NEW BUSINESS MODELS – FROM BUSINESS PROCESS REDESIGN TO THE DIGITAL TRANSFORMATION

ANTON MANFREDA
University of Ljubljana, Faculty of Economics
Kardeljeva ploščad 17, 1000 Ljubljana, Slovenia
anton.manfreda@ef.uni-lj.si

ABSTRACT

Companies are today faced with challenges that are driven by the new technologies, innovations or the advent of new companies that are completely adapted to the digital era. Modern technological trends, such as social networks, mobile devices, cloud computing and data analytics together with the complexity of coordinating all these aspects are bringing several new issues and unanswered questions. One of the main challenges of the existing companies is transforming their business models into the digital ones. Easily said; however hardly done. Existing companies are heavily relying on the tradition and their past success making that transformation even harder. However, digital transformation cannot be done without rethinking existing business processes. Companies that want to remain competitive should have well-regulated and optimized business processes that are enabling them to efficiently perform their business. Moreover, changing business models is highly related with business process redesign, which requires additional endeavour particular in companies with a long tradition. The paper will thus focus on the challenges based on the new digital models and examine some practical examples of innovative digital products. Furthermore, the paper will also focus on the business process management as an important prerequisite for successful digital transformation. The paper thus analyses the possibilities to implement business process redesign and key challenges during business process redesign. Lastly, the paper will focus on the trends that should be researched in the future.

KEYWORDS: digitalization, business processes, business models, transformation, CRODMA

1 INTRODUCTION

The digital transformation era is currently going on and will probably even hasten in the next years, since it is one of the core topics of several academic and practitioner conferences. Some even denote it as a next revolution. Although the digitization drive began in the 1980s it has become more important over the last 10 and is set to accelerate even more in the decades ahead [Gerth and Peppard, 2016]. However, many organisations will have problems adapting to this revolution. Not merely due to lack of finances or skills but rather due to not having a proper

vision of the future and being unsure of how to align organisational strategy with the so many options and possibilities that are challenging the them in their digital transformation.

In contemporary organisations, digital skills are greatly valued and enquired and it is anticipated that in the future they will become critical. Digitalization has spread to all areas of business and is creating new job possibilities with particular skills. It has been claimed more than a decade ago that by adjusting the business to the new technologies, the need for skilled IT personnel will appear in order to maintain a competitive advantage with value adding activities [Kakabadse and Korac-Kakabadse, 2000]. Highly required skills are today related to cloud computing, big data, analytics, HTML, Android, iOS and the future seems to even increase the need for these skills.

Digital transformation has an important impact on the corporate world. Contemporary technological trends have considerable influence on business processes, services, products and business models. All these trend and issues are forcing companies to rethink their strategies and their value proposition. Existing companies are relying on the tradition and their past success, and therefore making the transformation even harder. However, these traditional companies are under pressure of new emerging companies that have larger potential for rapid innovation and growth. Therefore, digital transformation of existing companies cannot be done without rethinking existing business processes. The purpose of the paper is thus to focus on the business process management as an important prerequisite for successful digital transformation.

Over the past two decades, both academics and practitioners have frequently misused the term business model. It has been suggested that business models are particularly important; however, consensus on its meaning has not been established [da Silva, 2013]. The term business model often denotes various things from strategy, marketing, products to revenue model. Therefore, the paper will also focus on the concept of business models together with its changes over the years. The paper will also present new challenges that are based on the digital transformation and discuss the possibilities for future research.

2 DIGITAL TRANSFORMATION ERA

The digital transformation era is sometimes called as a new revolution [I-SCOOP, 2016]. It is claimed that digital transformation will transform business processes, the customer experience and the entire business model and consequently improve competitive success. However, the question is to what extent the digital transformation differs from the business process management. Since transformation cannot be done without rethinking business processes, business process management is crucial the era of digital transformation.

2.1. BUSINESS PROCESS MANAGEMENT

BPM is generally defined as a top-down set of organizational principles and methods designed to organize, manage and measure the organization based on the organization's core processes [Harmon, 2014]. Awareness for BPM is increasing both in practice and research [Houy et al., 2010] and is becoming even more important in the last few years. Nevertheless, it has been claimed that business processes are a method for achieving a value for internal and external clients [Melão and Pidd, 2000] while proper BPM can bring a long-term competitive advantage [Gartner, 2006]. Therefore, it seems that BPM has been claimed to have the same advantages as it is claimed today for digital transformation.

Some considered BPM a management innovation [Rich, 2008], while others regard BPM a management fad [Steininger et al., 2009]. Generally, the implementation part of BPM is claimed to be the most problematic and is often leading to several failed projects [Sarker et al., 2006]. The success of BPM namely rest on careful implementation and is depended on a several organizational factors [Sidorova and Isik, 2010] which is true for most organizational transformations including the digital transformation.

One of the most important key success factors for a successful BPM is the proper approach of the employees and management. People are the key issue in this process [Wahid and Corner, 2009]; therefore, developing a proper mind-set is the critical part [Smart et al., 2009]. For BPM a proper mid-set refers to process thinking and process orientation. Therefore, BPM presents a holistic management discipline that needs to consider several aspects for its successful adoption [Rosemann and vom Brocke, 2010].

2.2. BUSINESS MODELS

The concept of business model was presented in an academic paper more than fifty years ago [Bellman et al., 1957] and after that the concept experienced a constant evolution and consolidation. One of the first contemporary attempts [Slywotzky, 1996] defined a business model as a holistic approach, namely (1) how the organizations select their clients; (2) how to differentiate their offerings; (3) how to plan tasks to be performed out within the organization and also outside the organization for which external experts will be needed; (3) how to organize organizational own resources; (4) behaviour on the market; (5) creating products designed for customers; and (6) making profit. Later several additional definitions were proposed [Osterwalder et al., 2005; Zott and Amit, 2008]. However, it has been claimed [Nenonen and Storbacka, 2010] that research on business models is still at the beginning, mainly due to no commonly agreed definition.

Business model was presented as [Amit and Zott, 2001] governance of transactions designed in order to create value through the utilization of different business opportunities. Later

[Chesbrough and Rosenbloom, 2002], additional importance was given to the value creation process and how the organisation fits in the value chain. Further definitions focused on emphasizing the strategic view, competition and resources needed for a success [Chesbrough, 2007; Shafer et al., 2005]. Moreover, the importance of partnership and value network has later been claimed as well as an important part of a business model [Zott and Amit, 2008]. In the recent years the focus of research moved to the relations between business models and sustainability [Schaltegger et al., 2015; Stubbs and Cocklin, 2008]. In order to assess the possibilities for business model growth it is important to interact between infrastructure, institutions and other actors that build the whole systems [Bolton and Hannon, 2016]. However, the problem with definitions dealing with the business models exist in the components of a model; and therefore, there is confusion in terminology, since business model, revenue model, economic model or strategy are often interchangeably used [Morris et al., 2005].

Even though several academic and practitioner papers propose different definitions for business models without a matching base, it is possible to identify similarities among their viewpoints [Nenonen and Storbacka, 2010]. Namely, one common point is that definitions consist of how business models explain customer value creation. Additional common point is focusing on strategic orientation and value network, particularly on organizational relations with stakeholders. Lastly, the majority of definitions focus on explaining how organizations create profit in their business activities.

The popularity of the topic is evident from the scientific articles dealing with the business models. In the last five years there has been more than 700 papers published in SCI or SSCI journal based on the data derived from the Web of Science. In 2015 alone, there were 113 scientific articles with the term “Business Model” or “Business Models” in the title of the paper. Including also the indexed conferences and books, the number rises to more than 300 in just one year. In 2016, the number of SCI or SSCI articles dealing with the same topic has already exceeded 100.

2.3. DIGITAL TRANSFORMATION AND NEW CHALLENGES

All disruptive changes that were driven by new technology like the information and communication technologies in general have resulted into new forms of business models. Technological advancement required and enabled a faster adaptation to innovations. Therefore, business models from the industrial age were not appropriate to deal with the coming challenges of the information age [Venkatraman and Henderson, 1998]. Moreover, it has been claimed that new business models were even more important as the talent of individual entrepreneurs [Hamel, 2002] and were the key reason behind the success of several corporations like Wal-Mart, eBay, Microsoft, Amazon or Southwest Airlines [Afuah, 2004].

One of the main challenges in the last decade is related to the cloud computing and how to utilize its power. Cloud computing delivers on-demand computing resources via the Internet on a pay-for-use basis or any other predefined method. Allowing access from anywhere anytime, it presents a new way how individuals and organisations work and communicate over the internet [da Silva, 2013]. The cloud offers a scalable IT system infrastructure enabling organizations to promptly build scalable businesses at a lower starting costs [Hugos and Hulitzky, 2010]. Lastly, it offers additional business models like infrastructure as a Service, Platform as a Service, and Software as a Service.

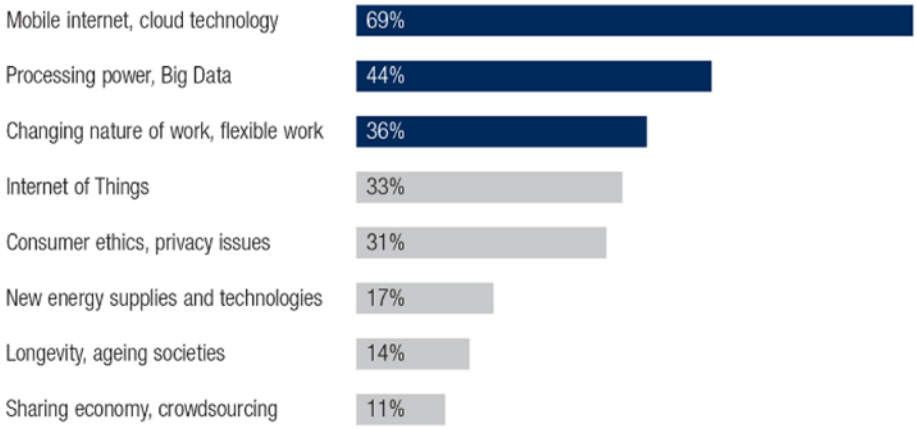
Cloud computing, social networks and other contemporary challenges are presenting new possibilities for organizations. Several ideas were live for a decade; however, the technological advance makes them possible. Beside already known examples of digital transformation for the products that are easily transformed into digital (like banking, insurance, marketing etc.), the main challenge is to digitalize non-digital products. The table below presents a few examples of innovative ideas or products that were digitalized.

Table 1. Digitalizing non-digital products

Product / service	Provider	Characteristics
A tennis racquet	Babolat Play	application & sensor
Sport T-shirt	Athos	application & sensor
Book experience	Lost my name	offer flexibility
A fax machine	aFax	application
A locomotive production	GE transportation	sensor
The whole physical store	Tesco	application
Motivation	SAP	application & motivation
Flavour	uFlavor	application

These examples were more or less successfully transformed into digital, and therefore present a motivation for many other companies for not being afraid of innovative thinking and starting rethinking of their existing business models and their products. Some examples required completely new business models; however at times there is a merely a need for new digital products. Nevertheless, all these organizations are presenting a driving force for other companies and are forcing them into changes together with the general trend that are impacting business models. These general trends are presented in the Figure below.

Figure 1. Top trends influencing business models



Source: WEF, 2016

The figure confirms the most disruptive technologies and contemporary issues are cloud computing, big data, flexible work and internet of things.

2.4. STRATEGIC INSIGHTS

Examining the influence of IT on the business value has been a main challenge for several researchers in the last few decades [Luo et al., 2012; Piccoli and Ives, 2005; Wagner and Weitzel, 2007]. It has been suggested that presenting the value of investing in IT is quite an important contribution of the IT discipline, mainly because understanding the impact of IT encourages ideas concerning the future IT applications [Agarwal and Lucas Jr, 2005]. Thus, several researchers have been motivated to study and understand the impact of applying IT within organisations on improved organisational performance [Melville et al., 2004]. The latter has become even more important in the era of digital transformation.

It has been claimed that IT is enabling business process redesign, strategic alliances and competitive advantages [Avison et al., 1999]. Nevertheless, IT generates business value by enabling efficient business processes and performing their activities better compared to the competitors [Luo et al., 2012].

As it is evident there are several issues related with the digital transformation. Despite the fact that digital transformation is sometimes claimed to be just another buzzword, it is evident there important changes are overflowing the business world. These changes should be considered by other organizations that want to follow this new wave. Therefore, the table below presents some of the most evident differences between organizations that are leaders in the digital era and other traditional organizations.

Table 2. The comparison between traditional and digitally transformed organizations

Item	Traditional organizations	Digital transformation era
Hierarchy & organisation	The importance of hierarchy	Unclear hierarchy
	Expert groups	Interdisciplinary groups
Workday	Routine work	Improvisational work
	Relying on formal rules	Formal rules are digitalized
	Formal procedures	Formal procedures are digitalized
	Repeatable work	Flexible teams
Planning	Predicting the future	Agile responsiveness
Products	Relying on trademark	Relying on services
BPM	Different BPM maturity	Agile processes
Education	Formal training	Agile flexibility
IT	Supporting role	Partnering role

It is important to add that these items are based merely on some examples of organizations offering digital products, which presents a limitation of this paper and therefore a future research should be done to justify these items and to provide a more sophisticated list of differences between traditional and digitally transformed organizations.

However, digitalization should be an essential component of the organisational strategy since the technology only does not contribute to organisational performance by itself. Therefore it is important that IT as an enabler of digitalization is part of an overall system that improves the creation of economic value [Piccoli and Ives, 2005].

3 FUTURE RESEARCH

Future research is needed to discover main differences between business process redesign or business process management and digital transformation. Further, since digital transformations is becoming more and more accepted concept there is a strong need to identify the key factors that are driving a company towards digital transformation. A lot has been written in the last months regarding the personnel responsible for starting and leading the process of digital transformation in the company.

However, all these guidance rules were based more on the individual consultants' impressions, and therefore a detail research on who should participate in the digital transformation together with knowledge and skills needed for successful transformation is more than welcome. Nevertheless, the debate regarding the importance of different knowledge and skills is as old as IT field itself, although up until the 1980s the importance of technical versus business and management skills was mainly emphasised [Byrd and Turner, 2001; Vitalari, 1985]. That view gradually changed in the 1990s when it became obvious that IT personnel need a combination

of technical, business and interpersonal skills [Mata et al., 1995]. It has been shown that technical and managerial skills are some of the determining factors of successful IT implementation [Caldeira and Ward, 2003] and the importance of the different skills and capabilities of IT personnel was confirmed in various studies [Lerouge et al., 2005; Parolia et al., 2007; Wade and Parent, 2001].

Nevertheless, the new era of digitalization also requests a new detailed research on knowledge and skills items, since proper cooperation between business and IT is becoming more important as ever before. Moreover, the future research should also focus on the trends in the digitalization and to the extent to which new business models may continue to affect the future business.

Some of the common items for the digitally transformed organizations were already presented; however, additional research should be carried out to offer a more detailed list of differences between traditional and digitally transformed organizations together with the impact of these items on the overall successful digital transformation.

4 CONCLUSION

The paper focused on one of the main contemporary business challenges, namely transforming the existing business models into the digital ones. The problem became even more complex since several existing companies are depending on the tradition and their previous success, which is making that transformation even harder. Therefore, it is particularly important that organizations rethink their existing business processes and existing business models. The paper thus focused on the business process management as an important prerequisite for successful digital transformation. Further, the paper shed light on the concept of business models that is significantly changing over the years. The paper also presents new challenges that are based on the digital transformation together with some main differences between traditional and digitally transformed organizations. Lastly, the possibilities for future research were discussed.

REFERENCES

[1] Afuah, A. (2004). Business models: A strategic management approach.

[2] Agarwal, R. and Lucas Jr, H.C. (2005). The information systems identity crisis: Focusing on high-visibility and high-impact research, *MIS Quarterly*, *29*, 381-398.

[3] Amit, R. and Zott, C. (2001). Value creation in e-business, *Strategic management journal*, *22*, 493-520.

[4] Avison, D.E., Cuthbertson, C.H. and Powell, P. (1999). The paradox of information systems: strategic value and low status, *The Journal of Strategic Information Systems*, *8*, 419-445.

[5] Bellman, R., Clark, C.E., Malcolm, D.G., Craft, C.J. and Ricciardi, F.M. (1957). On the construction of a multi-stage, multi-person business game, *Operations Research, 5*, 469-503.

[6] Bolton, R. and Hannon, M. (2016). Governing sustainability transitions through business model innovation: Towards a systems understanding, *Research Policy, 45*, 1731-1742.

[7] Byrd, T.A. and Turner, D.B. (2001). An Exploratory Analysis of the Value of the Skills of IT Personnel: Their Relationship to IS Infrastructure and Competitive Advantage, *Decision Sciences, 32*, 21-54.

[8] Caldeira, M.M. and Ward, J.M. (2003). Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises, *European Journal of Information Systems, 12*, 127-141.

[9] Chesbrough, H. (2007). Business model innovation: it's not just about technology anymore, *Strategy & leadership, 35*, 12-17.

[10] Chesbrough, H. and Rosenbloom, R.S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies, *Industrial and corporate change, 11*, 529-555.

[11] da Silva, C.M. (2013). Business Models: Theoretical Foundation and Application in E-business Companies: Doctoral Dissertation.

[12] Gartner (2006). Gartner's Position on Business Process Management,, 26.

[13] Gerth, A.B. and Peppard, J. (2016). The dynamics of CIO derailment: How CIOs come undone and how to avoid it, *Business Horizons, 59*, 61-70.

[14] Hamel, G. (2002). *Leading the revolution: How to thrive in turbulent times by making innovation a way of life*. Harvard Business School Press Boston, MA.

[15] Harmon, P. (2014). *Business Process Change: A Business Process Management Guide for Managers and Process Professionals*, (Third ed.). Morgan Kaufmann.

[16] Houy, C., Fettke, P. and Loos, P. (2010). Empirical research in business process management – analysis of an emerging field of research, *Business Process Management Journal, 16*, 619 - 661.

[17] Hugos, M.H. and Hulitzky, D. (2010). *Business in the cloud: what every business needs to know about cloud computing*. John Wiley & Sons.

[18] I-SCOOP. (2016). Digital transformation: online guide to digital business transformation, from http://www.i-scoop.eu/

[19] Kakabadse, A. and Korac-Kakabadse, N. (2000). Leading the pack: future role of IS/IT professionals, *Journal of Management Development, 19*, 97-155.

[20] Lerouge, C., Newton, S. and Blanton, J.E. (2005). Exploring the systems analyst skill set: perceptions, preferences, age, and gender, *Journal of Computer Information Systems, 45*, 12-23.

[21] Luo, J., Fan, M. and Zhang, H. (2012). Information technology and organizational capabilities: A longitudinal study of the apparel industry, *Decision Support Systems, 53*, 186-194.

[22] Mata, F.J., Fuerst, W.L. and Barney, J.B. (1995). Information technology and sustained competitive advantage: A resource-based analysis, *MIS Quarterly*, *19*, 487-505.
[23] Melão, N. and Pidd, M. (2000). A conceptual framework for understanding business processes and business process modelling, *Information Systems Journal*, *10*, 105-129.
[24] Melville, N., Kraemer, K. and Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of it business value, *MIS Quarterly*, *28*, 283-322.
[25] Morris, M., Schindehutte, M. and Allen, J. (2005). The entrepreneur's business model: toward a unified perspective, *Journal of Business Research*, *58*, 726-735.
[26] Nenonen, S. and Storbacka, K. (2010). Business model design: conceptualizing networked value co-creation, *International Journal of Quality and Service Sciences*, *2*, 43-59.
[27] Osterwalder, A., Pigneur, Y. and Tucci, C.L. (2005). Clarifying business models: Origins, present, and future of the concept, *Communications of the Association for Information Systems*, *16*, 1.
[28] Parolia, N., Goodman, S., Li, Y. and Jiang, J.J. (2007). Mediators between coordination and IS project performance, *Information & Management*, *44*, 635-645.
[29] Piccoli, G. and Ives, B. (2005). Review: IT-dependent strategic initiatives and sustained competitive advantage: A review and synthesis of the literature, *MIS Quarterly*, *29*, 747-776.
[30] Rich, E. (2008). Management fads and information delays: An exploratory simulation study, *Journal of Business Research*, *61*, 1143-1151.
[31] Rosemann, M. and vom Brocke, J. (2010). The six core elements of business process management Handbook on Business Process Management 1, Introduction, Methods and Information Systems, Springer, Berlin, pp. 105-122.
[32] Sarker, S., Sarker, S. and Sidorova, A. (2006). Understanding Business Process Change Failure: An Actor-Network Perspective, *Journal of Management Information Systems*, *23*, 51-86.
[33] Schaltegger, S., Hansen, E.G. and Lüdeke-Freund, F. (2015). Business Models for Sustainability Origins, Present Research, and Future Avenues, *Organization & Environment*, 1086026615599806.
[34] Shafer, S.M., Smith, H.J. and Linder, J.C. (2005). The power of business models, *Business Horizons*, *48*, 199-207.
[35] Sidorova, A. and Isik, O. (2010). Business process research: a cross-disciplinary review, *Business Process Management Journal*, *16*, 566-597.
[36] Slywotzky, A.J. (1996). *Value migration: how to think several moves ahead of the competition*. Harvard Business Press.
[37] Smart, P.A., Maddern, H. and Maull, R.S. (2009). Understanding Business Process Management: Implications for Theory and Practice, *British Journal of Management*, *20*, 491-507.

[38] Steininger, K., Riedl, R., Roithmayr, F. and Mertens, P. (2009). Fads and Trends in Business and Information Systems Engineering and Information Systems Research – A Comparative Literature Analysis, *Business & Information Systems Engineering*, *1*, 411-428.

[39] Stubbs, W. and Cocklin, C. (2008). Conceptualizing a "sustainability business model", *Organization & Environment*, *21*, 103-127.

[40] Venkatraman, N. and Henderson, J.C. (1998). Real strategies for virtual organizing, *MIT Sloan Management Review*, *40*, 33.

[41] Vitalari, N.P. (1985). Knowledge as a Basis for Expertise in Systems Analysis: An Empirical Study, *MIS Quarterly*, *9*, 221-241.

[42] Wade, M., R. and Parent, M. (2001). Relationships between job skills and performance: A study of webmasters, *Journal of Management Information Systems*, *18*, 71-96.

[43] Wagner, H.T. and Weitzel, T. (2007). Towards an IT production function: Understanding routines as fundamental for IT value creation, *Journal of Enterprise Information Management*, *20*, 380-395.

[44] Wahid, R.A. and Corner, J.L. (2009). Critical success factors and problems in ISO 9000 maintenance, *International Journal of Quality & Reliability Management*, *26*, 881-893.

[45] WEF. (2016). World Economic Forum: The Future of Jobs, 2016, from http://reports.weforum.org/future-of-jobs-2016/

[46] Zott, C. and Amit, R. (2008). The fit between product market strategy and business model: implications for firm performance, *Strategic management journal*, *29*, 1-26.