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HOW TO INCREASE WORKFLOW EFFICIENCY FOR MICRO AND SMALL BUSINESSES WITH A CUSTOM-BUILT MOBILE APP IN HUNGARY - A CASE STUDY FOR A LANGUAGE LEARNING SCHOOL

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Abstract: The increasing availability of information and communication technology (ICT) has boosted interest in ICT-based microservices. Limited research examines the efficacy of ICT-based microservices and administrative burden-alleviating solutions for small and medium enterprises (SMEs) within a domestic context. This study investigated the potential of such solutions through a case study on a custom language training SME. Key workflows with administrative burdens were identified using an expert interview, leading to the design and development of a custom mobile application. The researchers developed an easily adaptable, general-purpose layer structure during the development process. Results suggest automating essential, low-cost elements of SMEs' internal and external processes through digitalisation and on-demand support can increase competitiveness and employee satisfaction. Further research with a larger sample size could solidify these initial findings and inform broader SME development strategies. Additionally, investigating the long-term impact on factors like employee skill development and customer satisfaction would provide valuable insights for SMEs considering such solutions.

Keywords: micro-enterprise, SMEs, mobile application, ICT, digital maturity (JEL code: M15)

INTRODUCTION

Underlying the study

SMEs are the pillars of the economy in many respects (Csordás & Füzesi, 2019), so their position and future prospects are vital. The 21st century has brought decades of digitalisation. ICT's extremely rapid development significantly impacts all aspects of life, including the economy. Researchers have long been concerned about the influence of ICT tools in different areas of life. The advent of mobile technology has generated revolutionary changes. Combining an easy-to-handle, anytime-anywhere digital device with mobile Internet has brought new dimensions to many aspects of life. The potential uses and their impact have been explored in several studies (Hardiyanto et al., 2022; Iakovets et al., 2023; Karar et al., 2021). Iakovets et al. stated that the use of apps has increased employee motivation. According to Adiwijaya et

al. (2022), SMEs should use mobile applications and recommend their regular renewal and new innovative methods. Chiu et al. demonstrated that employees' intentions certainly influence SMEs' adoption of mobile apps (Chiu et al., 2022). Several researchers have also investigated the impact of ICT tools, especially mobile-based ones, on programs. Chiu et al. (2022) found that in addition to functionality and efficiency, a thorough data security and privacy strategy for products and services should be developed. Several studies have also highlighted that many SMEs are adopting information technology to improve their performance, but some research shows that SMEs' performance in this area is still low. These implications prompted our research, which examined the position of SMEs in the economy and also looked at aspects of digital maturity. The factors affecting competitiveness were examined. Among the factors affecting competitiveness, administrative burdens stand out. Reducing these is an ongoing objective of the European Union and national governments. In this paper, the authors show how the SME sector has the potential to solve specific tasks with high workloads, mainly through simple IT developments, which can be easily adapted to other SMEs, and present a case study of the digitalisation development and impact of a Hungarian micro-enterprise, which aims to show good practice for SMEs.

LITERATURE REVIEW

Evaluation of the position of Hungarian SMEs

The Hungarian economy is built on two pillars: large multinational companies and domestic small and medium-sized enterprises (SMEs). A key objective is strengthening SMEs and increasing their competitiveness in both domestic and foreign markets (Csordás & Füzesi, 2019). The COVID-19 epidemic has severely affected all actors in the national economy (Dajnoki et al., 2023; Tímár, 2020), but SMEs have been particularly vulnerable. Among other things, they could face supply chain problems and even partial stoppages of activity (Tímár, 2020; Totth et al., 2022). At the same time, it has accelerated the digital switchover and digitisation of businesses. The National Framework Strategy for Sustainable Development (NSDS) calls for development measures to help start-ups to become stronger. It also aims to reduce the administrative burden on companies, which is a significant burden for SMEs due to the complexity and constant changes in rules. The NFK (Móricz, 2022) underlines that businesses contribute to value creation and economic capital by their existence. Their ownership can further improve the sustainability of domestic economic resources. In 2023, 1.2 million SMEs operated in Hungary, accounting for 80% of jobs and 50% of GDP, making them critical players for the stability and growth of the Hungarian economy. The average lifespan of SMEs is 8-10 years, but this can vary by industry and firm. According to HCSO (Hungarian Central Statistical Office) 2021 data, 20% of SMEs have been in business for less than five years, while 10% have been in business for more than 20 years (KSH, 2024; Móricz, 2022).

The SME/MSME sector is a crucial stakeholder in the national and international economy (Lister et al., 2022). Keeping in business for SMEs is crucial because of their importance in the national economy, even though we do not know precisely how their digital development is evolving (Pintér, 2023). They are indispensable participants in industry, production and service provision. Much literature has been devoted to digitalisation and competitiveness in recent decades. Academics and practitioners constantly examine the factors influencing organisations' market presence and competitiveness. In recent years, more and more attention has been paid to the potential of the SME sector, including micro and small enterprises. Given the prominent role of the SME sector in the domestic economy, it is worthwhile to focus on the development of this sector. They face many challenges in their operations. Their competitiveness is affected by many factors. If any of these factors are optimised, they can excel due to a positive influence on their overall operations.

In many cases, this does not happen, so organisations stagnate and either remain stagnant for years or, after a while, decline and possibly disappear. Competitiveness issues have already been discussed much in the last century. A considerable amount of literature has been published on this issue. Surveys in recent years show that the digital maturity of micro and small enterprises lags behind the rest of the SME sector and lags significantly behind large enterprises (Győri et al., 2019). This puts them at a very significant and permanent competitive disadvantage. Even though micro-enterprises are a significant source of employment in the Hungarian economy, they typically suffer from a persistent shortage of financial and human resources that, in many cases, can be alleviated through existing tools or tried and tested "good practices" - also detailed in the Digital Path for Sustainable Development. This document underlines the importance of awareness of the potential of digital solutions for business management and performance. Furthermore, it suggests that competitiveness will depend on the capability to use digital solutions in business processes (Csordás & Füzesi, 2023; Unidas & Nations, 2022).

Analysis of the Digital Maturity level of micro and small enterprises

The use of information and communication technologies is now essential in the life of a business. The move of the business to digital platforms is an inevitable process and is becoming increasingly pronounced in all areas. It is challenging for any business to survive without adapting to a constantly changing world. SMEs, especially micro-enterprises, cannot adapt IT tools and methods to their business processes (Csiszarik-Kocsir et al., 2022). It is worth exploring these reasons and presenting good practices. Smartphones/mobile devices have appeared in all aspects of human life. This has led to an extreme demand for high-quality apps that run on mobile devices. In addition, the SME sector is facing significant labour shortages, while administrative burdens are also increasing (Belas et al., 2019). ICT tools can be a solution if a business wants to fulfil its preferred or mandatory obligations and do so with fewer human resources.

In many cases, this can be done by purchasing free or costeffective software. If the business has specific needs, no suitable software tool has been developed as yet. Developing and maintaining a unique complex software tool is usually expensive and risky, and most SMEs do not have the risk capital to afford it.

By 2030, more than 90% of SMEs in the EU should reach at least a basic level of digital intensity (NFFT, 2013; Berger, 2022). A basic DII level requires the use of at least four digital tools. There are only four countries in the EU where it exceeds 12%. Hungary has a low level of investment in digital technologies, i.e. very low DII. (European Commission, 2022) The Digital Economy and Society Index (DESI) shows that Hungary has fallen back to 22nd place. (European Commission, 2022) In addition, the proportion of individuals with at least basic digital skills is significantly lower than the EU average, reinforcing the digital maturity gap for domestic SMEs. The figures clearly show that the country's performance in terms of backbone infrastructure is above the EU average, and in some respects, it has a very significant advantage. The SME sector is highlighted in the Going Digital Integrated Policy Frame-

work in the overall aspects of use, innovation and trust. In the 'Use' dimension of the Policy Framework regarding SMEs, enhancing the adoption and use of ICTs is considered a key factor (Mancini et al., 2022).

Nevertheless, Hungarian businesses do not exploit the potential of digital technologies. According to Bánhidi et al., the number of employees in firms will be significant for ICT skills and general, external, specific, and internal applications. At the same time, there is no difference in the use of digital tools and digital public services. The unsurprising result (Bánhidi et al., 2023) is underlined by the fact that only 21% of businesses have an enterprise resource planning system for electronic information sharing, and only 13% send electronic invoices for automatic processing. There has been a welcome improvement in e-commerce, but we are still only at the EU average.

A wide range of social media is available, but only a minority of businesses use them. Using more advanced technologies such as Business Intelligence, Cloud Computing, or Artificial Intelligence is rare. Surveys show that in Hungary's poorly performing SME sector in terms of digital readiness, microenterprises are particularly lagging (Lassnig et al., 2018). These IT-supported areas are also a priority for researchers outside Hungary (Barraud, 2009; Kergroach, 2020). Kergroach says using digital technology can help reduce costs. It can save time and accelerate business processes. According to the European Skills and Jobs Survey (Droec et al. 2019), four out of every five new jobs created require a highly skilled workforce. SMEs and micro-enterprises have to cope in this environment, where, in addition, a lack of capital and labour shortages are common problems (Subramaniam et al., 2019).

Competitiveness as one of the most critical cornerstones for businesses to stay in the market

In the European Union, regional policy, which aims to achieve harmonious and balanced territorial development, considers improving the competitiveness of regions to be one of the most effective means of cohesion (European Parliament, 2023).

Technology and innovation

Technology and innovation

Export capacity and market knowledge market knowledge

The regulatory environment

Competitiveness

Cooperation and support

Business support services

Infrastructure

Market access and internationalisation

Figure 1. The pillars of competitiveness

Source: Own edition, based on (Tarantola & Cooke, 2006)

The importance of competitiveness was already on the agenda at the Cologne summit in 1999 and has remained there ever since (European Council, 2003). In many ways, the SME sector is the most critical driver of economies. Their competitiveness is the basis for economic development (Hergár, 2021). Facing continuous challenges, the SME sector must invest in developments to survive in the right business environment. In the long term, the SME sector will be self-sustaining if it remains competitive against large companies in the labour market.

Regarding productivity, large Hungarian enterprises are below 60% of the EU average and must increase to 62%. However, competitiveness is a crucial issue for regional SMEs. To catch up with the leading European economies, they need to improve productivity and efficiency, which are lagging seriously behind the competitiveness of SMEs and are affected by many different factors (Figure 1.).

Derived from digitalisation can make a major contribution to further increasing the productivity and efficiency of small and medium-sized enterprises in particular (Hergár, 2021) as "There is hardly a business leader in Hungary who has not faced the biggest problem in the labour market: labour shortage." More efficient economies can produce more added value with fewer work hours. Digitalisation is essential to improve companies' digital readiness. According to Sándor et al., the most essential thing in digitalisation is that companies try to react as quickly as possible to external environmental factors (Sándor & Gubán, 2021) Faster adaptation can bring new opportunities, which can positively impact their competitiveness.

Administrative burdens

There are several arguments for reducing administrative burdens regardless of company size. Today's digitalisation trends are increasingly moving the simple data recording task towards automated or microservice-enabled systems. It can increase competitiveness through cost savings, increase openness and transparency of markets, promote environmental protection, stimulate market processes and reduce market failures due to information asymmetries (Ntaliani et al., 2012; van der Horst et al., 2017). The European Union is also continuously trying to reduce these burdens on SMEs through the Small Business Act (SBA), the adoption of the Single Tax Act (BEFIT) to reduce administrative burdens, and the determination to harness the power of digital tools and data for SMEs. Digital transformation is significant for SMEs because of their lower adoption rate of digital solutions. Regarding businesses, the overall digital target in the strategy is a higher level usage of not only the basic but also the advanced level technologies available (cloud computing, big data, artificial intelligence) at the enterprises (European Parliament 2022). Research shows that businesses can take advantage of the opportunities offered by digitalisation, but as digitalisation processes evolve, the ethical issues that arise must be regulated, at the same time, tools must be provided to help this development (Obermayer et al., 2023).

According to the "Connected Consumer Study" (Nichifor & Brătucu, 2021), from early 2018, 65% of the Hungarian population had a smartphone. The use of mobile applications (apps), a phenomenon related to the increasing number of smartphone users, has been growing in the world of technology. Since the

development of smartphones, our everyday lives have relied mainly on their various functions (Cho, 2016). Mobile apps are handy when business requires the business process to occur outside the office. A business can gain a lot if it can use a mobile app to trigger and simplify a business step. Sometimes, it can save the employees a significant amount of extra work. Thanks to continuous Internet access, the necessary technical and security aspects, such as logging, authentication, etc., can be handled automatically as part of the mobile application. The study by the World Bank (2022) points out the importance of a digital mindset in government services and mentions the reduced need for paperwork and repetitive form-filling due to the application of digital solutions. It may also have the same importance in the business environment, both from the sustainability and competitiveness point of view. Digital solutions can bring greater productivity and efficiency through digital and paperless business transactions and the greater integration of data and business processes (Samia & Astrid Herdis, 2020). It can be seen that these business sizes play a vital role in the life of the domestic economy (Gubán & Sándor, 2021). They recognise that digitalisation can help their operations, in many cases is even indispensable, a tool for survival. The literature review has highlighted a significant gap in these areas in the SME sector, especially among micro-enterprises (Kergroach, 2020). One of our options is to continuously monitor the current situation and propose solutions to reduce it. An interview has been chosen as primary research methodology (Kvale Steinar, 2005), which we hope will produce "good practices" that can guide similar businesses.

MATERIALS AND METHOD

Data and Sampling

The expert interview was chosen as the data collection method among the qualitative methods, as the authors designed the research objectives to be problem-focused, exploratory firmspecific questions for the given SME. This method allows for a deeper understanding of the research and the opportunity to more accurately explore the motivations of management and employees. This allowed a more accurate assessment of attitudes, opinions and public perceptions of the work processes involved and their real administrative burden. The survey was not designed to be representative but to provide a broader understanding of good practice for a given size category by building and developing a microservices-supported system. The survey was conducted in a face-to-face interview at the company through direct communication and guided interviews. It is important to emphasise that, in addition to the concrete answers, some respondents' gestures and non-verbal communication elements also provided valuable information for the developers. However, this has already been highlighted by Héra in their work (Héra & Ligeti, 2014). The survey was conducted in autumn 2023.

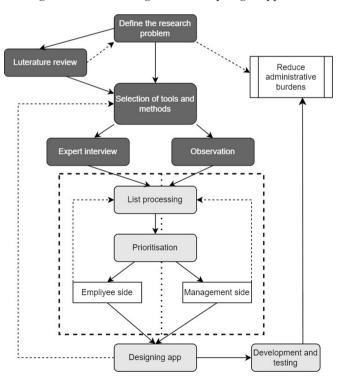
Structure of the research and materials

Prior to the study, three expert interviews were conducted to try to position and understand the situation and ICT readiness of SMEs. Based on these results, a questionnaire survey

was carried out. The results of the analysis showed that there is a gap between their perceived and actual digital maturity, especially for smaller companies. It was also found that many of their operations do not take advantage of ICT. This defined the research problem

This research process is illustrated in the following figure 2. The research started by formulating the research problem and reviewing the relevant literature, as shown in the figure. The arrows show the interconnectedness of the processes, while the dashed arrows indicate cause and effect and continuous feedback. It can be observed that the choice of tools and methods was closely linked to the literature review and contributed significantly to the identification of the main problems. The administrative burden had the most significant negative impact on SMEs, including the case studied by the authors. The figure takes a two-pronged approach: darkgray represents the research results, and lightgray represents the processes involved in programme development. Interview and observation methods were used in the research. The middle part, marked with a dotted line, illustrates the study of the enterprise's processes. The final order of the processes identified as critical was developed through repeated feedback and discussion. Subsequently, during the development phase, the authors developed the program using the RAD methodology and the most commonly used coding techniques. Finally, the testing and use of the finished application successfully reduced the administrative burden for the staff.

Figure 2. Research design with a two-pronged approach



Source: Own source, 2024

The developer environment

Regarding methodology, it was necessary to assess what the micro-enterprise, the entrepreneur, needs and the most considerable difficulties. The observation and interview technique, which was presented above, has been chosen. The aim was to see and describe all the activities and their interdependence. This was necessary to develop the most testing solution and application for him. Developing an app is often difficult for the developer, as the developer needs to build the app for at least two platforms (Android and iOS), which requires knowledge of two different development environments (Svensson and Käld, 2021). Several hybrid mobile app development frameworks exist, but the one of the most popular is React-Native (RN). Another advantage is its compact size, with an extensive library of modules for developers' native and nonnative components (Brávácz & Krebsz, 2021). Developed by Facebook in 2015, React-Native allows programmers to write code in a single place as a javascript ES6 language and thus build a mobile app for iOS and Android simultaneously, writing a single code for both native platforms. The user experience of the resulting mobile app is essentially the same on both platforms. Maintaining the application is much simpler and more affordable than developing it for separate platforms in separate languages. This programming interface has been used to develop a mobile application for the enterprise.

The app's operating environment

The server-side part of the application was available. Only reporting and security functions and interfaces were added. The database structure had to be modified to accommodate the new features. The server-side program is a web-based application. An application that is accessed by using a web browser via an internet or intranet network. Popular web-based applications use programming languages such as PHP, Javascript (Ayuningtyas & Janah, 2018). Modern web-based applications use frameworks such as Code Igniter, Laravel, and others to accelerate the application creation process. The framework allows programmers to use programming languages such as PHP, JavaScript. These frameworks are a PHP framework with an MVC (Model, View, Controller) structure, which is popular and has many references on the Internet (Sunardi & Suharjito, 2019). In the server-side module, the administration can upload the assignments for each course alongside the students and teachers. This data is used to generate the progress log. The server-side export/import function can provide the report in the correct format as required, and bulk data entry is also possible here. The application relies on a sizeable serverside database, managed primarily through a website.

RESULTS AND DISCUSSION

The literature review also shows the critical role of SMEs and micro-enterprises in the domestic economy. Their survival and development are of vital interest, both at the government and EU level. There are many different ways and means of stimulating entrepreneurship. As Figure 1 shows, many fac-

tors influence the competitiveness of SMEs. Any factor that can be improved in a positive direction can be an essential step. In the next chapter, the authors present a case study that uses a custom-developed tool to achieve this step. After presenting the results, it will be examined whether this custom-developed system can be used in practice and whether it is economically and otherwise viable.

Program development

In this article, the authors present the outsourcing of administrative tasks that arise in the operation of a language-learning school. Their processes have been examined, and some factors that could significantly reduce the administrative burden have been identified.

Several academic articles highlight that repetitive, timeconsuming administrative tasks are bad for workers, especially from the generation "Z" (Bencsik et al., 2016). However, regulation requires many administrative processes to be carried out in certain forms of education. It is a requirement to monitor the progress of each course. A breakdown of progress by learner must be kept. The administration of language teachers is also necessary. How many lessons were taught, what tasks were done, when, etc. The various progress schedules, which vary from individual to individual, should be recorded and forwarded to the various official bodies as necessary. This represents a very significant administrative burden. There was no ready-made application to solve the specific task using ICT tools, so we decided to implement the application. Since all teachers have smart devices, it was a reasonable choice to create an application. A microservices application has been developed to replace this. This connects to their existing system, with interfaces created for secure information exchange.

The authors share the view that end-users are key players in the software development process (Hughes, 2016). Therefore, BPMs (Business Process Management) have been created and analysed from the end-user's perspective. Application Development Methodology is a standardised approach to achieve a predefined result within a defined budget (Aleem et al., 2016).

Mobile application working model

User Interface layer

Login screen

Data validation

Sylabus screen

Business rules

Tasks acception screen

Class screen

Attendance screen

Data transfer
operations

Data transfer
operations

Data transfer
operations

Login screen

Data validation

Authentication and Access control

Consistency

Data integrity and consistency

Data retrieval and
consistency

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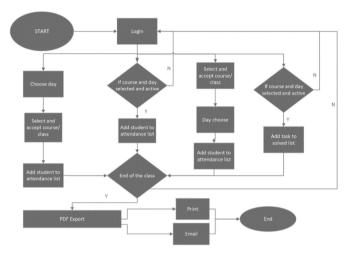
Data retrieval and
consistency

Figure 3. Proposed framework: different functions in different layers

Source: Own source, 2024

Among the different methodologies RAD (Rapid Application Development) was chosen. The RAD approach shortens the development time and facilitates quick initial reviews (Jindal et al., 2015). The model is only applicable to systems that can be built in a modular way. A layered structure was developed in which application parts are divided into separate layers and functions, as shown in Figure 3. The developed layer model takes into account security functions in addition to functional functions. This structure can be easily adapted to any application of similar size.

Figure 4. Client side BPM



Source: Own source, 2024

Mobile application- operation

After mapping the business processes (Figure 4), it was checked whether there were ready alternatives that could be used. Due to the specific progress diary to be generated and some other specific needs, no ready-made alternative existed at the time of the study. As you can see, the business processes to be automated are not very complex and can be easily implemented; nevertheless, they can save a lot of human resources. There is no ready-made solutions, so the author designed and built this unique application.

Application development uses an open-source platform available on the Internet by considering a limited budget. In addition, choosing the type of programming language considers the availability of reference information on the Internet. For the mobile application, React Native was chosen to create applications on smartphones. It is connected to the web API (Application Programming Interface) on the application server for data processing. The RN community (React Native Community) has developed a number of ready-to-use modules that can be used to build your own ready-to-use application. The database uses the MySQL DBMS (Database Management System). The testing phase is still ongoing. A lot of emphasis were put on testing the completed application from both verification and validation point of view. In addition to the unit, module, and interface testing, we also took care on achieving a consistent look, feel, and functionality (Runeson,

2006). The creation and maintenance of the app are not significant, but in this case, we believe that the primary concern is to reduce the administrative burden. It is about enabling employees to spend their time creating real value. And this is ideally in line with the EU's declared objective. Mandatory reporting without the app creates an administrative overload for employers that could even become an exit point. In this labour-scarce world, this could even put the continued existence of the SME in question (Doblhammer & Spéder, 2024).

During the testing phase, several cases were simulated for students and groups. On the server side, we created the training plan and we created a student groups. We assigned students to groups and and teachers to classes. Then we recorded the group activities both ways on paper and with the app. Then we created progress diaries in both 2 ways. It was observed that even when using "templates" for the progress riports, it took about 1.5-2 minutes per person to complete the traditional recording and then the individual and group progress diaries. Increasing the number of groups reduces the preparation time per person, but managing absences requires much attention because many mistakes can be made. However, automation is simplified by the application and the reporting function. Now, it is a few clicks, and the possibility of error is minimised.

Mobile application- costs and benefits

The programme's costs are essential for implementation and maintenance, as the willingness of small businesses to invest is strongly influenced by costs and returns. As this application was primarily developed to support our research, it was free of charge, but to get the complete picture, it is necessary to know if it is worth building and maintaining. It is essential to see how much to spend and how much return can be generated. For this reason, a cost plan has been prepared for the application. Figure 6 shows the cost plan for the application.

Investment and Payback Period:

Implementing the online tools requires an initial investment of \sim 2200 EUR. However, this cost is projected to be recouped within a relatively short timeframe (3-4 months) based on anticipated time savings for the average number of students and groups within the school. Further research or pilot studies could refine this estimate with more precise data.

Ongoing Maintenance Costs:

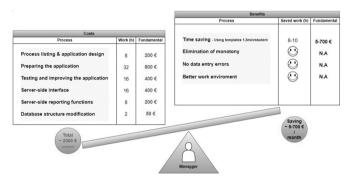
Maintaining the online tools necessitates regular upkeep, encompassing application maintenance, updates, and server services. These expenses are estimated to require 10-12 person-hours annually for maintenance tasks and 50 EUR per year for server upkeep. This translates to an annual maintenance cost of approximately 500-700 EUR.

Cost Recovery through Time Savings:

The projected time savings achieved through online tools are anticipated to offset the annual maintenance costs. According to preliminary calculations, these time savings are equivalent to approximately 1-2 weeks of working time. More detailed time studies could provide a more accurate quantification of this benefit.

The initial investment appears recoverable within a short timeframe due to projected time savings and associated cost reductions. However, further investigation is recommended to refine the payback period estimate and comprehensively assess the long-term cost-effectiveness of this initiative. Another important aspect is that the employees can perform value-added tasks instead of tedious and highly punctual administration, positively impacting the workplace and employee morale. These elements cannot be measured in money (Figure 5). However, better working conditions significantly increase employee satisfaction. The use of the app has reinforced the impression of an innovative enterprise among employees and students. This can also contribute significantly to the success of SMEs' businesses.

Figure 5. Development costs and benefits



Source: Own calculation, 2023

CONCLUSION, SUGGESTIONS

As the literature chapter explains, SMEs and micro-enterprises are also essential to the domestic economy. Many factors influence their long-term survival. Any progress they make in these areas can greatly increase their competitiveness. Considering EU recommendations, digitisation can be an excellent way to bridge the gaps. The proliferation of modern digital tools now makes it possible to use tools that used to be available only to large enterprises. They can cover an extensive range of business models. Their uniqueness justifies the existence of many SMEs and micro-enterprises, but for this reason, it is impossible to get standardised modules to automate their particular microservices. So, this does not allow them to digitise their processes with template solutions. Fortunately, as our solution suggests, several tools can be used to do this profitably. In this article, the authors have created an application that reduces the administrative burden of a business. The results and the feedback from the entrepreneur show that a relatively small investment can significantly increase the business operations and its metrics. Customised applications can increase micro-enterprises' digital maturity while reducing the administrative burden. By increasing their competitiveness compared to their competitors, they can improve their chances of survival. It is recommended to monitor further and analyse the success of activities and the use of the app, which can provide a basis for future improvements, not

to mention non-monetary benefits such as a positive labour market image, an attractive working environment, attractive non-monotonous workflows and software-supported work. In the course of the research, a layer model was created that takes into account security functions in addition to operational functions. The structure developed can be easily adapted to implement other perceived tasks.

For this reason, the authors recommend digitising these and similar microservices for SMEs, increasing their competitiveness and efficiency in a highly competitive market rather than reducing it. Assessing the usefulness of an app is not just a question of money. Employee retention is also a significant achievement. The possibility to reduce the monotonous workload is not only has a positive effect on the aforementioned generation of the company but is also welcomed by other employees. The IT maturity of the company has increased (leaders notes), and the successful implementation is characterised by the fact that during the testing, individual colleagues were inspired and contributed new ideas to the further development of the application. Among the suggestions for improvement was to allow students to see their progress. Encourage students to attend lessons through various pushup messages. To sum up the authors have observed that there are many other aspects than the financial side, which have a decisive influence of success.

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