

THE IMPACT OF EMPLOYEE ENGAGEMENT ON ORGANIZATIONAL AGILITY IN THE DIGITAL AGE: A CASE STUDY OF THE SOFTWARE DEVELOPMENT COMPANY

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ABSTRACT

In the digital age, various concepts and activities of organizational agility and employee engagement should be observed from different perspectives and adapted to a new way of doing business that requires a fast response to all changes in the environment. Understanding the impact of employee engagement on organizational agility is a “conditio sine qua non” for the long-term success, growth, and development of any organization. The aim of this paper is to examine and analyze the key implications of employee engagement on organizational agility in the digital age. Research was based on case study method in one software development company from the Republic Serbia. Interview technique was applied for data collection. The analysis of qualitative data collected during May 2023 showed that engaged employees from the technical support department represent the lever for organizational agility. During their work, technical support consultants receive valuable information from clients, and they are the first in the chain that point out needed software improvements and changes. A high level of employee engagement is important for organizational agility, which refers to the ability of an organization to respond and react quickly and effectively to the external and internal changes, and to adapt to those changes in a profitable way.

Keywords: flexibility, agility, engagement, digital age, organizational change

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INTRODUCTION

The essential characteristics of successful organizations in the digital age are: agility, flexibility, adaptability, collaboration, networking, risk-taking, innovation, orientation to new technological advancements, as well as continuous search for new opportunities and chances. An additional characteristic that becomes an attractive topic of numerous research and positions itself as a necessity for fruitful functioning of any organization is employee engagement [1]. Employee engagement concerns employers, leaders, and managers because it highly affects overall organizational performance and its functioning [2]. On the other hand, agility, as a valuable characteristic of contemporary organizations, is necessary for survival and success in the digital age. The focus of agile organizations is on achieving and maintaining the speed and responsiveness to variable conditions in internal and external environments, with the primary goal to achieve long term survival and success. Agile organizations continuously adapt themselves to all the changes in the environment, using their core values and principles.

The aim of this paper is to examine and analyze the implications of employee engagement on organizational agility in the digital age and to answer on question what effect employee engagement has on organizational agility. The importance of this research is derived from the fact that the digital age is characterized by continuous, unpredictable and radical changes that lead to significant implications in the way any organization functions and operates. In order for organizations to succeed in responding to the challenges that the digital age imposes on them, they must be agile. One of the significant factors affecting agility is the engagement of employees, as a measure of their involvement, dedication, and desire to work. Therefore, in contemporary business environment it is necessary to examine how employee engagement affects the agility of organizations. Bearing in mind that these contemporary concepts are insufficiently researched in practice, the key contribution and originality of this research is in emphasizing all the possible effects that engaged employees have on organizational agility and the functioning of organizations in the digital age, but also in giving key recommendations to managers and leaders on how they can improve organizational agility with highly engaged employees.

The paper is organized as follows. The theoretical background of the paper deals with employee engagement and organizational agility - key definitions, role, and the significance for functioning of the organizations in the digital age. Methodological part of the paper presents a procedure of conducted case study in one software development company from the Republic of Serbia, while the last part of the paper is focused on research results and discussion of research findings. In conclusion are given the key implications of conducted research, as well as limitations and propositions for future research on this topic.

EMPLOYEE ENGAGEMENT IN THE DIGITAL AGE: DEFINITIONS, ROLE AND SIGNIFICANCE

The concept of employee engagement has become a widely represented topic in the academic community, as well as in business practice [3]. The increasing interest in this concept led to various definitions. However, all authors agreed on one crucial point - employee engagement is the key to the success of any organization. Engagement in the work environment could be described as the "immersion" of employees in their work roles [4]. That is a permanent, positive, affective-motivational state of employee fulfillment characterized by a high level of activity and satisfaction [5]. Engaged employees give themselves physically, cognitively, and emotionally while doing the job. Certain authors believe that engagement is narrowly focused attention on tasks and activities so that employees have the feeling that "time flies" [6]. In addition, engagement in the work environment implies a positive attitude towards the organization and its values [7], as well as the feeling of employees that the organization is integral part of their life [8]. Engagement is characterized by vigor, dedication, and absorption [9]. Vigor represents a high level of energy and mental resilience during work, especially in some difficult times, as well as willingness to invest extra effort in the workplace. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge, while absorption represents a fully concentrated and happily engrossed employee in his work – focused attention, complete control, and intrinsic enjoyment. In this context, engagement represents the process of winning the hearts, souls and minds of employees and stimulating their desire and passion to achieve excellent results [10]. Some authors describe employee engagement as the opposite of burnout [11]. In contrast to engagement, which implies attachment, commitment and

positive energy, burnout syndrome represents physical and/or psychological exhaustion, loss of energy, depersonalization, cynicism, mental distance from the work, sense of inefficiency and lack of achievements [12]. In practice companies defined employee engagement as: the degree of the employee's work involvement, the employee's desire to stay in the organization, the employee's effort to work hard and dedicate himself to work tasks, the employee's passion during work [13].

In the process of defining engagement, it is important to highlight its broader scope than job satisfaction and motivation. Employee satisfaction represents a passive and affective state, while engagement is an active and visible state [14]. Therefore, engagement is a broader concept than satisfaction, and includes the emotional, physical, and cognitive aspects of the employee [15]. A satisfied employee does not have to be engaged, while an engaged employee is always satisfied [16]. Based on the presented definitions, it can be concluded that there are different levels of employee engagement. The results of research by the world-famous organization Gallup showed that employees could be: engaged, disengaged and actively disengaged [17]. Their key characteristics are presented in Table 1.

Table 1. The key characteristics of engaged, disengaged, and actively disengaged employees

Engagement	Key Characteristics
Engaged Employees	<ul style="list-style-type: none"> ▪ Desire to contribute to the organizational activities and goals, ▪ Invest extra effort, time, and energy, ▪ Observe the organizational goals as personal (individual) goals, ▪ Optimistic regarding the future of the organization, ▪ Have a high degree of creativity and innovativeness, ▪ Rarely or almost never (unjustified) absent from work, ▪ Loyal, committed and emotionally attached to the organization, ▪ Share information and knowledge with colleagues, ▪ Take the role of brand ambassadors of the organization;
Disengaged Employees	<ul style="list-style-type: none"> ▪ Focused only on daily tasks, not oriented towards long run goals, ▪ After completion of short run tasks, disconnected until they receive a new one, ▪ Believe that internal justice in organization is violated i.e., that their contribution was not adequately rewarded, ▪ Do not have good relations with managers and co-workers, ▪ Do not use their creativity and innovativeness, ▪ Do not use their full potential, knowledge and skills, ▪ Ready to leave the organization as soon as another, better opportunity appears;
Actively Disengaged Employees	<ul style="list-style-type: none"> ▪ Absent and excluded even when they are physically present at work, ▪ Pessimistic about changes and innovations, ▪ Often absent from work (contribute to a high rate of absenteeism), ▪ Not attached to the organization and ready to leave it as soon as another opportunity appears, not necessarily a better one, ▪ Spread a negative attitude about the organization to other employees, but also outside organization, ▪ Often undermine the overall working atmosphere and have a negative effect on other employees.

Source: Adapted from [17] and [18]

As it is presented in Table 1, an engaged employee is inspired by his work, cares about the future of the organization and is ready to invest extra effort for the goals of the organization [19]. When an employee is engaged, he gives himself completely to the work and performs his tasks and activities with energy and enthusiasm [20], often forgetting about himself and his needs [21]. Unlike engaged, disengaged employees have a passive attitude and they do not contribute to the organizational goals. Their first and foremost goal is embodied in the need to work as little as possible and to receive a salary [22]. At the end, employees can be actively disengaged - their behavior and attitudes negatively affect the entire organization and working atmosphere.

THE EFFECTS OF EMPLOYEE ENGAGEMENT ON ORGANIZATIONAL AGILITY

In the digital age, organizations should carry out their strategies and plans as quickly as possible in order to adjust themselves to a dynamic, uncertain, and unpredictable environment. Agility has become an important characteristic for survival, as well as for the long-term success of any organization. Organizational agility refers to the ability of an organization to respond and react quickly and effectively to external and internal changes, and to adapt to those changes in a profitable way. Being an agile organization means having the ability to use the resources to respond in a proactive manner and to adapt to the changes in market conditions with the primary goal of satisfying the growing requirements and needs of the customers. It is the ability of the organization to introduce any change, when necessary, in order to ensure the goal achievement [23]. Furthermore, organizational agility is the capacity of the organization to offer high-performance, high-quality, low-cost products and services that meet the requirements of customers [24]. It can be observed from different perspectives: strategic agility (capacity to seize new opportunities), portfolio agility (capacity to shift resources quickly and effectively between different business fields), and operational agility (capacity to exploit all opportunities within the existing business model) [25]. Organizational agility framework consists of the following elements [26]:

- Sensing is the ability of the organization to early detect the new opportunities and threats from the external environment.
- Searching is the organizational ability to create new internal opportunities and strengths.
- Seizing is the organizational ability to make unbiased decisions about the strategy, business model and capability transformation.
- Shifting is the organizational ability to fast and effectively implement a new strategy, business model and capability.
- Shaping is the organizational ability to execute and scale the new capabilities to affect the external environment.

Employees are very important for achieving and maintaining organizational agility [27]. In Table 2 are presented the key characteristics of agile employees.

Table 2. The key characteristics of agile employees

Characteristics	Description
Proactive	<ul style="list-style-type: none"> ▪ Anticipate problems related to changes, ▪ Propose solutions for anticipated problems, ▪ Take the initiative,
Adaptive	<ul style="list-style-type: none"> ▪ Interpersonal and cultural adaptability, ▪ Active collaboration, ▪ Constant learning, ▪ Professional flexibility,
Resilient	<ul style="list-style-type: none"> ▪ Positive attitude to changes, new ideas, technologies, ▪ Tolerance to uncertain and unexpected situations, ▪ Coping with stress.

Source: Adapted from [28]

Employee engagement is positioned as the key success factor of any agile organization [29], and contemporary organizations make significant efforts to engage their employees [30]. Positive effects of employee engagement are: lower rate of employee absenteeism and turnover, lower rate of work errors, less fraud and theft, less destructive conflicts, lower level of stress, higher level of cooperation and exchange of knowledge between employees, high working ethic, positive working atmosphere, active participation of employees in organizational changes, greater degree of satisfaction, motivation, commitment, and loyalty. Consequently, there are greater flexibility, agility, innovation, increased customer satisfaction and better reputation of the organization [31]. Practice has also shown that engaged employees have better mental and physical health [32], and that they are more involved in activities related to corporate social responsibility - socially and environmentally oriented activities [33]. As a result of all mentioned positive effects, there are also financial benefits, such as: return on investment, higher returns for shareholders, capital gains, earnings per share, and higher level of profitability. It is obvious that engaged employees lead to high-performing and agile organizations [34]. Agile employees need to be

proactive, adaptive, and resilient. Proactivity refers to the initiation of activities that will lead to a solution and change, while adaptability requires constant learning and the ability to work with other employees from different backgrounds. Resilience describes the ability of employees to cope with stress and to function effectively in stressful and uncertain circumstances [35].

Agile organizations are focused on continuous growth, development, change, and learning from mistakes and failures. Engaged employees are ready and willing to invest their extra effort and time to analyze internal and external environments, to encompass all needs and preferences of customers, to improve existing business processes, to propose new, better ones, and to put all their strengths to improve the overall functioning of the organization. They are open to new experience, knowledge, ideas, solutions, and risk-taking, and take an active participation in decision making and problem solving.

RESEARCH METHODOLOGY

The major research question (RQ) is: What effect does employee engagement have on organizational agility?

With the aim to examine the impact of employee engagement on organizational agility, a case study was conducted in one software development company which operates in the Republic of Serbia. The company preferred to stay anonymous due to fierce competition in the market, so for that reason, in this paper will be coded by the name Company "A". Case study was used as research method since this paper examines numerous data sources, both primary and secondary, to provide a holistic analysis and conclusions, from various perspectives [36]. This company was selected for the case study due to the following three reasons. The first reason is the fact that Company "A" operates in the IT industry, which by default needs to be agile to satisfy the constantly changing needs of the clients. The second reason is the fact that Company "A" measured the level of employee engagement in the previous years (2021 and 2022) and introduced some activities for its further improvement. The third reason is the fact that Company "A" conducts on a yearly basis a survey regarding the satisfaction of its clients.

After analysis of secondary data regarding conducted surveys and internal documents, the interview techniques were used to obtain primary data. The interviews were semi-structured with following set of questions: (1) gender; (2) education; (3) age of respondents; (4) length of working in company; (5) readiness and willingness to voluntarily work additional hours when necessary; (6) readiness and willingness to invest more time and effort; (7) readiness and willingness to promote a positive atmosphere and relaxed conversation; (8) feelings of pride and happiness when clients are satisfied; (9) willingness to share information and knowledge with other team members and coworkers; (10) focus on continuous product improvements; (11) focus on enhancing client satisfaction and experience; (12) quick adaptation to the needs and requirements of clients; and (13) providing suggestions and instructions for product improvements. After preparing the list of questions, a pilot study was conducted to assess the comprehensibility of the questions and their meaningfulness. Top managers of the company participated in the pilot study in April 2023. Based on their comments and suggestions, some questions were formulated more precisely and explained in more detail, in order to make it clearer to the respondents and to eliminate the possibility of misinterpretation of the questions.

The approval from top management of the company was given to conduct interviews with five employees from the technical support department during May 2023. Employees from technical support represent the nexus between clients and the software development team. The top management of Company "A" stated that technical support consultants are the lever of organizational agility because they are the first in the chain that point out needed software improvements and changes. Technical support consultants receive valuable information from clients, and that is why they need to establish and nurture a good relationship with clients. Other employees on different job positions were engaged in projects with strict deadlines and thus unavailable to participate in this research.

Interviews were conducted on the company's premises, "face to face" and independently with every respondent. The interviews lasted, on average, 37 minutes. All responses were audio recorded, transcribed, organized and grouped into coherent categories. The analysis of collected answers were performed using the coding procedure, while the special emphasis was placed on the theoretical narrative of respondents in which they expressed actual scenarios and facts about their jobs.

RESEARCH RESULTS

Company “A” operates more than five years and is specialized in software development. Regarding the size expressed in the number of employees, it belongs to small companies, having 20 full-time employees among which are: programmers, software developers, software testers, implementation consultants, technical support consultants and project managers. According to the nature of its core business, Company “A” uses modern software tools and technologies for easier collaboration and project management.

Employee engagement and satisfaction surveys that were conducted in Company “A” in 2021 and 2022, showed that all employees have a high level of employee engagement and satisfaction. They are satisfied with salaries, working conditions (modern equipped offices, height adjustable desks, comfortable chairs, large monitors, especially ergonomic mice, modern kitchen), flexible working hours (they can work at any time they want during a day), possibility to work from home, working atmosphere, organized team building activities, and opportunities for further growth and development.

On the other hand, the client satisfaction surveys conducted in 2021 and 2022 also showed great results expressed in high marks (average mark was greater than 4.60) regarding the overall client satisfaction with software solutions and provided technical support.

Basic information about respondents that participated in this research are presented in Table 3. Technical support consultants that participated in the interviewing process finished high schools or faculties from the technical field and worked in Company “A” from two to five years. Four of the employees are males, while one employee is a female. All of them are between 21 and 30 years old. The average age of technical support consultant is 25.4, while their average company tenure is 3.2 years.

Table 3. Basic information about respondents

Respondent (R)	Gender	Education	Age (years)	Company tenure (years)	Length of the interview (minutes)
R1	Male	High School	21	2	31
R2	Male	Faculty	23	2	35
R3	Female	Faculty	30	4	44
R4	Male	High School	27	5	42
R5	Male	Faculty	26	3	33
Average			25.4	3.2	37

Source: authors' calculations

Results of the conducted interviews are presented in Table 4. Almost two thirds (60%) of respondents are ready and willing to voluntarily work additional hours when necessary and are willing to share information and knowledge with other team members and coworkers. Out of the total number of respondents, 80% of them are ready and willing to invest more time and effort at work, to promote a positive atmosphere and relaxed conversation and have feelings of pride and happiness when clients are satisfied.

Table 4. Responses from technical support consultants

Answer	Respondents (R)
Readiness and willingness to voluntarily work additional hours when necessary	R1, R2, R5
Readiness and willingness to invest more time and effort	R2, R3, R4, R5
Readiness and willingness to promote a positive atmosphere and relaxed conversation	R1, R2, R3, R5
Feelings of pride and happiness when clients are satisfied	R1, R2, R4, R5
Willingness to share information and knowledge with other team members and coworkers	R1, R4, R5
Focus on continuous product improvements	R1, R2, R3, R5
Focus on enhancing client satisfaction and experience	R1, R2, R3, R4, R5
Quick adaptation to the needs and requirements of clients	R2, R3, R4, R5
Providing suggestions and instructions for product improvements	R1, R2, R3, R5

Source: authors' calculations

Technical support consultants in Company “A” are ready and willing to voluntarily work overtime if clients call them at the end of working hours and report some urgent problem or issue. Respondent 1 stated that: “Although we have different deadlines for solving different types of issues, I always try to be as quick as possible. I do not feel any pressure from my manager, but I want to stay overtime to solve the issue. As

a result, when I need some information about new regulations and needed software customization, clients are also willing to share that information with me.”

Results showed that technical support consultants in Company “A” are ready and willing to put extra effort and time into providing the best possible solution in the long run – they are focused on solutions which are best suited to the clients’ demands.

“Once I had a call from a client a couple of minutes before the end of my working time. I had two options on how to solve the issue: to fix it in five minutes and to go home, or to stay overtime and find the best possible solution in the long run. I chose the second option. On the other hand, the same client was very agile when I needed some help regarding the possibilities for future software upgrade and improvement.” – Respondent 2.

Technical support consultants in Company “A” always spread a good atmosphere and relaxed conversation, even though they have a lot of work to do. *“I am responsible for some older clients, near their 50s and 60s. Sometimes they call me with the words “I know that you already told me several times about that option, but I forget it. Please, remind me.” I am always kind, even if I have five more calls at the same time, and scheduled meetings, I manage to kindly show the option to clients. In the same way, when I have some doubts regarding software improvements or adaptation to the new regulations, clients are ready to unselfishly share their knowledge with me”.* – Respondent 3.

Furthermore, results showed that technical support consultants in Company “A” feel pride and happiness when clients are satisfied, and especially value their personal messages or e-mails in which they express their gratitude. *“The great feeling for me is when a client sends me a message “Good job, thank you!”. I feel so proud, and each message from clients boosts my morale and motivation. I have saved all messages from clients”.* – Respondent 4.

Other results showed that technical support consultants in Company “A” share information and knowledge with other colleagues and teams. They have created a software-based knowledge base, in which they put all important problems, facts and solutions regarding software or clients. *“I was the initiator of the knowledge base. In that way, the entire technical support team can easily find the solution for some common problems that frequently appear. We are also able to candidate those problems to be a part of the future software improvements”.* – Respondent 5

Finally, obtained results showed that all technical support consultants which participated in this research are focused on enhancing client satisfaction and experience, while majority of them (80%) are focused on continuous product improvements, quick adaptation to the needs and requirements of clients, and providing suggestions and instructions for product improvements.

DISCUSSION OF RESEARCH FINDINGS

Research results presented in this paper showed that technical support consultants fostered organizational agility with their attitudes, behavior, and manner of work. They are ready and willing to put all their effort and energy in solving clients’ problems and/or requests, and they actively search new possibilities on how to improve product and enhance customer satisfaction and experience.

Agility does not only represent the adaptation to emerging needs and circumstances, but also involves proactive behavior and search for new opportunities and chances [37]. For that reason, it is important to point out the importance of establishing good relationships with clients, based on mutual understanding, empathy, openness, and trust. Technical support consultants in Company “A” achieve both factors of organizational agility: they properly respond to client requests, and they exploit all available opportunities for software improvements. Furthermore, the findings showed a high level of customer satisfaction and engagement. This is consistent with the results that customers are increasingly becoming active co-creators of value and significant contributors to product development and service enhancements [38]. The similar conclusions were obtained in research of 423 employee-customer dyads from diverse industries which revealed that employee engagement in a service field led to improved customer assessments of service experiences and a more favorable functional assessment of overall service [39]. Furthermore, research results in which 357 senior executives participated in Chinese digital new enterprises suggested that entrepreneurial and adaptive agility played mediating roles in promoting innovation performance in digital new ventures [40]. The study, which included 460 participants from Jordanian telecommunications companies, found that organizational agility is an important aspect in maintaining a

competitive advantage [41]. Other studies have indicated that in the digital age, organizational agility is regarded as a vital asset for any company. While organizational inertia is directed to the inclination to remain with the status quo and to disregard changes, organizational agility is the ability of companies to detect and use all ongoing changes as possibilities for something new and different [42]. Furthermore, the relevance of organizational agility in the contemporary business environment, shaped by digital technologies and tools, is constantly increasing [43].

Research results presented in this paper point out that technical support consultants in Company "A" provide agile customer service, with a personalized approach and proactive support, followed by understanding and empathy. Company "A" prioritizes service excellence through employee engagement and agility. The top management of the Company "A" had an enormous role in this process because it recognized the importance of satisfaction and engagement, not only among clients, but also among employees. The energy, support and clear vision of the top management had a great impact on overall engagement and organizational agility. The obtained results may be beneficial for managers and leaders of other software companies, especially considering that organizational agility represents a catalyst for navigating changes and discovering new opportunities for long-term survival and success [44].

Organizations which are agile are flexible, skilled, and ready to adapt and modify themselves in order to maximize benefits and overall results [45]. Numerous studies have showed that agile organizations can gain higher customer satisfaction, engagement, centrality, faster time to market, higher revenue, lower costs [46], and greater value for all stakeholders [47].

CONCLUSION

Organizations are in continuous interaction with their internal and external environment. With the changes in environment, the organizational concepts and practices also change, as well as the ways of their application. Organizational agility and employee engagement are not the exception. In the digital age, agility has become an important characteristic for survival and success of any organization. Organizations that intend to be agile need to have engaged employees. Engaged employees are ready and willing to invest extra effort and time to analyze internal and external environments, to encompass all needs and preferences of customers, to improve existing business processes, to propose new, better ones, and to put all their strengths to improve the overall functioning of the organization. They are open to new experience, knowledge, ideas, solutions, and risk-taking, and take an active participation in decision making and problem solving.

Research conducted in this paper is based on a case study conducted during May 2023 in one software development company from the Republic of Serbia. Research results showed that engaged employees from the technical support department represent the lever for organizational agility. During their work, technical support consultants receive valuable information from clients, and they are the first in the chain that point out needed software improvements and changes.

The key implication of this paper lies in the fact that understanding the impact of employee engagement on organizational agility is a *conditio sine qua non* for the long-term success, growth, and development of any organization. In general, presented results in this paper can be valuable not only for practitioners, but also for the academic community and policymakers. Obtained results can be useful for managers and leaders of organizations, who intend to build, improve, and nurture organizational agility and employee engagement in the digital age. Furthermore, obtained results may be valuable to project managers and team leaders who want to improve their software solutions and overall customer satisfaction and experience.

This paper is accompanied by certain limitations that should be considered. The main limitation of this paper lies in the sample size and structure – only one organization was used as a case study and only five employees participated in the interviewing process. The organization is from the IT industry, which is by default prone to agility. Furthermore, only employees from technical support participated in interviewing processes, while other employees were engaged in different projects with strict deadlines and thus unavailable to participate. Consequently, obtained results could not be generalized. Another limitation is applied research technique. The interview technique used for data collection consisted of a limited number of prepared structured questions. Furthermore, interview techniques can be subjective and sometimes biased because respondents answer questions in real-time and may not mention all important facts and crucial details. Nevertheless, having in mind the novelty of this research topic, obtained results in this research may be useful for other organizations which operate in different industries and have intensive relationships with clients.

In general, future research on this topic should encompass more employees in different job positions and more companies from different industries and countries. Furthermore, it will be beneficial to use a questionnaire technique for primary data collection to obtain results that are more objective compared to interview technique.

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