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“Possibilities of applying workflow automatization technologies

in the “Als Plus” organization”

Modern technologies of management

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**Introduction**

“Automation is cost cutting by tightening the corners and not cutting them.” - Haresh Sippy. This quote shows the significance of decreasing costs with possibility to further expanded opportunities.

Automation technologies are a vital component for companies looking to sustain their success in 2020 and into the new decade. Workflow automation is the process of automating human tasks, data, and file routing between individuals or systems. Businesses and individuals all over the world automate workflows because they see significant improvements in productivity.

The topic is relevant because everything that increases profits and reduces costs is important for the company. By automating the workflow, the team can avoid wasting time on processes that can be replaced. Workflows can help optimize and automate repetitive business tasks, minimizing errors, and improving overall efficiency. This can significantly reduce the time to complete the task, as well as reduce the costs. Workflow automation is simply a strategy to help the “Als Plus” company improve the business's efficiency, overall revenue, and operations.

The object of our research is “Als Plus”, which official partner of 1C and is part of the network 1C: Franchisee, 1C: ERP Center, 1C: Consulting, 1C: CORP. The company specializes in services of the introduction of ERP, SCP, and MRO industry solutions 1C. Organizations have more than 30 successful projects. “Als Plus” is a large team of experienced professionals who have been working on the market for more than 10 years. Company’s advantage in high-quality implementation, without reference to supporting. “Als Plus” is one of the best project documentations that meets all PMI standards. The company guarantees of execution of the project financially.

**Literature review**

With the rise of the Web as the major platform for making data and services available for both, humans and applications, a new challenge has become prevalent requiring the support of workflows management. This is a mature technology for automating and controlling business processes. Stoilov&Stoilova (2006) have made the famous observation that a general task of the development of the workflow system in the current business activities is the implementation of principles of the automatic control for business systems. For the implementation of workflow management, it is necessary to keep a common standard for the workflow service specification and modeling.

According to Georgiou (2020), a workflow automation tool can be an invaluable asset to your business. It not only helps you reduce time but also helps you improve efficiency and cut down on the resources spent on repetitive and manual tasks. Workflow automation transforms existing legacy and manual business processes such as approvals, claims, requests, assignments, sending out emails, etc., into a centralized, automated system. Tasks that require a lot of manual paperwork can be handled digitally in a systematic way.

An automated workflow benefits your business in numerous ways. One of the biggest benefits of workflow automation is that it improves internal communication. This reduces the rate of employee turnover because one of the biggest reasons employees leave an organization is a lack of communication with management. Johnson had highlighted in the article (2020), when the manager automating workflow it also automates the communication, because no one has to remember to tell the next person it’s their turn to do something. The best way to create an [automated process](https://tallyfy.com/guides/business-process-automation/) is to get everyone involved in that process together. Then you can begin creating a process map and visualize where the process begins and ends and what role each person in that process. By utilizing workflow automation, companies can reduce the number of manual tasks performed by employees, which frees them up to work on more important work. This allows more work to get done in a shorter amount of time and will likely boost employees' morale and increase overall productivity. Workflow automation reduces errors because it keeps necessary tasks from going unnoticed. Because every person involved in the process is held accountable for their specific role. Workflow automation also saves companies from costly expenses associated with employee errors and it can cut costs on administrative labor as well.

Our research-oriented study will consist of a solution to the “Als Plus” organization. The solution will be in the scheme of an automated workflow management system. In the study Stohr&Zhao (2018) describes the workflow management systems as a relatively recent technology, are designed to make work more efficient, integrate heterogeneous application systems, and support inter-organizational processes in electronic commerce applications. In addition, Sengupta&Zhao (2015) highlighted that due to cutting edge, virtual teams are increasingly used for a wide variety of tasks to achieve organizational flexibility and reduce administrative overhead. Such teams are versatile and adaptive in many ways but often at the expense of high communication and coordination costs.

**Hypothesis**

The hypothesis of the study is: The reason companies demand so much for automated workflow systems is that the success rates of companies increase due to these systems.

**Research proposal**

The research question of this study is “How likely are automatic technologies to be added within the company?” (evaluation of the survey results, employees ' opinions, and the level of consent to changes.) The research method is a quantitative and qualitative analysis of the survey, the essence of which is to get answers from employees to open / closed questions about the selected topic. The instrument would be Internet articles, online resources, and questionnaires through the Google Forms platform. The participants of the study will be workers of the “Als Plus” company located in Almaty. Participants will be of any race, ethnicity, or sexual orientation. The questionnaire will be created specifically for a targeted audience. Research keywords: workflow, automation, business, management, survey.

**Data analysis**

Fourteen questions were created for our questionnaire. Questions type is closed questions with multiple answers, the open questions, and the evaluation with the Likert scale. Our team collects 37 responses from the questionnaire. The questions are the following:

1. What level of management does your position belong to?
2. Are you satisfied with your company's automation systems/processes?
3. When it comes to automation, what are your expectations?
4. What aspect of the company do you think should be automated?
5. How is information exchanged more within the company and which method do you prefer more?
6. Please describe in your own words the main problems that the organization may face in connection with the automation of processes.
7. Do you think that customers may react negatively to certain changes in the company?
8. Evaluate the degree of personal readiness for changes and changes?
9. How do you assess the overall level of professionalism and moral/personal qualities of your colleagues?
10. Will your colleagues be able to transfer changes adequately and objectively in the company?
11. Do you think that the principle of automation is useful in everyday life?
12. Do you think that the automation system will be useful for self-development, education, and self-improvement?
13. Do you think that your capabilities will change after adding automation processes?
14. What do you think will be the effect of process automation on the company or you as a whole?

The main seven questions had been chosen for the analysis. The first question for the analysis is “Are you satisfied with your company's automation systems/processes?” It is a closed question with multiple four possible answers. Figure 1 highlights the results of the answers. 45.9% of respondents answered that they do need changes in the company. Both 27% of respondents said that they have some weighing to the answer or satisfied with the present work process. As the result, most of them answered negatively which confirms that the company needs to change.

Figure 1. 2nd Question from the questionnaire.

The second question is “When it comes to automation, what are your expectations?”. It helps to recognize the expectations about the automation process at work. It is an open question, so the answers consist of the following opinion such as (Fig. 2): automation helps to faster the work; the company can keep and analyze more data; automation of processes without human activity; allows to avoid unexpected problems; control accuracy can be improved and enhance the quickness decision-making in typical situations. For successful automation, all the company's key business processes must be integrated into a powerful single system.

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| Responses to the third open-ended question |
| I expect that there is a chance of cost reduction. In my opinion, if we consider the technical side of the issue, this may have a greater impact on increasing the speed of work. |
| Progress of the company |
| It is necessary to involve competent consultants for a comprehensive analysis of the process and its optimization for the best possible outcome of events |
| Expanding the customer base by improving quality |
| Due to the automatic mode, the same tasks can be performed faster, because automated systems are more accurate in their actions and are not subject to a decrease in performance from the time of operation |
| Growth of the production efficiency indicator |
| Fast work process |
| The key idea of using automated tools is to effectively work with all data about the company's customers, tasks, and services/products, as well as automate certain actions that can be performed without human effort. |
| Increases the speed of performing repetitive tasks. |
| Digital transformation and automation should be supported and promoted by the top management of the company; much depends on the quality changes. |
| This will expand the company's capabilities by increasing the speed of work. |
| High, only to implement changes, we need to create a team consisting of specialists, as well as inspire employees themselves, and to analyze or test the work. |
| This will speed up our work. |
| Reducing the number of erroneous business operations |
| Top managers get more information for analyzing business processes in the form of detailed analytical reports |
| This will create an effective quality monitoring system |
| For successful automation, all key business processes of the company must be integrated into a single system. |
| Automation will help reduce the time and cost of routine work |
| Improves process performance and avoids inconsistencies at important stages. |
| High due to quicker decision-making in typical situations. |
| I think that the control accuracy will increase. |
| I think it will eliminate the losses associated with the critical timing of implementation |
| In my opinion, this will increase the overall efficiency of the company |
| Organization of a reliable system designed to control the quality of manufactured goods |
| Improving the efficiency of the company |
| Increase sales, the number of products produced and increase the profitability of the entire business |
| Process optimization and acceleration |
| Improved accuracy and efficiency |
| Increase the speed of decision-making, increase the variability of processes, and reduce the number of employees involved in the process. |
| Due to the use of information technologies in automated systems, it is possible to save and consider more data about the process than with manual control |
| The expectation is that the company will increase profits by accelerating the execution of business processes. |
| Optimizing the use of resources |
| It is obvious that in the current environment, best practices are derived from modern software solutions that allow you to automate routine operations and speed up the process of obtaining the necessary data to make the right management decisions. |
| The rapidity of business processes |
| Effective support of the company's operational activities, organization of accounting and control |
| Automated systems allow you to perform several actions simultaneously without losing the quality and accuracy of work. This speeds up the process and improves the quality of results. |
| This will make business processes as simple and clear as possible |

Figure 2. 3rd Question from the questionnaire.

The third question is “What aspect of the company do you think should be automated?”. It is a closed question with multiple four possible answers (Fig. 3). The answers to this question point out the department, which should be changed in the first place. According to the figure, the Administrative department has the highest 37.8%, which includes, for example, the HR recruitment process or coordination of significant information.

Figure 3. 4th Question from the questionnaire.

The fourth question is an open question: “Please describe in your own words the main problems that the organization may face in connection with the automation of processes?” Figure 4 can help to indicate the main problems, which were described by the respondents. The main of them is the threat of overload of an information system that leads to delay in operation; financial difficulties or training of employees.

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| Responses to the sixth open-ended question |
| Staff resistance to changes caused by reengineering due to insufficient motivation |
| There may be problems with information systems. Due to the huge flow and load of information systems, it is possible to malfunction and suspend work. |
| Employees ' failure to accept changes in business processes |
| Flawed technology |
| The problem may be the need to train staff to work with new systems. |
| The high degree of uncertainty and risks |
| The introduction of process automation technology, which has been gaining popularity in recent years, has a certain competition |
| Lack of understanding of the essence of technology and how it will be used in their process. |
| A temporary increase in workload during the implementation of the system |
| Problems related to technical limitations, as well as the development of the information systems market, imply significant costs for automation in the future. |
| The problem may be an unfavorable result |
| The reason may be poor project management |
| One of the most serious difficulties may be the lack of motivation of staff to change the business patterns. |
| If there is no description of the existing business processes, it is difficult to automate them. To facilitate this work, you should analyze and display all the processes in detail. |
| They may face the fact that the project may be "under-tested" |
| Large financial costs |
| The loss of time to the explanation of innovations and changes in general. |
| Problems that arise at various stages of project implementation are related to the specifics of these stages. They can significantly affect the overall result of project implementation. |
| Customers may not be comfortable with our new changes |
| Financial difficulties and risks. Will they be justified? |
| The most common problem when robotizing a business process is a lack of understanding of the essence of the process and its steps by performers. Very often, when analyzing the process before starting development work, entire blocks of operations are found that are not optimized or involve performing a large number of unnecessary actions. |
| Need for the partial or complete reorganization of the enterprise structure |
| Fear of certain newness and changes in employees |
| One of the main problems may arise in the fact that employees will be distracted from work by information about innovations. |
| Insufficient level of financial capability |
| From a technological or economic point of view, some process operations can be very difficult to automate. |
| Lack of qualified personnel |
| Increase in the unemployment rate due to people leaving as a result of the replacement |
| Any innovations require time to learn and adapt. As mentioned above, this always causes a certain rejection among employees. Fear for their work, unwillingness to change established practices, unwillingness to learn, fear of new things - these are the traditional attributes of any internal corporate changes. |
| Most likely, the weak motivation of the staff |
| Technical delays, overexertion of the information system, which in the future may lead to a weakening of the overall system |
| This problem can be caused by adapting the process for key performers |
| Not a good time due to the external environment |
| Limited access to high technologies due to their high cost |
| The problem in staff resistance to changes caused by reengineering due to insufficient motivation |
| When switching to new processes, more effort will be required from employees. We need to maintain operational efficiency and simultaneously switch to new operating rules. |
| Psychological difficulties that may arise for employees |

Figure 4. 6th Question from the questionnaire.

The fifth question is the Likert-scale question: “Evaluate the degree of personal readiness for changes and changes?” However, the answers were visualized as a bar graph (Fig. 5) That question helps to understand the personal readiness to changes of the employees. The positive dynamic in the positive side of the degrees. The readiness of workers can be asserted by those answers.

Figure 5. 8th Question from the questionnaire.

The penultimate question is the Likert scale question: “How do you assess the overall level of professionalism and moral/personal qualities of your colleagues?”, which demonstrates the readiness to changes of colleagues due to their professionalism and moral qualities. There is also a positive trend here. (Fig. 6)

Figure 6. 9th Question from the questionnaire.

The last question of the data analysis is “What do you think will be the effect of process automation on the company or you as a whole?”. The answers indicate the potential effect on the employees or the company from the changes in the automation process. Responses range between 4 points and 10 (Fig 7).

Figure 7. 14th Question from the questionnaire.

The chart shows the percentages on the vertical side, the selected scores on the horizontal side, and the number of people in the total. Besides, there is also a positive trend here.

Figure 8. Main stages of the “Als Plus” company.

Moreover, the general stages of the company were highlighted (Fig.8) First stage can be described as specialists of the developer company, together with representatives of the enterprise, analyze and describe existing business processes, as well as develop proposals for the methodology for configuring document types and document flow in an automated system. This stage is very important, because it determines the technology of all subsequent implementation, considering the specifics of the enterprise and the planned date of launching the enterprise management system into commercial operation. This step describes the goals. The second stage consists of choosing a standard solution or several standard configuration solutions that will be the basis for implementing 1C. At this stage, based on the results of the survey (analysis of the capabilities of standard 1C) agrees with the customer the choice of a standard solution. The third stage can be characterized as the preparation of a document describing the model of the future system based on a standard solution, an implementation plan, and commissioning of the system. The fourth stage is the completion of functional blocks, converters, reports, and technological procedures are made based on the results of the survey and the basis of the technical specifications. The fifth stage is installation, configuration, final verification, and preparation of hardware for subsequent work. The penultimate stage can be defined as training the company's personnel to work with the system, to consolidate skills for the subsequent stages of implementation and industrial operation. At the last stage, the specialists of the developer company together with the customer's staff conduct test tests of the system. If alerts are identified at this stage, the system is updated accordingly, and then it is prepared for commercial operation.

**Conclusion and recommendations**

We, as observers, clearly see the flaws in the business processes of “Als Plus” LLP. According to the following stages, we can suggest the first recommendation to the first stage of creating a “Brief” document with questions, which can be collected online. This will help to optimize the work of the recurring task. Our team can help to automate the sixth stage too. At present, the company has training through offline and online conferences for more than 100 workers. There is 2 type of conferences. There are general training and specific department training. The second recommendation for the company is to record basic videos for the employees, which can be sent constantly via email. It will save many hours. The third recommendation from us is to create chat-bots, which would be a powerful tool. The work of chat-bot can be characterized as technological assistance, which will send video training upon the request, will answer the most frequent questions, and support each employee. Besides, our fourth recommendation is to create a company’s Wikipedia (“Als Plus Wiki”) to concentrate all meaningful knowledge into one complex holistic system. Wikipedia can include not only information for the clients but also training guidelines for new employees of the “Als Plus” company. The interview and recruitment process can be partially automated by a chatbot because it can collect responses from applicants. Besides, corporate culture principles and remarkable organization issues can be demonstrated within company Wikipedia. That recommendation can be consider as automatization of the administrative aspect. In addition to that, the marketing department's automatization is considers too. Marketing issues can automates by chat-bots too. On the company’s website or via social media, a programmer can install that technology by purchasing a chat-bot program. This technology will help the company respond to customer questions and requests faster. Also, there are consultants in the company. in our opinion, if you replace them with chatbots, the workflow will speed up more. With this chatbot, it will also be easier to collect customer reviews. If the chatbot sends all responses to one database, and the marketing department can quickly analyze shortcomings and correct errors.

An example of an HR workflow will be done as illustrated in Figure 9.

Figure 9. New suggested recruitment process.

We create the following points for increasing the efficiency of the “Als Plus” company:

- Hire a videographer for the project who would professionally record training lessons for both client employees and company employees.

- Give the programmer a task to find proven programs for working with chatbots. Research the pros and cons of implementing this technology.

- Give the task to marketers-create a script for communicating with the client, as well as creating a FAQ.

- Assign the programmer to create a Wikipedia database on the company's internal website.

- Give tasks to operational managers, create guidelines for work, and important business of the company for Wikipedia in MS Word. Put all the information on Wikipedia.

Finally, according to the analysis of answers, the company can be ready for the changes, which prove the possibilities of applying workflow automatization technologies in the “Als Plus” organization. The success rates of companies increase due to automation workflow. The hypothesis is approved. There is a relationship between automated workflow and successful management performance within the company. Consequently, by creating new integration, the company will optimize the workflow and it will influence the performance of the company.

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