ASSESSMENT OF THE DIGITAL MATURITY IN SELECTED INDUSTRIES IN THE REPUBLIC OF MACEDONIA

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Abstract: *The goal of the paper is to assess the level of digital maturity of selected companies in two industries (banking and retail) in the Republic of Macedonia based on defined methodology. The results confirmed that companies in the sample fully understand the benefits of digital transformation and strive to reach higher levels of digital maturity. Although companies from both industries are progressing well and the overall level of digital maturity is set between levels 3 and 4, banks are step forward reaching level 4 i.e. customer-driven while retail companies are on transitional level.*

Key words: *Digital transformation, digital maturity assessment, Republic of Macedonia*

1. INTRODUCTION

The main goal of this paper is to assess the level of digital maturity of the leading companies in two industries in the country (banking and retail) using a specific methodology for measuring the level of digital maturity. A digital strategy or plan is the articulation of the vision, goals and activities of the organization through the full and comprehensive use of digital solutions and technologies [1]. However, the ultimate goal of digital incentives is to maximize the business benefits of the organizations. Many organizations do not have a clear digital strategy. The ICT strategy sets the technical infrastructure that supports the use of digital solutions in the organization, while the digital strategy tells what needs to be channelled through the technological infrastructure, how it will be managed and why. As such, the introduction of digital technologies is a means, not a strategy itself [2]. The strategy must be owned by the whole organization, to be accepted and successfully implemented.

Digital maturity is a desired goal - something towards which the organization strives to achieve it, something that always changes and improves [3], while digital transformation affects the entire business. Digital transformation is the use of technology to radically improve the company's performance or domains [4]. Digital models of maturity are designed to help organizations take a comprehensive approach to transformation.

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In order to achieve a certain level of digital maturity, digital transformation is indispensable. The most influential methodologies for digital transformation will be briefly presented. According to Adobe Digital Marketing Survey results, [5], companies are divided into four groups. The groups are: advanced companies (data are integrated, best practices are generally accepted, there is no uncommon automation, strong technical capacities), focused companies (data and processes integrated somewhat, automation, solid technical facilities), emergent (basic data integration, sporadic automation, growing technical capacities) and non-existent (limited data in silos, lack of automation and poor technical capacities). In the same report, it was mentioned that only 19% of North American organizations and 7% of European organizations rated their digital maturity as an "advanced level". One of the most interesting approaches to research on digital maturity is that of Westerman, Bonnet and McAfee, (2012) [6]. According to the previously quoted authors, digital maturity is a point in the space of two interrelated factors - the first is digital intensity (the level of investment in technology application initiatives, in order to change the way the company operates), the other is the intensity of management transformations (investing in the leadership abilities needed to lead a digital transformation within an organization). This concept combines the capabilities of transformation and includes a management vision for implementing technology-based changes. (Figure 1).

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Figure 1: Four Types of Digital Maturity
Source: Westerman, G., Bonnet D. and McAfee, A. (2012) *The Advantages of Digital Maturity*, available at: sloanreview.mit.edu/article/the-advantages-of-digital-maturity/

Digital beginners do not use the advanced opportunities, and there are very rarely of their own choice - there is a lack of awareness of the needs of digital transformation and leadership. Fashionistas use advanced digital applications, but without a clear vision of synergy and very often without creating and valorising a new value. Companies that have a bad corporate-level management and do not have a clear strategy for digital transformation, even if some business entities are more mature, belong to this group. Conservatives understand vision, corporate strategy and culture. However, they do not understand the value of emerging digital technologies and may miss out on business opportunities. "Digirati" understand new technologies and know how to use them. Their management develops a digital culture that can predict and lead digital transformation.

Companies that are advanced in the dimension of digital intensity are better at generating income. In terms of employee incomes and fixed asset management, fashionistas and "digirati" exceed the average performance of the industry by 6-9%. On average, digital conservatives and "Digirati" are 9% to 26% more profitable than their industry average, including EBIT (profit margins and net income) margins and net profits [6].

The TM Forum's Digital Maturity Model (DMM) [3] is one of the industry-specific models. Since companies in these industries are leaders in digital change, this model can be used as a reference in industries that have high technological intensity. Digital transformation refers to operational efficiency, because automating processes (with customers, partners, etc.) can provide better customer experience with lower costs. Long-term customer value can be expanded by creating more personalized proposals and new digital services. The five broad categories or dimensions have been identified for companies to use to assess their digital maturity - client, strategy, technology, operations and culture.

Sasho Josimovski

Prof. Sasho Josimovski is full time professor at the Faculty of Economics, University "Ss. Cyril and Methodius" in Skopje, vice dean for finance and EU expert in the field of research and innovation policy. He was country correspondent (for Macedonia) in the European Commission's ERAWATCH Platform on Research and Innovation policies and systems for the period 2008-2014. One of his main research focuses is the usage of ICT in business and economy and the influence of the new technologies on the socio-economic and regional development. Prof. Josimovski published four books and over 60 papers in home and international journals and conference publications in the field, and participated in over 30 conferences. He was engaged as project consultant for USAID, World learning and two IPA EU-funded projects completed in 2011. Furthermore, he participated in the management bodies for several EU projects: ACE Project R98-1090-R, completed in 2002; TEMPUS projects EBUSMAN completed in 2006 and MEMFES completed in 2009 respectively; FP6 project IS2WEB completed in 2007, and the FP6 projects RACWEB, ELLECTRA-WEB and SCORE completed in 2009. He was coordinator of the bilateral Macedonia-Austria project completed 2014. Prof. Josimovski performed study visits at Universities in USA, The Netherlands, Belgium, Spain, Czech Republic, Iceland and the other countries. Prof. Josimovski is national project evaluator and consulting expert for the Government of the Republic of Macedonia for developing national IT and educational strategies, member of IT expert's council for Chamber of commerce for the association of IT companies MASIT, and founder and member of Macedonian Internet Society Association. He is also member of the editorial boards for several International conferences.

2. ASSEMENT OF THE DIGITAL MATURITY IN BANKING AND RETAIL SECTORS IN THE REPUBLIC OF MACEDONIA

Digital transformation at the global level is strongly expressed in the service sectors especially in retail and finance sector [7], [8] and service industries are recognized as leaders in digital transformation projects. The survey was conducted in retail and banking.

The banking sector in the country is one of the most advanced service sectors and hence represent a benchmark concerning the digital transformation. The concentration of the banking sector remains high, since three of the commercial banks (largest banks) account for more than 60% of total assets in the banking system [9]. Therefore, our sample of six banks can be considered as very representative, having in mind that it comprises largest banks in the country.

From the retail sector, the three largest retail companies in the country were selected for assessment. According to the preliminary data of the State Statistical Office [10], in the retail trade, in June 2017, compared to June 2016, an increase in the turnover was registered in the group Retail trade of food, beverages and tobacco (nominally by 8% and in real terms by 6 %), which includes the listed companies.

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She is assistant professor at the University "Ss. Cyril and Methodius", Faculty of economics – Skopje, at the e-business department. Her field of interest is business process management, business analytics, digital transformation and information technology management. She realized several study visits abroad and participated in more than 20 scientific conferences, seminars and summer schools. Also, she participated in 5 international projects: SCORE - "Strengthening the Strategic Cooperation Between the EU and Western Balkan Region in the field of ICT Research", financed by EU FP6 IST-6, (2007-2009); MEMFES – "Master of E-business Management at the Faculty of Economics in Skopje"– TEMPUS CD JEP 40093-2005 (2006-2009); IS2WeB -"Extending Information Society Networks to the Western Balkan Countries", financed by EU FP6 IST-3 (2005-2007); EBUSMAN - "E-Business Management for the Faculty of Economics, Skopje" - TEMPUS CD_JEP 17030-2002 (2003-2006); NeBaMe – "Network per Funzionari delle Amministrazioni Centrali e Locali nell'area dei Balcani e del Mediterraneo", CIRPS - Università degli Studi di Roma "La Sapienza", financied by Italian Ministry of foreign affairs, (2003-2005). She is author and co-author of more than 25 papers presented on internatinal conferences and published in scientific journals.

According the defined methodology based on [11] five different aspects of digital maturity are assessed. The first pillar is *governance and leadership*. It refers to the executive support, authorisation, and reporting processes and detailing of roles and responsibilities. The second one is *people and culture* meaning the organisation's culture, including customer-focus, innovation, risk appetite and attention to managing change – especially staff roles. The third one is *capacity and capability*. In the methodology it is defined as the ability to be digitally mature, including resources, staff numbers and skill sets, access to the right technology, training plan, supporting policies and procedures. The forth pillar is *innovation* representing the willingness and ability to imagine new services and products and new ways of service delivery as well as the level of proactivity and desire to assess and implement new technologies, business processes and modes of working. The last is *technology* referring to the suitability of the underlying technology platforms, programs and systems that support the other four pillars. All these pillars are measured through five levels of maturity: level 1 – *minimal*, level 2 - *informal and reactive*, level 3 - *transitional*, level 4 - *customer-driven* and level 5 – *transformed*. Higher

level managers were approached and they were asked to thick different characteristics of different levels that apply to their companies. Average level was assessed by the research team.

Concerning the first pillar, *governance and leadership*, analysed banks are mostly on the level 3 and 4. This means that they have defined digital strategy which is integrated into departmental planning process and influences overall organisational strategy and direction. In these banks KPIs and benefits to the business and customers are understood, monitored and reported on and drive all digital activity. These banks have clear roles and responsibilities for delivering the digital strategy which are well understood. Generally, they understand the benefits of social media and drive social media activity. In the retail sector, two of the three companies are at the level of 2.5, and one at level 3 - transitional. They are on the lower level compared to the banking sector. The following features are understood: the existence of a digital strategy, proactive participation of customers through all channels and the use of benefits from social media.

Dimitar Jovevski

Born on 20.07.1983 in Skopje, R. Macedonia. In October 2002, he enrolled at the Faculty of Economics at the University of Ss. "Cyril and Methodius" in Skopje in the Department of Management. In the sixth semester he leaves at FONTYS University of Professional Education, Eindhoven, Netherlands, where he graduated in January 2007. In December 2007, he was selected as a junior assistant for a group of subjects in the Department of Business. In 2008, he enrolled in the postgraduate studies in E-business Management, where she studied in 2011 on the subject "Internet Marketing Strategies and Techniques for Improving the Business of the Companies". The same yeah he started to work on this Ph.D. thesis and in 2014 he finished. In September 2014 he was elected as an assistant professor at the Faculty of Economic-Skopje. At the moment he is teaching Digital marketing and Methods of sales. Hi is author and co-author of more than 25 papers presented on internatinal conferences and published in scientific journals.

The maturity of the analysed banks for the second pillar – *people and culture* is on level 3. This means that the digital strategy is developed and embraced by staff and in some cases digital strategy is driving cultural change. Further, digital teams are embedded in organisational structure and in some cases staff is organised in teams around customers rather than the organisation's services and products. In the banks at this level of digital maturity, digital transformation change management plan is implemented. In the retail companies, according to the answers of the managers for the second pillar i.e. people (employees) and the organization's culture, the estimated level of digital maturity is 3.5 - between transitional and focusing on consumers. The answers include the following features: the digital support team is involved in the organizational culture, all employees accept the digital strategy and it is the leader in the culture of change in the organization, the employees are organized into teams around the customer needs, and not about the products and services of the company.

For the third pillar - *capacity and capability* for the analysed banks, it can be concluded that the answers are more dispersed meaning that there are banks at 2 and 3, 4 level. However, in the retail companies the rating is 4, that is, focusing on customers. Thus, the following characteristics of the organizations are highlighted: key digital procedures have been developed, trainings are being conducted for employees to improve the online presence and delivery of services and a full focus on clients, as well as appropriate resources and budgeting to support digital channels and activities.

The next, fourth pillar is *innovation*. Analysed banks are mostly between level 3 and 4. These banks have reviewed and prioritised all business practices and processes for conversion to digital channels. Further, customers' needs and expectations drive innovation in service delivery – new services, new products and new relationships. Experimentation is encouraged across all channels and new methods of developing digital services are employed that are appropriate to the dynamic nature of the web –e.g. agile and lean. As this pillar refers to the willingness and ability to imagine new services and products and new ways of service delivery as well as the level of proactivity and desire to assess and implement new technologies, business processes and modes of working, it shows that the banks in the sample are leaders in the innovation of products and services. In the retail sector, from the answers it can be concluded that the general level here is relatively low - between 2 and 3. Thus, digital processes are primarily organizational-centric.

The last pillar *technology*, shows the highest level of all other pillars, i.e. mostly the analysed banks are between level 4 and 5 and the companies in the retail sector are on level 4. This is encouraging since the technology is enabler of digital transformation. According to the methodology and the assessment tool, companies which reach these levels have certain characteristics. Their IT team input ensures digital services are responsive to the customers' chosen devices and comply with accessibility standards, enhances the delivery of digital services and speed and ease of developing new digital services. The IT team is skilful in training and supporting other staff in their use of digital solutions, tools and devices and IT strategy and performance are entirely aligned to the organisational vision and strategy and on-going feedback and optimisation of IT processes and digital tools encouraged and applied.

The results of this analysis confirmed that companies in the both samples understand the benefits of digital transformation and strive to reach higher levels of digital maturity. Although companies from both industries are progressing well and the overall level of digital maturity is set between levels 3 and 4, banks are step forward reaching almost level 4 i.e. customer-driven while retail companies are on transitional level.

CONCLUSION

Assessment of the digital maturity level helps organizations to strategize and transform. From our research, we can conclude that banking sector has higher digital maturity level compared to retail. According to the perceptions, banks are progressing well. Namely, the overall level of digital maturity can be set between levels 3 and 4, or transitional and customer-driver. Research in retail companies in the country shows that their managers are aware that digital transformation is a continuous process. A general level of 3 or transitional indicates that digital transformation in companies has started, but the complete integration and transformation of organizations requires strong commitment, especially by company leaders. For further research comparative analysis with other industry can be performed to analyse similarities and specifics.

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