

WORKPLACE AUTOMATION AND BUSINESS PERFORMANCE

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ABSTRACT

Digitalization has been bringing about various changes and innovations not only in our daily life but also in our business environment. In the manufacturing industry, robots have been used for automation for a long time, resulting in innovation in terms of the faster operation process and higher product quality. Robotics Process Automation (RPA) can be said to have brought this innovation in the productivity improvement of many industries into the business office. The purpose of this study is to improve business productivity by applying RPA named Correction Process Automation (Co-PA). It is based on Domain-Specific Languages (DSLs) and Model-Driven Engineering (MDE) coupled with MS Office. Co-PA has been replaced to perform the repetitive patterned tasks (especially documented work) done by many people in an office. For the applications of business productivity, Co-PA has been implemented to revise five government project proposals requiring quite strict writing standards. The improvement of business productivity obtained by Co-PA has been compared to the performance of 10 employees who are familiar with MS Office. The paper explains the method of Co-PA coupled with MS Office as well as the agile method of human collaboration. It is clearly shown that Co-PA as a business RPA can improve business productivity in terms of time consumption and document quality.

Keywords: Business-automation, Robotics Process-automation, document, correction process automation and software bots

INTRODUCTION

Automation in the workplace can free up time of workers activities that they use to focus on more business-critical work, work automation and productivity lead to improved workers satisfaction and engagement in the organizations which increase productivity. Workplace automation is a technology that automates time-consuming manual work like data entry or lead nurturing; it is automation software that uses rule-based logic to automate manual work such as sending follow-up emails. Workplace automation is an easy way to save money, boost productivity and improve work experience by eliminating tedious and time consuming tasks. For business to get the most out of workplace automation, it is important to understand first what workplace automation is, how it works and the benefits it offers.

Workplace automation tools are increasingly popular in recent years. They are software and applications that allow companies to automate processes and integrate all of their business uses. In other words, it eliminates manual processes in their management practices within a workflow to increase productivity and save time from countless repetitive tasks daily. The productivity of business document work is the one of core tasks for a company's business. It is due to that document automation using RPA will reduce the time and costs corresponding to manpower for correcting documents. It is expected that both work productivity and document quality will be improved if an alternative Robotic Process Automation is introduced to document work with such patterned work. Robotic Process Automation is a digital transformation which refers to the conversion of human jobs in terms of repetitive and patterned tasks to an automatic computer process; it is a computer process that does same work like a human's cognitive work. The aim of Robotic Process Automation is to make workers be concentrated on higher priority work and creative tasks besides low-value-added tasks.

Robotic Process Automation has been implemented on various tasks to maximize productivity in the fields of production, sales, purchasing, finance, and employee management. The financial

sectors are one of the most actively adopted Robotic Process Automation where chat bots are utilized to automate simple repetitive tasks. The chat-bots can manage customer response and customer service using personalized Robotic-Advisor, both medical and legal circles are also actively involved in Robotic Process Automation and they are producing same desired results, example of Robotic Process Automation in the medical field is automated medical appointments according to various variables including doctor availability based on location and treatment attainability as well as financial statements and insurance information.

Robotic Process Automation is introduced to improve productivity in various fields and to improve productivity in the fields of business operations especially documentation as such the main reasons is that all business filing tasks are assumed to require the cognitive judgment of humans, in human judgment is only necessary to determine the direction and logic of the business document.

Furthermore, there are still repetitive works especially on document revision in terms of both editing and design, the productivity of business document work is one core task for a company's business. It is due to that document automation using Robotic Process Automation will reduce the time and costs corresponding to manpower for correcting documents. It is expected that both work productivity and document quality will be improved if an alternative Robotic Process Automation is introduced to document work with such patterned work. In addition, it will produce a more thorough document with a lower cost if an alternative RPA system is applied for documentation jobs.

Emergence of Robotic Process Automation in Business

Digital labour is replacing workers in the process of using various technologies of the fourth industrial revolution, such as big data and Artificial Intelligence (AI), in overall corporate management. This could mean that digital labour communicates with workers in natural language as a new form of labour. A German company named 'Zurich Insurance' is an example of the introduction of Robotic Process Automation to significantly improve productivity. In 2014, employees of this company had to work on dozens of documents such as hospital certificates and traffic accident statements submitted by customers to pay insurance payments and 37 out of 81 employees were in charge of repetitive and patterned tasks. Zurich Insurance introduced Robotic Process Automation to handle 51 processes for insurance contract confirmation and compensation payment. As a consequence, twenty-seven human workforces have been relocated to improve service quality work that can increase customer satisfaction as a human labour role in enhancing added value.

Spectrum of Digital Labour

Many organizations are promoting automation in Production, which are Sales and Purchasing, Finance, Human Resources (HR) and Information Technology (IT) by using Robotic Process Automation across the value chain to improve business performance. For example, data input, e-mail reception/sending, report writing, etc, as well as sales reports linked to the computer system and market trend collection can be performed. In financial sector Robotic Process Automation is most widely used; it is applied to banks' non-face-to-face customer response services and insurance organizations' customer relation management and contract management. For repetitive inquiries, chat-bots and Robot-Advisors are used for customer services such as retirement pension design, investment portfolios, funds, money laundering monitoring, cyber-security, etc.

In particular, Robot-Advisors use Natural Language Processing and social recognition algorithms of external distribution information based on internal corporate data. It delivers personalized customer services including easy account setup, robust goal planning, account services, portfolio management, and security features, attentive customer service, comprehensive education and low fees in investment decision-making and asset management fields. As a result of using Robotic Process Automation, financial companies could reduce the cost reduction by 20-30%. Robots are continuously used for patterned and repetitive tasks to improve productivity in every field. It can be noticed a trend that Robotic Process Automation is to minimize human action for automation

of simple and repetitive tasks while Intelligent Process Automation (IPA) is increasingly used for the minimization of human judgment work. The use of business documents is to share business strategies and information including creative ideas and human cognitive judgment. Therefore, the business document, especially project proposals, is thoroughly created and completed by substantial labour forces under an agile working environment. This working system can cause frequent human errors and also the quality of the document is eventually degraded. Therefore, alternative methods will be required to make automated project business document corrections in both editing and design layout, the project proposals especially for public government require a strict rule including structure, term-word correction, etc. It will be promptly rejected that the documents do not comply with the writing standards shown in Request for Proposal (RFP). It can be one of the solutions that can reduce the risk of rejection. Correction Process Automation (CPA) is also another automation to improve the productivity of business documents for both editing and design of documentation which is type Verification, Table of Content Verification, Font Standard Verification, Table Layout Verification and Schematic Diagram Layout Verification.

Purpose of the study

The purpose of this research work includes the following:

To determine the impact of workplace automation in Business Performance.

To examined how workplace automation can influence Business Performance.

Conceptual Review

The following concepts were briefly discussed to reflect their contextual meaning in the research work:

Concept of Workplace automation in Business Performance

The term automation in the workplace covers technologies that help reduce human intervention in processes. It comes in many forms, such as robotics, computerization, artificial intelligence and mechanization. Automation has always been driven by the desire to get more done, reduce costs, and limit the possibility of human error. Work automation means employing technology to replace human labour in nearly every corner of a business's operations – from hiring to email management to accounting, through business automation, organisations can simplify and optimize workflows. Automation in the workplace can free up the time of employees that they can use to focus on more business-critical work. That said, work automation and productivity can lead to improved employee satisfaction and engagement in the organization and increase productivity.

Automation Software tools that Boost Business Performance

Workflow automation tools are increasingly popular in recent years, they are software and applications that allow companies to automate processes and integrate all of their business uses. In other words, it eliminates manual processes in their management practices within a workflow to increase productivity and save time from countless repetitive tasks every day, these tools are as follows;

Expense Report Software Tools

Expense report software helps organizations streamline and automate the management and tracking of business performance – from receipt scanning to payment processing, with the possibility to obtain paperless expense reports, do automated expense reporting, and streamline expense reimbursement, employees can save time and focus on much more critical tasks.

Expense report software provides increased visibility of employee spending, improve compliance with corporate spending policies and help organizations budget and forecast for the future.

Project Management Software Tools

The need to properly quantifying and delegating tasks is of high importance, using project management tools which is an active way to track progress and manage time for successful projects, with the aid of project management software tools are available and increases business performance

Sales and Marketing Automation Tools

Sales and marketing automation is the technology that automatically manages marketing operations and multifunctional campaigns across various channels. To personalize customer interaction, most businesses today use these tools to automate the classification and segmentation of customer data. This way organizations target customers with automated messages across email, web, social and text. The result supports organizational marketing efforts with lead generation, nurturing, scoring and measuring overall business performance.

Customer Service Automation Tools

Customer service has gone through a dramatic shift in the last few decades, with many channels (phone calls, emails, texts, chat windows and social media interactions) requiring management. Automation in customer service is today most visible tools.

Data Integration Tools

Data integration tools bring in data from various sources into one central platform; perform the most critical function – simplifying data, the goal is to provide users with a real-time view of business performance. Simplified data promotes efficiency and ease usage, as a strategy data integration is the first step toward transforming data into meaningful and valuable information, easily accessible to managers and also used in forming long-term business decisions.

How Automation Helps Business Performance

Automation in business performance relieves organization of ordinary and repetitive tasks, it allows them to work on their talents, learn to scale existing operations and manage the automated software. Workplace automation benefits employees in many different ways to deliver very tangible impacts on productivity within business operations; here are some reasons why automation is good in a workplace business performance;

Saves time

Using digital technology to perform and complete tasks automatically means saving time since functions are not completed manually. Some examples include data integrations and marketing automation software.

Boosts productivity

Automation does not only streamline business processes; it also boosts internal productivity, teamwork no longer needs to spend time on repetitive tasks such as manually inputting data or searching across multiple systems to find the information needed.

Increases employee engagement

Employee satisfaction and engagement will significantly increase once released from time-consuming tasks (like data inputting). They need to check the system now and again to ensure everything is running as it should. That means more time back to focus on tasks that make a difference.

Lowers operating costs

Most Organization sees an increase in operating expenses as they grow. More transactions mean more administrative work. With automation, the economy of scale can make a significant difference. The software can do in seconds what an employee may need several days to complete.

As you win more business, automation lets you handle the increased workload with your already available resources.

Improves service delivery

By shortening cycle times with process automation, businesses can drive opportunities to up-sell, increase client retention rate.

Faster return of investment

Automation solutions must be based on your business's unique needs and goals to pay off. Above all, they need to pay for themselves quickly due to lower operating costs, reduced lead times, increased output and more.

Ability to be more competitive

Automated factories allow you to decrease cycle times and cost-per-piece while improving quality, that will enable your company to better compete on a global scale.

Increases production output

Software can work at a constant pace, which is at higher production rate; automate new products which can be quickly introduced into the production process and new product programming can be done with no disturbance to existing operations.

Allows better planning

Consistent production and increased outputs secured by automating processes allow an organisation to predict timing and costs which helps in planning.

A plan for integrating automation into the workplace

Almost every occupation has partial automation potential; though few can as yet be entirely automated, take the job of a salesperson in a clothing store. Machines can manage store inventory well by detecting patterns in sales, but no robot can listen to a customer's story about a looming, stressful family event, recommend an outfit for it and give the customer an empathetic thumbs up after he or she emerges from the dressing room. Future automation advances will depend upon more than technical progress; the cost of development and deployment of relative to benefit regulation and social acceptance are just some of the factors that will dictate the pace of change. The research suggests it may take more than three decades for just half of all work activities to be automated. This way the workplace norm for years to come will be people working alongside machines, with profound implications for the way the workforce is structured and organized. Organizations will of course have to recruit automation-savvy talent, from experts in sensory or pattern-recognition technologies or natural language processing, to data scientists able to interpret and integrate massive intelligent machines.

However, many workers will need retraining to acquire new skills, focusing on those activities that machines have yet to master and learning to work more closely with machines.

Powerful manufacturing robots that can lift or weld have been kept well away from humans, but today's robots can work intelligently and safely alongside humans, redeployment with people shifting to new roles and tasks, will also be a feature of the workplace as automation gathers pace and processes are transformed. Organization will require a strategy and considerable management talent to navigate this transition to the new age of automation.

Four fundamentals of workplace automation

There are four fundamental of workplace automation in business performance these are as follows;

- **The automation of activities**
- **The redefinition of jobs and business processes**
- **The impact on high-wage occupations**
- **The future of creativity and meaning**

i) The automation activities:

Structured of analysis around roughly 2,000 individual work activities, assessed the requirements for each of these activities against 18 different capabilities that potentially could be automated, these capabilities range from fine motor skills and navigating in the physical world, to sensing human emotion and producing natural language.

The “automate ability” of those capabilities through the use of current, leading-edge technology, adjusting the level of capability required for occupations where work occurs in unpredictable settings. The magnitude of automation potential reflects the speed with which advances in artificial intelligence and its variants, such as machine learning, are challenging our assumptions about what is automatable.

It's no longer the case that only routine, modifiable activities are candidates for automation and that activities requiring “tacit” knowledge or experience that is difficult to translate into task specifications are immune to automation.

ii) The redefinition of jobs and business processes

According to our analysis, fewer than 5 percent of occupations can be entirely automated using current technology. However, about 60 percent of occupations could have 30 percent or more of their constituent activities automated. In other words, automation is likely to change the vast majority of occupations—at least to some degree—which will necessitate significant job redefinition and a transformation of business processes. Mortgage-loan officers, for instance, will spend much less time inspecting and processing rote paperwork and more time reviewing exceptions, which will allow them to process more loans and spend more time advising clients. Similarly, in a world where the diagnosis of many health issues could be effectively automated, an emergency room could combine triage and diagnosis and leave doctors to focus on the most acute or unusual cases while improving accuracy for the most common issues

iii) The impact on high-wage occupations

Conventional wisdom suggests that low-skill, low-wage activities on the front line are the ones most susceptible to automation. We're now able to scrutinize this view using the comprehensive database of occupations we created as part of this research effort. It encompasses not only occupations, work activities, capabilities and their automate ability, but also the wages paid for each occupation can be automated by adapting current technology, for example we estimate that activities consuming more than 20 percent of a directors' working time could be automated using current technologies.

These include analyzing reports and data to inform operational decisions, preparing staff assignments and reviewing status reports, also there are many lower-wage occupations such as home health aides, landscaper and maintenance of workers, where only small percentage of activities could be automated with technology available today

iv) The future of creativity and meaning

Capabilities such as creativity and sensing emotions are core to the human experience and also difficult to automate. The amount of time that workers spend on activities requiring these capabilities, though, appears to be surprisingly low. Just 4 percent of the work activities across the US economy require creativity at a median human level of performance. Similarly, only 29 percent of work activities require a median human level of performance in sensing emotion.

**Benefits of Workplace Automation on a Business Performance
These are as follows;**

- The benefits of automation enjoyed by individual firms will feed into the global economy.

- Automation could raise productivity growth by between 0.8 and 1.4 percent annually, giving a welcome boost to economic growth at a time when demographic trends threaten to dampen it.
- There are broader societal benefits too as automation can help tackle some of our most pressing challenges such as climate change and disease

SUMMARY

Workplace automation works with both in business performance and alongside with educators to pinpoint skill gaps and help establish priorities, as well as funding mechanisms, for lifelong-learning programs that address the needs of workers changing employers more frequently. Workplace automation may help to assess the need for new mechanisms that support transitions between employers and help workers whose wage levels are threatened to be through this automation.

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