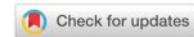


LEADERSHIP IMPACT ON THE EFFECTIVENESS IN DIGITALISED IT ORGANISATIONS

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Abstract: The study investigates the critical role of leadership in digitalized organizations, focusing on how different leadership styles influence organizational performance after the digital transformation process. Effective leadership in this context requires a blend of traditional leadership qualities and a deep understanding of digital technologies, enabling leaders to navigate their organizations through complex digital transitions while fostering innovation and adaptability. The study highlights that in a digitalized environment, leadership extends beyond traditional management practices. Digital leaders must cultivate a culture of continuous learning and collaboration, empowering employees to engage actively in the digital transformation process. The research also reveals that successful leaders in such environments must exhibit empathy, adaptability, and willingness to embrace uncertainty, as these qualities are essential for sustaining both personal and organizational growth. The research was conducted within a multinational software company, examining three teams with distinct leadership styles. Blake and Mouton's Management Grid was utilized to assess the leadership approaches, while Kaplan and Norton's Balanced Scorecard provided a comprehensive evaluation of teams performance across learning and innovation, internal processes, customer satisfaction, and financial outcomes. The study found that teams led by leaders with a strong balance between concern for people and results, specifically those aligned with the "Team Management" style, achieved superior performance across most of the metrics. These teams demonstrated higher levels of employee satisfaction, innovation, and customer satisfaction, coupled with better financial results, including increased profitability and lower operating costs. Furthermore, the findings suggest that in organizations characterized by high intellectual demands and digitalized operations, leadership styles that prioritize open communication, low power distance, and a balanced approach to people and task orientation are most effective. The study concludes that the success of digital transformation efforts is closely linked to the quality of leadership, with leaders who can adapt to the demands of the digital age, playing a crucial role in ensuring long-term organizational success.

Keywords: digitalization, digital leadership, organisational effectiveness

Field: Social sciences

1. INTRODUCTION

Digital transformation, and the digitalized business models, have a multifaceted nature that determines the complex impact they exert on the economy and society (Hensellek, 2020; Khan, 2016). One of the key factors in maintaining and improving the performance of organizations during the transition to digitalization, or of the already digitalized companies, is the leadership. In the digital age, it requires not only a good combination of traditional leadership qualities, but also a deeper understanding of the digital technologies. Leaders need to be able to steer their organisations through digital transformations while fostering innovation and adaptability.

The digitalized environment presents new challenges for leaders. According to De Araujo et al. (De Araujo, Priadana, Paramarta, & Sunarsi, 2021), a digitalized business strategy has a huge impact on every employee in the organization, but its effect is particularly strong for the digital leaders, which invariably leads to an evolution of their styles. These challenges include reducing budget while maintaining service standards, rethinking value creation to sustain growth, and globalizing support functions to increase cost efficiencies. In addition, leaders must engage in strategic, long-term planning to identify new growth opportunities in the face of the changing, and accelerated market dynamics. The advent of digitalization, in the form of disruption to traditional work practices and business, requires organizations to rethink their business and operating models, ensuring they invest in digital technologies and apply them intelligently and effectively to maintain focus on their core mission. Effective leadership in this era requires more than clarity of thought, it requires empathy, adaptability, and willingness to embrace uncertainty for both personal and organizational growth (Mihai & Cretu, 2019).

Khan (2016) explores the impact of digitalization on management and leadership, outlining six key characteristics of this new work atmosphere: greater interconnectedness; information abundance and accelerated decision-making, or also called "real-time management"; promotion of symbiotic relationships due to the humanising effect of the digitalization.

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To demonstrate the interconnectedness between organizational effectiveness and successful digital leadership, the author examines the production performance of three teams, part of a multinational, geographically dispersed, digitalized software company. The study was carried out one and a half years after the successful completion of the digitalization project within the unit, which the teams are part of. Financial results presented are on an annual basis unless otherwise stated.

2. MATERIALS AND METHODS

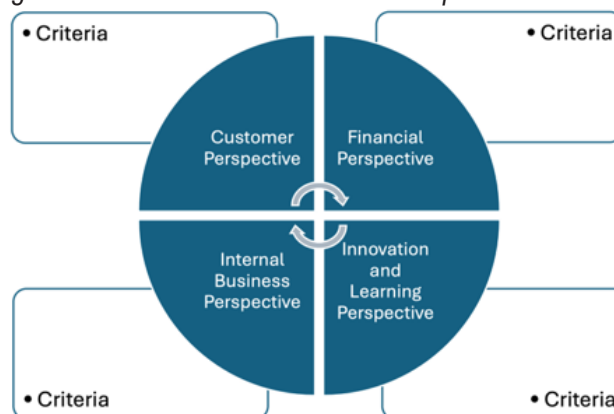
For convenience the examined teams are named A, B and C. The study was conducted in four phases. In order to assess the teams' effectiveness in a digital environment as a function of leadership, it is necessary in the **first stage** to determine the leadership styles of the respective leaders. For this purpose, the author uses Blake and Mouton's "Management Grid" (Blake & Mouton, 1985) (Blake & McCanse, 1991), which is a widely used method in the business for assessing leaders. It is based on the behavioural leadership theories and in particular the works of Lewin, Lippitt & White (1939) who, based on a number of studies, defined three main behavioural leadership styles: authoritarian, democratic and delegating ("laissez-faire"). Later, as part of studies at The Ohio State University and the University of Michigan, the hundreds of the analysed leadership behaviour types were reduced to two generalized categories: 1) organizational structuring; and 2) with attention to the people (Halpin & Winer, 1957). According to them, a leadership style can be oriented in two directions: task-oriented and relationship-oriented.

For the positioning of the three examined leaders on the Blake and Mouton's "Management Grid", through employee-completed questionnaires, each leader is given a score of one to nine on two criteria - concern for people and concern for results. Depending on the scores, they are positioned on a matrix as the extreme scores, and in particular the mid-point scores, define the leadership styles of respectively:

- **Impoverished management (1,1)** - characterized by minimal concern for results and people, i.e., mediocre leadership aimed at maintaining organizational membership but nothing more.
- **Authority-compliance management (9.1)** - extreme concern for performance. Work is organized in a way that minimizes group participation in decision making.
- **"Country club" management (1,9)** - prioritizes attention to people's satisfaction, creates a friendly environment and a moderate pace of work.
- **Team management (9.9)** - considered the most effective management style. The leader is strongly committed to excellent people satisfaction while maximizing results.
- **Middle-of-the-road management (5.5)** - the leader balances between the two criteria, maintaining performance at a moderately satisfactory level.

In the later phases of the research, in order to evaluate the effectiveness of each team, the author uses the method developed and presented in 1992 by Kaplan and Norton called the "Balanced Scorecard" (Kaplan & Norton, 1992). It is based on a project, aimed at developing a methodology, and metrics for assessing organizational effectiveness at the General Electric company. It was carried out by a group of employees who came to the conclusion that purely financial metrics were far from sufficient for the set objectives. As a result of their research, they arrived at a list of one financial and seven non-financial metrics, which Kaplan and Norton later reduced to four "perspectives" (Figure 1):

Figure 1. The "Balanced Scorecard" of performance indicators



Source: Kaplan & Norton (1992)

- **Innovation and Learning Perspective** – takes into account the company's ability and capacity

to innovate, improve its products and maintain the level of knowledge of its employees.

- **Internal Business Perspective** – complementing the customer perspective, this seeks to define and assess “what we should be best at”. It requires managers to focus on evaluating processes, decisions, actions that are relevant to the customer satisfaction.

- **Customer perspective** – managers are required to reduce their customer treatment policy to measurable criteria.

- **Financial Perspective** – consideration of the financial indicators and the direction, which they are targeting, as a result of changes in previous measurement perspectives and as a result of the implementation of set strategies.

The generalized set of criteria, used to evaluate the performance of the three teams under this study, consists of fourteen indicators, distributed across the four perspectives in the Balanced Scorecard, and is as follows (the source of data is mentioned in parentheses for each criterion):

Innovation and Learning Perspective

1. Overall employee satisfaction regarding opportunities for development and innovation. (questionnaire)

2. Average development time per new product release. (company data)

3. Annual research and development expenditure. (company data)

4. Investment in staff training and development. (company data)

Internal Business Perspective

1. Average decision-making time. (questionnaire)

2. Efficiency of processes for review and approval of innovation proposals. (questionnaire)

3. Accessibility to environments and development tooling. (questionnaire)

4. Average level of initiative for process, or product innovations on an employee basis. (company data)

Customer Perspective

1. Customer satisfaction rate (NPS [Net Promoter Score]: -100 to +100). (company data)

2. Dynamics (increase/decrease) of the number of customers, year-on-year. (company data)

3. Marketing expenditure. (company data)

Financial Perspective

1. Total operating expenditure. (company data)

2. Year-on-year net sales growth. (company data)

3. Net profit. (company data)

In the **second stage** of the study, questionnaires were used to qualitatively and quantitatively measure a number of factors in the areas of the Innovation and Learning Perspective and for the Internal Business Perspective, which are necessary for evaluation according to the Balanced Scorecard.

The **third stage** examines the criteria relating to the Customer Perspective. The focus is on three indicators: customer satisfaction rate (NPS - Net Promoter Score: values from -100 to +100); customer dynamics (increase/decrease) on an annual basis in %; marketing expenditure.

In the **fourth stage** of the study, the last essential part of the Balanced Scorecard is examined - the financial perspective. This is the final portion of data that, which when intersected with what we know so far, would give us a clearer perspective on the relationship between the leadership and the performance of the teams.

3. RESULTS

In terms of positioning the team leaders on the Management Grid, the Team Leader A stands out as being positioned in the “Team Management” quadrant. The leader of Team B is on the borderline between “Impoverished Management” and “Authority-compliance Management”, and the one of Team C is in the “Impoverished Management” quadrant.

Table 1 presents the summary information and the specific values of the examined indicators in the Balanced Scorecard. For each of them, the most favourable value is bolded.

At first glance, it is striking that the team with the most leading scores in the criteria is Team A. In the Innovation and Learning perspective, it has: the highest overall satisfaction in terms of development and innovation opportunities; the lowest annual research and development costs; and the highest investment in staff training and development. It lags behind only in the indicator of average development time for new product releases.

In the Internal Business Perspective, due to the specific situation in the company, the leaders do not have the ability to significantly influence the criteria Average decision-making time, Efficiency of processes for review and approval of innovation proposals, and Accessibility to environments and development tooling. However, they have a key role for the indicator Average level of initiative for process, or product innovations on an employee basis. The difference between departments A and B is small (0.19 vs. 0.17), but Team A's score is almost three times that of Team C, at 0.07. This enables us to conclude that the leaders of Team A and Team C have succeeded in creating a positive environment in this department and people feel on the one hand, interested and involved and, on the other hand, sufficiently free and confident that their suggestions would be listened to and considered by the management.

Looking at the Customer Perspective, we see a significant lead of about fifteen points on Team A's customer satisfaction rate (NPS). We could interpret and explain this by higher employee motivation, manifested in more attention to the quality of the products, and services they provide. Their level of commitment would not be so high if their leader failed to motivate them properly, or failed to help them grow enough, or failed to make them associate themselves fully with the team, the company and its goals.

Given the internal specificities of the company, we consider the other two factors in the Customer Perspective to be irrelevant to the study as they are not directly dependent on the actions and qualities of the leaders of the respective teams.

The final Financial Perspective, and the results in it, contributes to a quite distinct picture of the effectiveness of the studied departments. Apart from the small lead of Team B over Team A in the Year-on-year net sales growth indicator - 5.83% vs. 5.1%, the values for the other two criteria Total operating expenditure and Net profit are entirely in favour of Team A, and with a significant lead of 13% and 23%, respectively, over the department with the next result.

From the values of the indicators presented in the Balanced Scorecard, it is easy to conclude that Team A is more efficient than the teams B and C. With fewer costs, it achieves higher profits while its customers are more satisfied. Its members are more committed to the company's goals, more motivated, more prepared and operate in a more productive environment. In addition, we found the positive impact on motivation, commitment and higher performance of employees placed in an environment with more explicit care for the people.

Table 1. Balanced Scorecard results of teams A, B and C

Innovation and Learning Perspective	Team A	Team B	Team C
<i>Overall employee satisfaction regarding opportunities for development and innovation</i>	2.66	2.21	2.13
<i>Average development time per new product release (days)</i>	182.00	189.33	169.67
<i>Annual research and development expenditure (million EUR)</i>	1.43	1.89	1.69
<i>Investment in staff training and development (per person in euros)</i>	1126.33	865.67	881.67
Internal Business Perspective			
<i>Average decision-making time</i>	2.29	1.59	1.88
<i>Efficiency of processes for review and approval of innovation proposals</i>	2.31	2.04	2.14
<i>Accessibility to environments and development tooling</i>	2.94	2.75	2.79
<i>Average level of initiative for process, or product innovation on an employee basis</i>	0.19	0.17	0.07
Customer Perspective			
<i>Customer satisfaction rate (NPS: from -100 to +100)</i>	54.33	40.00	37.67
<i>Dynamics (increase/decrease) of the number of customers, year-on-year (%)</i>	6.90	4.93	8.17
<i>Marketing expenditure (thousand EUR)</i>	210.00	214.33	201.33
Financial Perspective			
<i>Total operating expenditure (million EUR)</i>	1.75	2.25	2.02
<i>Year-on-year net sales growth (%)</i>	5.10	5.83	4.23
<i>Net profit (million EUR)</i>	8.76	5.36	6.73

Source: Author's research

4. DISCUSSIONS

The outcomes of this study confirm and amplify those of earlier research works (Mollah, Choi, Hwang, & Shin, 2023; Yukl & Gardner, 2020; Nandasinghe, 2020) that highlight the link between digital leadership and sustainable organizational performance, observing its pervasive influence across organizational echelons, from top managers, through leaders, to employees.

The environment in which the study was conducted, and the teams examined, were intentionally chosen to allow for the evaluations to be done based on common grounds. The three teams are part of the same company, in the same department, reporting to the same management line. They are also comparable by size, talent, competences, responsibilities and products they develop. This allows one to state with a high degree of certainty that as most of the other important variables are virtually equalised, the leadership is the major distinguishing factor, causing the Team A to outperform the other two.

The results from the Balanced Scorecard show clear correlation between criteria related to employees' personal growth, their own perceived value, and the customer and financial ones, which on the other hand, are of utmost importance for the company's performance and overall wellbeing. Another important quality of the successful digital leader surfaces through the Internal Business Perspective of the Balanced Scorecard. It shows that it is not enough for the leader to be a good visionary and a good presenter only, but also they must be a good facilitator, who eases everyday work and successfully copes with interpersonal and inter-team challenges.

Examining the situational details further, taking into account the digitalised and virtualised environment in which the teams operate, it becomes clear that having a leader with people-oriented skills is crucial for an organisation with ambitions to thrive in the digital era. The lack of "proper" human-to-human contact takes each employee's needs of motivation in a different dimension. If in a standard physical office environment, it could be possible for an authoritarian leader to prosper through stricter local control, in a virtual environment that is practically impossible. Thus, for a leader to be successful in that new realm, they must put more emphasis to boost the natural motivation forces within the people by demonstrating sincere care, by listening and taking into account their needs, their growth aspirations, and by listening to what is important for them, what are their views on the processes, tooling, and different other aspects of their shared endeavours. I.e., the leader should foster a culture in which the employee would perform well out of the natural urge to pay back for the good deeds they are an object of. In the digitalized company, as Bass and Riggio (2005) state, the leader have to foster a culture of continuous learning and collaboration as digitalization requires constant adaptation and innovation. It also requires leaders to empower employees by encouraging their creativity and active participation in the digital transformation process.

5. CONCLUSIONS

In different types of organizations, performing different activities and having different levels of employee education and intelligence, the most appropriate and the most prevalent leadership styles are different. If people's motivation and commitment are considered as one of the major factors of the organizational effectiveness, we can come to the conclusion that in digitalised organisations, where the teams are similar to the ones in the study, which perform intellectual activities, and where presumably the members have a relatively high IQ, the most successful leadership styles would be those, based on a balanced concern for people and goals, where there is direct, honest and open communication, and the perceived power distance is small.

REFERENCES

- Bass, B. M., & Riggio, R. E. (2005). *Transformational Leadership* (2 ed.). New York: Psychology Press.
- Blake, R. R., & McCanse, A. A. (1991). *Leadership dilemmas - Grid solutions*. Houston: Gulf.
- Blake, R. R., & Mouton, J. S. (1985). *The managerial grid III*. Houston: Gulf.
- De Araujo, L. M., Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations: an overview. *International Journal of Educational Administration, Management, and Leadership*, 2, 45-56.
- Halpin, A. W., & Winer, B. J. (1957). A factorial study of the leader behavior descriptions. In R. M. Stogdill, & A. E. Coons, *Leader behaviour: Its description and measurement* (pp. 271-439). Columbus: Ohio State University Bureau of Business Research.
- Hensellek, S. (2020). Digital Leadership: A Framework for Successful Leadership in the Digital Age. *Journal of Media Management and Entrepreneurship*, 55-69.
- Kaplan, R. S., & Norton, D. (1992). The balanced scorecard- measures that drive performance. *Harvard Business Review*, Jan-Feb, 71-79.

- Khan, S. (2016). Leadership in the digital age – A study on the effects of digitalisation on top management leadership. Stockholm: Masters Thesis Stockholm Business School.
- Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of aggressive behavior in experimentally created social climates. *Journal of Applied Psychology*, 10, 271–299.
- Mihai, R.-L., & Cretu, A. (2019). Leadership in the Digital Era. *Valahian Journal of Economic Studies*, 10(24)(1), 65-72.
- Mollah, A., Choi, J.-H., Hwang, S.-J., & Shin, J.-K. (2023). Exploring a Pathway to Sustainable Organizational Performance of South Korea in the Digital Age: The Effect of Digital Leadership on IT Capabilities and Organizational Learning. *Sustainability*, 15, 1-18.
- Nandasinghe, G. (2020). Leadership and Organization Performance: A Review on Theoretical and Empirical Perspectives. *Global Journal of Management and Business Research*.
- Yukl, G. A., & Gardner, W. L. (2020). *Leadership in organizations*. London: Pearson.