Therefore, it is feasible to talk about the steady incorporation of new options for querying, storing, and displaying the audit-related data. Many of the data considered for this article are part of the actual running of the economic processes, with the errors that

appeared during their operation, how they were corrected and how they were remade to function as well as possible.

The specialized literature talks a lot about the possibility and desire of large companies to re-engineer and bring a series of tools necessary for this step - the digitalization of financial accounting, as well as the approach of intelligent ways of working. Regarding the area of digitization of accounting, there are a series of articles that mention this aspect, we recall here what he wrote (Pearson T., Singleton W. T., 2008), they mention the interdisciplinary area of this field existing in any company. That is precisely why any economic process must include someone from accounting, who, at a certain point, will come up with the necessary accounting vision for digitization.

The integration between accounting and information technology can only be beneficial for the business environment, as they are faced with almost daily changes in terms of intelligent technology. A series of aspects necessary for this adoption of such technologies are mentioned (Lehner O., Leitner-Hanetseder S., Eisl C., 2019), the main, integrated, way of working being the one that will bring benefits in the years to come.

### 3. ORGANIZING THE WAY OF WORKING WITH AI ORDERS – SCOPE

Perhaps one of the most nerve-wracking points regarding the adoption of smart technologies in Romanian companies, something seen in this case study, was that of working with the data necessary to re-adapt economic processes. It is very clear that the adoption of artificial intelligence can only be done if there is well-corrected data in the company, without duplicating them, so all in all, there must be a very well-defined and integrated master data.

Regarding the case study, which is discussed in this article, we were dealing with three important phases, which we will debate, the authors' desire being to find the weak and strong points in terms of the way of integrating intelligent technologies, such as artificial intelligence or robotic process automation.

Thus, in the figure no. 2 you can see a framework structure regarding the adoption and integration of an ERP-type system, in the present case SAP, in an organization, i.e. as it shows an implementation viewed from three angles (master data, organizational structure and transactional data), so that this is a successful one.
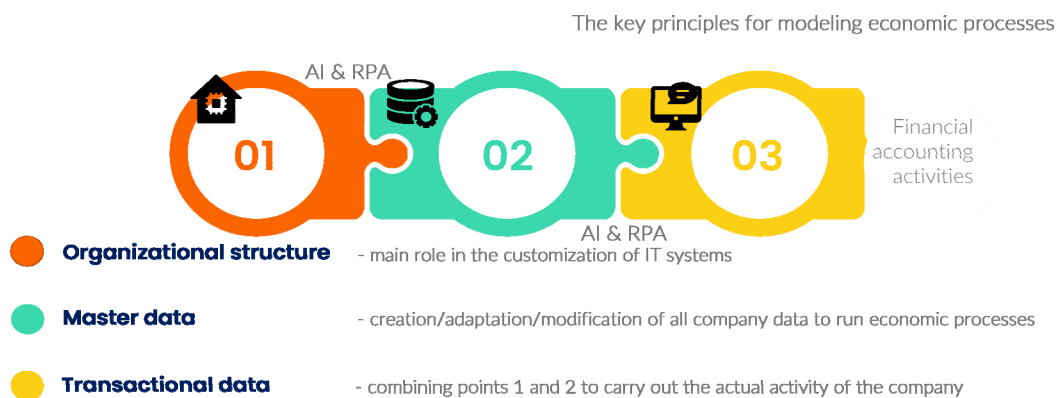


**ERP Organization model**

The key principles for modeling economic processes

AI & RPA

01    02    03

Financial accounting activities

AI & RPA

● **Organizational structure**    - main role in the customization of IT systems

● **Master data**    - creation/adaptation/modification of all company data to run economic processes

● **Transactional data**    - combining points 1 and 2 to carry out the actual activity of the company

**Figure no. 2 – The main three points for an ERP adoption**

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We will have three large work chapters, viewed vertically, from the input part (Input), the process processing part (Process), as well as the output part (Output). Each of these will have a series of stages (steps), as well as data to be entered by those who participate (as actors) in this process. For each part ordered, to go into production, it will have to be checked, as a history, to see if the respective mold still exists in the company, has the same characteristics and if it can be used (optimally) - that is, an automatic check will be made through the AI of that track's history. If it exists and can be used, it will be used (it will also be checked if it can be adapted according to the new requirements), if it does not exist, a new one will be created. The economic process behind this way of working with customer orders based on standard AI is described in the following figure 3.
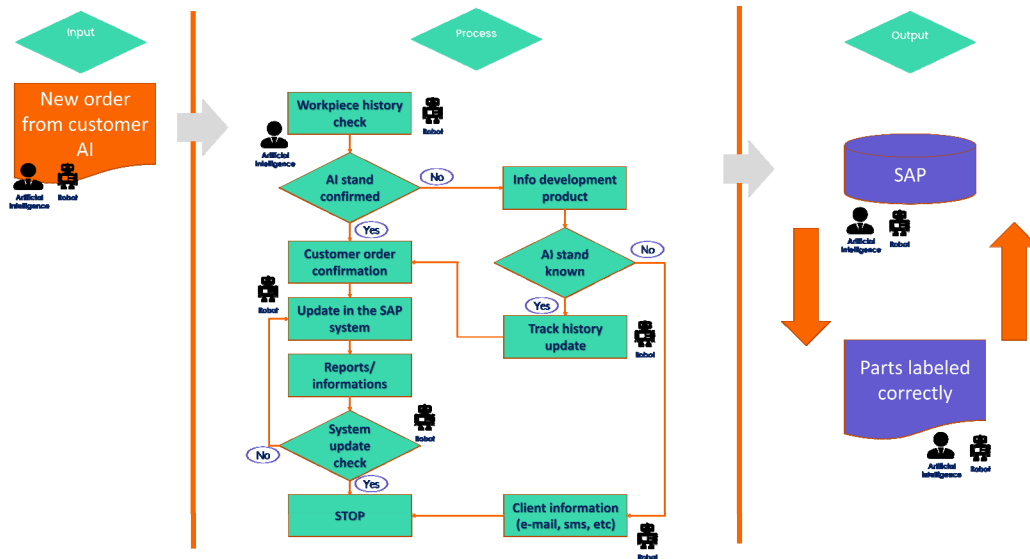


**Figure no. 3 – The AI stand process inside ERP system**

### 4. THE AI STAND WITH RPA IMPLEMENTATION

The detailing of the proposed solution for this implementation of economic process modeling (from purchases, production, and sales) had the main diagram the figure 3. As you can see, there was the connection of three main platforms from SAP (this was also the core system in the company, where all economic processes are used), namely SAP CAI (Conversational Artificial Intelligence) as well as iRPA (Intelligence Robotic Process) Automation). Following the analysis of a number of 17 frequently encountered mistakes, a number of 11 were corrected through automation, the other 6 remaining to be adapted later by rethinking certain steps performed, we mention here a few: the automatic generation of a bulk of invoices, if is the same customer, or the creation of automatic deliveries, based on the customer's delivery history. These steps (the two) can be automated, only that a connection with the other activities must be made, which also involves modeling the steps performed with other existing applications (we mention here the product packaging solution - used for delivery, or what generates the barcodes used). A subsequent project will have to be created to adapt the two solutions, because the elimination of some steps,

although automated, but not integrated, bring a series of lost times that also require manual (human) intervention.

## 5. CONCLUSIONS

The authors focused on finding the best implementation solutions for the economic processes in the analyzed company, to ease the work of the employees and reduce the errors occurring in the workflow of the process. As you can see, there are a number of activities that can be automated, the ultimate goal being to be able to overcome any period that may arise - we can mention here the COVID-19 pandemic, or even the war in Ukraine - that can disrupt the company's activity. The desire of its management will always be to increase productivity and to avoid delays, either when receiving and processing incoming orders, as well as in the production or supply process. Following the implementation of this automation, the errors in the order taking area decreased by 7%, in the production area by 12% and in the supply the results confirm that the agreement that the suppliers no longer receive the orders with delay is now done much faster. The use of RPA solutions - Robotic Process Automation has brought added value to economic processes, a series of steps being automated to bring increased efficiency to the processes themselves.

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