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## Development of Teal Organisations in Economy 4.0: An Empirical Research

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### **Abstract:**

**Purpose:** The aim of this article is to present the impact of Economy 4.0 on the development of Teal organizations. It has been assumed here that every organization must adapt to change by applying soft management factors (trust, knowledge, agility) in a changing reality.

**Methodology:** During the research, the following work was carried out: desk research, individual in-depth interview, and a questionnaire. The study covered 300 respondents from various micro and small enterprises. The article is based on the first stage of empirical research conducted in 2020.

**Findings:** The research results show that organizations must adapt to changes resulting from the evolution of organizations in Economy 4.0. Flexibility in adapting to change, agility and the willingness of employees to gain new work experience will be particularly demanded by Economy 4.0.

**Practical Implications:** Given the rapid pace of social and economic change, it seems advisable to monitor the functioning of organizations, including business organizations, continuously and systematically in the face of Economy 4.0.

**Originality/Value:** The presented results of the pilot studies show which soft skills will influence the development of organization, especially Teal. The way the organization develops and the direction it takes is the primary responsibility of its leaders.

**Keywords:** development, teal organizations, Economy 4.0.

**JEL:** G32, J53, M12, M54.

**Paper Type:** Research Paper

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## **1. Introduction**

Comprehensive economic changes, which nowadays take place mainly in developed countries, require equally comprehensive changes in corporate governance (Hys, 2014; Retno *et al.*, 2020). What attracts attention is the difficulty in predicting the future, which is due to many factors of varying strength. After many years of research, in this article we try to identify the leading leadership factors that we believe can help to meet the demands of the market and the economy, including the global economy, by organizations, including business organizations.

The 4.0 era is generally regarded as a concept linked to the development of the Internet of Things, digitization, progressive robotization and the automation of production processes (Rodak and Gracel, 2017; Hys and Domagała, 2018; Chlomoudis and Pallis, 1999). The main drivers of change are hyper-automation and the development of information technology or, in a broader sense, the capacity for innovation (Tschandl and Kogleck, 2018; Drozd *et al.*, 2020) and technological progress. These changes make it advisable to implement change in employee teams by improving their qualifications and shaping their creative attitudes. Changes in employee teams promote the need to change organizational structures to reduce centralization, with the aim of increasing employee autonomy and designing flat horizontal organizational structures.

General conclusions were drawn from the empirical research in which respondents were asked to characterize the changes in their attitudes towards the transitions caused by Economy 4.0.

## **2. Background**

### **2.1. The Idea of Teal Organizations**

It can be said that an innovative type of organization such as the organization sets a new paradigm for the so-called self-governing organization. Its main assumption is the empowerment of the employee, who in turn gains a feeling for the weight and importance of his or her work in the company. This leads to a change in workplace relationships, as the employee becomes a partner and, over time, a co-owner who influences the decisions made. The Teal approach brings measurable benefits to any company that is determined to "reinvent itself", according to the concept of F. Laloux, author of "Reinventing Organisations" (Laloux, 2015). As Olesiński proves, Teal organizations rely on soft factors such as trust, effective communication, and relationships (Olesiński, 2019).

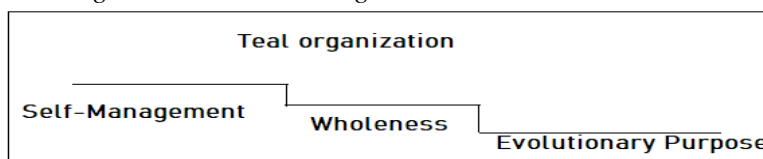
An essential element of any Teal organization is the extensive independence of employees, which encourages their creativity (Olesiński, 2016) and leads to the idea of self-management (a holacracy) in teams with a limited role of managers who act as coaches and mentors for the employees. Individual teams of employees work both

with certain other teams in a particular organization and with other organizations. The organizational structure is flat and decentralized (Laloux, 2015). Such staff units should work as closely as possible with other selected units to meet business challenges. This leads to the creation of a cooperation network, which is the most important part of the organization's environment (Rzepka, 2019a).

Laloux notes that the Teal organization represents the next stage in the development of human consciousness in the way organizations are managed (Laloux, 2015). Teal organizations will dominate the future due to an impending fundamental change in society – people are already striving for self-realization. It can be said that Teal organizations are characterized by three breakthroughs, as shown in Figure 1. The first is self-management which means that Teal organizations are working efficiently even on a large scale without the need for hierarchy and consensus (Rzepka, 2019b). Such a system is based on peer relationships. Leadership, which still exists, develops systematically through the pursuit of a common goal among people, which is common to their followers.

The wholeness in Teal organizations invites people to bring their personality to their workplace, while the evolutionary purpose is seen as the pursuit of a higher goal which can evolve over time, reflecting the fact that one cannot predict and control the future, but must instead explore it.

**Figure 1.** Teal organization breakthroughs



*Source:* Own creation.

Teal companies are organizations that manage processes in every aspect of their operations. It can be said that it is like a machine where the different steps in the process go from hand to hand. The roles are not fixed in advance but are defined on an ongoing basis according to current needs (Sheik, 2019). What counts in such a management model are the individual dispositions and strengths of each employee. Many managers, however, say that the Teal model is ideal (Pustoschkin, 2016) and that it is something that is aspired to but unlikely to be achieved.

## 2.2. The Idea of Economy 4.0

Automation, wireless networks, nanotechnology, artificial intelligence are changing our everyday life. These are the areas that characterize the changes associated with the Fourth Industrial Revolution (4.0). The Fourth Industrial Revolution is developing in the modern era and follows the First Industrial Revolution of coal and steel at the beginning of the 11th century, the Second Industrial Revolution at the turn of the 19th

and 20th centuries (a revolution in chemistry, the automotive industry and electricity) and the Third Industrial Revolution of the 1960s - the Automation Revolution. What they all have in common is the fact that they not only led to changes in industry, but also in everyday life and the labour market.

The main goal of implementing Industry 4.0 in a company is to achieve greater efficiency and flexibility. However, this cannot be achieved only by improving the production process or by gradually introducing process innovations (Rzepka, 2019a), but rather by a fundamental technological and organizational transformation and by updating the company's business model.

Industry 4.0 was originally presented in Germany at the Hannover Messe in 2011 (Roblek *et al.*, 2016). Its main goal is to achieve accuracy and precision as well as a higher degree of automation. The need to bring them together lays the foundation for a profound change and leads to a new paradigm known as Industry 4.0. It refers to the phenomenon of new consumer applications and new objects that directly influence current business and organizational models. This is increasingly linked to the definition of digitization, and the term is increasingly used in the context of the digital transformation of companies (Mario and Hihigoyen, 2019). In the face of digital disruption, digital transformation has become an important and strategic issue for all organizations of all sizes and regardless of their nature: business, marketing, human resources, production process, IT system, data, etc., (Vivier and Ducrey, 2019).

### **2.3 Economy 4.0 and SMEs**

The degree of penetration of Industry 4.0 in companies depends on their size. It is more difficult for small and medium-sized enterprises (SMEs) to adopt Industry 4.0 than for large enterprises, since most of them do not have fully automated production facilities and therefore the proportion of manual and hybrid activities is higher. That is why they are recommended to use network production in order not to lose their competitive advantage on international markets (Borowiecki *et al.*, 2020). The resources and processes of large companies are more structured, so they implement 4.0 technologies faster than SMEs. To prevent SMEs from falling victim to this industrial revolution, a comprehensive understanding of the organizational, human, and technological challenges of Industry 4.0 is required. One of the biggest challenges SMEs are or will be facing is the development of an appropriate strategy, the cost-benefit analysis of the Industry 4.0 technologies that are useful to them, but also the lack of data security and uniform standards (Lorenz *et al.*, 2016).

Apart from that, the lack of data security is one of the biggest challenges for companies. The lack of qualified personnel is one of the biggest challenges (Frank *et al.*, 2019), followed by investment requirements. However, the lack of expertise is the limit for the development of Industry 4.0 (Türkes *et al.*, 2019), which manifests itself in the company's lack of culture or internal training in the acquisition of digital skills, and the lack of specialists responsible for the introduction of new technologies.

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In addition, the application of Industry 4.0 in SMEs is characterized by the integration of new internal processes, such as the reorganization of workflows to increase flexibility and the number of training courses. Training employees in new technologies is a major challenge for both companies and governments (Hughes *et al.*, 2018). From the above, it can be concluded that both small and large companies need careful planning to meet their main concerns about covering the necessary investment costs (King, 2018).

Therefore, the survival of SMEs is highly dependent on their ability to respond to these new industrial challenges (Moeuf *et al.*, 2018). For example, in the manufacturing industry, which accounts for the largest share of industrial production, around 10 % of companies are now making intensive efforts to integrate Industry 4.0 (Schröder, 2016). There is therefore an important correlation between the size of the company and the implementation of Industry 4.0. Large companies are much more advanced in the integration of IT systems at their production sites (Wienbruch *et al.*, 2018). According to Schröder, only 13 % of SMEs in the manufacturing industry have already integrated Industry 4.0 into their facilities and systems, 17.5 % have started to participate in the integration and have developed initial implementation plans, less than 40 % are considering this step, while about 25 % of SMEs have not yet considered integrating this new industry.

Companies that do not want to lag their competitors must adapt to the ongoing revolution (Long *et al.*, 2020). Economy 4.0 also places demands on employees, who must be open to change and willing to improve their qualifications.

## **2.4 Soft Management Factors**

In times of turbulent changes in economy soft management factors exert profound influence on organizations. According to Olesiński, we can observe a growing role of intangible factors such as data, information, power, but also intellectual capital (interpreted as organizational, social, human, and relational capital), trust, cultural conditions, and other factors (Olesiński, 2017). This is like how interorganizational relations between independent entities or agility are currently considered to be one of the development trends in contemporary business creation mechanisms (Olesiński, 2017; Szczepańska-Woszczyzna, 2018).

In today's economic reality, it is certainly significant that the process of moving away from traditional organizational structures based on the traditional division of functions and power towards the development of inter-organizational relationships is evolving. This is certainly the result of an increase in the importance of intangible factors in management. The rate of change in the organization, which is the result of the impact of an unpredictable and turbulent environment, has also become increasingly important. Success in the management of inter-organizational relations lies in considering the autonomy of the participants in the network and ensuring the coordination necessary for their smooth interaction (Rzepka, 2018; Szczepańska-

Woszczyzna *et al.*, 2015). Knowledge resources are another important issue which, together with skills and competencies, determine the strong position of a modern company in the marketplace (Kraus *et al.*, 2019a). These resources are also helpful in improving the innovation capacity of the company (Borowiecki *et al.*, 2018).

For these processes to run properly, it is necessary to keep all participants active, to have them monitor the situation and to demand the incentives imposed by challenge and disobedience. There will always be a temptation for certain groups of people and organizations to take over the public space, hence the need for activity, constant negotiation, and consensus.

Therefore, soft factors play an essential role in creating inter-organizing space leading to its institutionalization and enabling a negotiated, conciliatory model, but also more and more frequently observed Teal organizations and teal inter-organizational space (Borowiecki and Olesiński, 2019).

### **3. Methodology**

Over the last 20 years, the research team has conducted a series of studies covering several thousand organizations in Poland, Canada, the UK, and Georgia. The implication of the research was to flexibly adapt the research results to changes in the turbulent social and economic environment and at the same time to investigate and confirm their relevance in organizations.

The research used in this article is part of another research project under the name of "Teal organizations in Economy 4.0". The project involves conducting research in Poland and in selected countries of the world (USA, Georgia, Slovakia, Brazil, England, Romania, Czech Republic, Ukraine, Spain). The research is conducted in stages and includes a pilot study, core research and repeat research. The research has been and will be conducted using the principles and standards developed by the OECD-DAL (Development Assistance Committee-Networking on development evaluation).

Considering the formal requirements and the goal of conducting the research reliably, the author assumed that all the research would be conducted using many research methods and techniques. This led to a triangulation of methods and techniques both around data collection, analysis, and the formulation of conclusions. During the research, the following work was carried out: desk research (1), individual in-depth interview (2) and a questionnaire (3). The chosen method of statistical analysis was the use of the  $\chi^2$  test - Pearson's Chi-square test for independence. The statistical analysis of the data obtained from the surveys was performed using the computer package SPSS STATISTICS 21.

The aim of the analysis was to record and specify those characteristic features of the surveyed companies that differentiate the level of subsequent indicators. For this purpose, a one-factor variance analysis was used as a method to verify the hypotheses.

The null hypothesis with equal average values for the general population was verified by the F-test (Fisher-Snedecor). The application of this test was possible because the calculated indices could be considered as continuous variables with distributions close to normality (at the materiality level  $\alpha = 0.05$ ) based on the results of the calculations performed with the Kolmogorov-Smirnov test. An Alpha Cronbach test was carried out to verify the reliability of the questions concerning the surveyed companies. The above tests made it possible to determine the variables for which there are statistically significant correlations.

#### 4. Results and Discussion

The first phase of research (pilot studies) was carried out between May and June 2020. The study covered 300 respondents from various micro and small enterprises, whose selection was deliberate (Table 1).

*Table 1. Scope of respondents*

Predominant mode of company's operation		Territorial scope of activity		Number of employees	
Commerce	19.7 %	Local	19.3%	0-9	13.7 %
Production	17.6%	Regional	8.2 %	10-49	24.0 %
Service	62.7%	National	30.0 %	50-249	15.5 %
		International	42.5 %	250-999	18.5 %
				1000 or more	28.3 %

*Source: Own creation.*

As regards the profile of respondents, a slight majority of them were men in management positions (57.9%) working in service companies (62.7%) with international reach (42.5%), employing 1000 or more people (28.3%) and representing a very wide range of several dozen industries, including banking, transport, automotive, catering, administration, finance, insurance, and IT.

Respondents' answers to the question of the leadership style in their company turned out to be divided (Table 2). Nevertheless, the highest percentage of respondents (26.6%) admitted that it is based only on orders and control. 16.7% of the respondents stated that it gives the employee the necessary space while almost half of the respondents (45.1%) indicated that decision making in their company is focused on the company's strategy and objectives. One in four respondents admitted that the boss makes all decisions (25.8%), while the focus on the evolutionary goal was declared by 5.2% of the respondents.

Considering the extent of the organization's structure, almost a third of respondents indicated that formal roles exist and that they have the character of a hierarchical pyramid structure (Table 3). In addition, 7.7% of respondents felt that the organizational structure of their company was autocratic and dictatorial. The same

percentage of respondents stated that the structure was based on holarchy, i.e. lack of positions and managers.

**Table 2.** Leadership style vs decision making

<b>Leadership style</b>	<b>%</b>	<b>Decision making</b>	<b>%</b>
is based on command and control	26.6	boss makes all decisions	25.8
only gives proper instructions	22.3	leaders make decisions (not transparently)	15.0
motivates by targets	16.7	decisions are focused on company's goals and strategy	45.1
inspires and involves everyone	17.6	decisions are focused on company's values	9.0
gives employees open space to participate situationally	16.7	decisions are focused on evolutionary purpose	5.2

*Source: Own creation.*

One in three respondents said that communication and the information flow is carried out via meetings and strategic information. 17.2% of respondents said they were unscheduled and direct, while 6.9% admitted to free networking and peer consulting.

**Table 3.** Organization structure vs flow of information and communication

<b>Organization structure</b>	<b>%</b>	<b>Flow of information and communication</b>	<b>%</b>
autocratic, dictatorial	7.7	unscheduled and direct	17.2
formal roles (a hierarchical pyramid structure)	33.0	working groups, meetings	21.5
matrix (each function has separate internal divisions, e.g. research, production, sales, finance)	21.0	meetings, strategic information	30.0
network (managers coordinate and control internal and external relationships)	30.5	informal and formal communication platforms, transparency	24.5
holarchy (no job titles and managers)	7.7	free networking and peer consulting	6.9

*Source: Own creation.*

In terms of vision and core values in the companies surveyed, the highest proportion of respondents (27%) indicated that their organization has an evolutionary purpose and values (Table 4). In contrast, 18% of respondents described the vision of the organization as unarticulated. In terms of processes and attitudes, 44.2% of respondents said that they were flexible and goal-oriented, and that anything was possible. Only 8.6% of respondents rated them as temporary, based on assignments, while 4.3% said that they were free, interdisciplinary (focused on the big picture).



**Table 4.** Vision and core values, processes, and workplace atmosphere

<b>Vision and core values</b>	<b>%</b>	<b>Process</b>	<b>%</b>	<b>Workplace atmosphere</b>	<b>%</b>
not articulated	18.0	provisional (based on orders)	8.6	combative	10.3
dogmas from above - long term perspectives	26.6	standardized (based on guideline and obedience)	33.9	experienced cooperation and coexistence	18.5
basic awareness, cultivated from both directions	21.5	flexible (goal focus - anything is possible)	44.2	pragmatic and results-driven	19.3
Instruments of decision making	6.9	cross-organizational (culture over strategy)	9.0	friendly and community-oriented	33.5
evolutionary purpose and values	27.0	free, cross-disciplinary (big picture)	4.3	open and creative	18.5

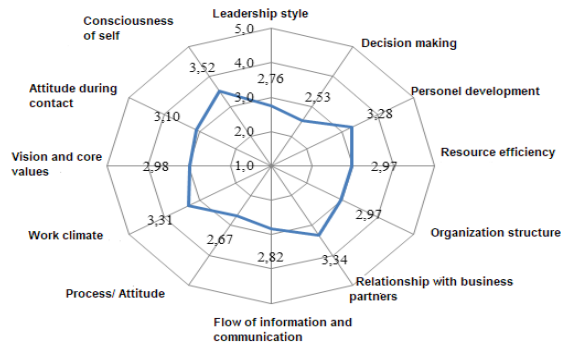
*Source: Own creation.*

One in three respondents described the atmosphere at their workplace as friendly and community oriented. According to 18.5%, their company is open and creative, while one in ten respondents admitted that the atmosphere is of a combative nature. Based on the results of the study, the following figure was created to show the Teal qualities of the surveyed organizations (Figure 2).

Pooling Teal qualities in organizations, the highest average was achieved in self-awareness which on a scale of 1-5 averaged 3.52 points. Slightly less importance was attached to relationships with business partners (3.34), the atmosphere at work (3.31) and personal development (3.28). Decision-making is a Teal organization quality that is least noticed by the companies that took part in the survey - an average of 2.53 points.

According to the study, Economy 4.0 will promote soft skills. Today, the emphasis on collaboration and the ability to build social relationships is at the top of every manager's list of desired employee characteristics. They are also looking for emotional intelligence, which guarantees good communication, empathy with others and leadership and management skills to inspire and motivate.

Managers also stress the importance of the employee's independence in his or her work, the ability to adapt to changing conditions or negotiating skills. They also value critical thinking, the ease with which problems can be solved using different data and information, the ability to make difficult decisions quickly and the creativity that enables the creation of new services and products.

**Figure 2.** Teal qualities in organizations

*Source:* Own creation.

## 5. Conclusion

In Economy 4.0 and in the midst of the COVID 19 pandemic, science faces the significant challenge of producing revolutionary solutions that could enable organizations to cope with the challenges of the turbulent environment they came to exist in. The post-industrial age, the age of services, is leading to far-reaching radical changes in organizational structures, to changes in the rules governing their operation, and to solutions that favour innovation, speed, and creativity.

The idea of Teal organizations can serve as a reference point to determine the scope and direction of these changes. Of central importance are knowledge resources, which are a substantial element of the soft management factors, i.e., data, information, knowledge, intellectual capital (human, social, relational, internal organizational capital) trust, and intercultural capital (Olesiński and Borowiecki, 2020). The idea of the Teal organization is used in practice to varying degrees depending on the circumstances. However, the more independent the employees are, the more creative they usually are. The manager of such a self-managing team assumes the role of coach and mentor for the employees. He inspires and motivates his team and supports them in achieving their goals.

The presented results of the pilot studies show which soft skills will influence the development of organization, especially Teal. The way the organization develops and the direction it takes is the primary responsibility of its leaders. The research results correlate with the report "Future of Skills. Employment in 2030" report, which was prepared by a group of researchers from the University of Phoenix and which essentially confirms the importance of the above skills. The so-called skills of the 21st century skills, i.e: sense-making, social intelligence, cross-cultural competency, virtual collaboration, new-media literacy, cognitive load management, design mindset or computer-aided thinking, as well as a wide range of social skills and higher cognitive abilities will be a prerequisite in Economy 4.0. Staff will be required to be

flexible in adapting to change, as well as agile and willing to gain new professional experience. All this because the traditional linear career path will eventually disappear, and the employees of the future will be characterized by their ability to work multiple jobs. Using the experience and knowledge from different areas, such an employee will carry out different projects and change jobs frequently.

Given the rapid pace of social and economic change, it seems advisable to monitor the functioning of organizations, including business organizations, continuously and systematically in the face of Economy 4.0. It is also important to draw conclusions continuously and systematically from and react to the changes taking place (Figure 1):

1. It is of the greatest importance to monitor and stimulate the way in which changes in the degree of autonomy and the degree of the need for their independence manifest themselves.
2. The research results show that the diversity of mental and psychological attitudes of employees is an asset of an organization, particularly useful when it comes to innovation challenges for employee teams.
3. Given the rapidly changing environment, it is necessary to monitor the directions and trends of change constantly and systematically in order to correctly modify the organization's objectives.

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