IMPLEMENTING VIRTUAL ORGANIZATIONS IN THE WESTERN BALKAN COUNTRIES (WB6)

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ABSTRACT

Distributed networks are found everywhere: from social communities, computer networks, gaming communities, to cryptocurrencies. All of these are an instance of a distributed network. Virtual organizations are another instance of a distributed network, which does not require its belonging individuals to be physically present in a single place to do work. In this paper, we will review the structure of these types of organizations, present some challenges that these organizations face, as well as introduce potential solutions and tools that they can use to meet their needs. Finally, we will propose virtual organizations as a resolution to some of the issues that exist in the Western Balkan countries (WB6).

KEYWORDS

Distributed Network, Virtual Community, Virtual Organization, Western Balkan Countries

1. INTRODUCTION

A virtual community is a social network of individuals who communicate through specific media, potentially crossing geographical and political boundaries to pursue their interests or goals [1]. With today's level of technology, there is a rise in these types of communities, which resemble real-life communities in that they provide support, information, friendship, and acceptance among strangers [2]. According to [3], "a new social paradigm has emerged dealing with a connection between physical and virtual social components such as social structure, virtual personality, virtual interaction, virtual settlement, virtual community, virtual village, virtual city and virtual society".

Virtual organizations are an instance of virtual societies [4]. In these organizations, individuals are not tied to a specific location. Especially in businesses, individuals can potentially live in a cheap place and earn enough to live a good life. Having a geographically distributed team comes with its challenges, however, online communication tools, strategies, and communication platforms have allowed many societies and businesses to abandon the traditional way of working, such as office locations, in favor of the flexibility of remote work.

Clearly, in today's age, virtual organizations are more than just an attempt - the popularity is growing and they are here to stay. Through the use of virtual organizations, Western Balkan countries (WB6) can potentially improve their overall social and economic status.

The remainder of this paper is organized as follows. Section 2 discusses the structure, collaboration, communication, diversity and inclusion in virtual organizations. Section 3 reviews related work and the case of a global distributed company. Implementation in the Western

Balkans amidst the COVID-19 outbreak is the main concern in Section 4, whereas Section 5 concludes the paper by outlining the advantages and disadvantages in general.

2. VIRTUAL ORGANIZATIONS

2.1. Structure

The traditional structure of organizations is geographically limited. In contrast, virtual societies can be scattered geographically. To explain the ideal virtual organizational structure, we will use an analogy from networking, where there are three distinct types of networks (Figure 1):

1. Centralized - all nodes connect centrally (server, location, management, etc.)

2. Decentralized - nodes connected to the network do not depend on a single point, rather multiple points.

3. Distributed - nodes in the network communicate with each other, and all the data is spread over more than one node.

We can view virtual organizations as a type of distributed network, where every node is an individual, potentially in a different location, and every edge represents a link between these individuals.

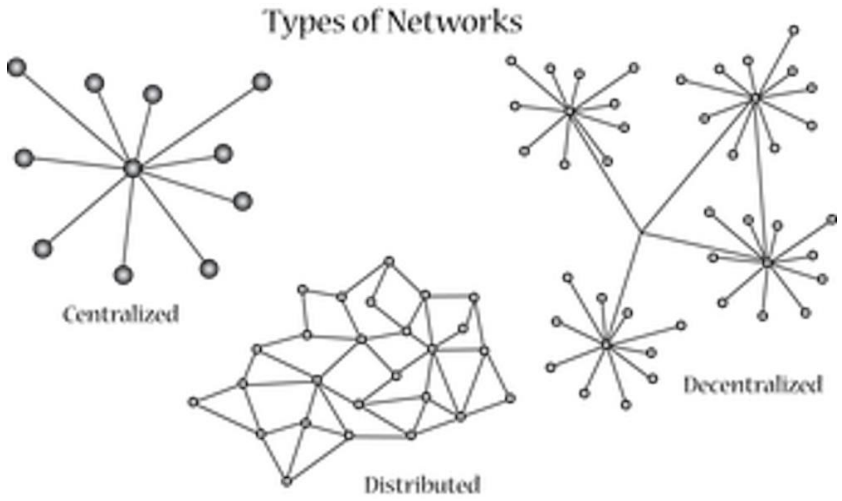

Figure 1. Types of networks [5]

Besides this space limitation, there is also a time limitation, since most organizations have specific working hours. However, time can represent a challenge, especially if, for a given link, the locations of the nodes have a big timezone gap. To take full advantage of the system, ideally, the working hours should be flexible. This will ensure a smooth operation of the system as a whole. It will also provide flexibility for individuals, in which they can complete daily tasks such as errands, paying bills, child care, etc. With this setup, individuals will produce maximum results because they are not burdened to work within a specific timeframe but when they feel most inspired.

We can further extend the idea of distributed networks in terms of organizational structure. This would imply a flat organizational structure, rather than the common hierarchical structure. This will be useful, since for example, if one of the nodes is unavailable (for example, on a holiday) then the system will continue to operate without much impact on the other nodes. Thus, distributed networks are superior compared to the other types of networks, because they provide flexibility.

One of the challenges with this structure is team bonding. Individuals can feel isolated after some period. To strengthen relationships between these individuals in an organization, face-to-face meetings can be held several times a year. Meetings can be in the context of a particular team or an entire organization, together with team building activities.

2.2. Collaboration and Communication

With today's technology, it is easy for individuals in virtual organizations to collaborate. All the tools are already available, and some of the widely used ones that solve this challenge are [6]:

1. Zoom - a video conferencing tool that supports both small and large group meetings (single or recurring) and offers access to mobile phones.

2. Slack - a chat tool that can serve as a replacement for the more casual conversations that happen in an office. Provides quick, one-on-one chat or ongoing group discussions through specific channels.

3. Google Calendar - a tool that provides an easy way to share and view others' calendars for scheduling meetings. It provides functionality to check for availability before scheduling a meeting.

Further, there are two types of communication:

1. Synchronous communication - two or more individuals exchange information in real-time. In most workplaces, communication happens this way and individuals expect real-time reactions.

2. Asynchronous communication - two or more individuals exchange information without the condition that all recipients respond promptly.

An example of the first type of communication is a one-on-one chat in the office. An example of asynchronous communication is e-mail correspondence.

Given these, we will provide a list of commonly used strategies for improving collaboration and communication [6]:

1. Equipped with the right tools. For example, messaging tools such as Slack, video chat capabilities, document collaboration, etc.

2. Individuals in different locations. This will allow teams to have 24-hour continuous work on an assigned project.

3. Maintaining a schedule. It is difficult to change things at the last minute for every individual, and it is especially challenging for individuals in virtual organizations. To keep the impact from the timezone gap minimal, there should be consistence and the best possible time should be picked for meetings.

4. Usage of async and sync communication where needed.

5. Effective communication of details. Miscommunication can easily happen in virtual organizations. An individual needs to be able to explain concepts clearly and concisely.

6. Cross-team collaboration. In an organization, individuals are assigned on a team for work on a specific project. If the same individuals are always kept working together on the same type of work, it can eventually lead to the isolation of those individuals, both in terms of knowledge and engagement with others.

7. Organizational culture. As an organization grows, its culture grows as well. Every individual should express an intention to create a culture organization so that everyone is on the same page. This will help improve collaboration between different teams, even if they work around the world.

2.3. Diversity and Inclusion

Great ideas come from anywhere. In an organization, every individual needs to stay open, so that powerful ideas can be brought to the surface and be fulfilled.

Diversity usually includes, but is not limited to, differences in race, gender or expression, political and religious affiliation, socioeconomic background, cultural background, geographic location, physical disabilities and abilities, relationship status, veteran status, and age [7]. To work on diversity means to respect these differences and strive to increase the visibility of traditionally underrepresented groups. Inclusion should be seen as a continuous, conscious effort to celebrate differences and respect people of diverse backgrounds and life experiences, whether they are current or future members of the organization, partners or product users

Below are just a few examples to explain how diversity can affect an organization:

1. Religious holidays. There are about 4,200 religions in the world [8]. When celebrating, it should be borne in mind that other individuals may not be aware of these holidays. Before planning a meeting or holding a team call, it should be checked for if there is a time conflict in these cases.

2. Language differences. Although English is a worldwide language, in virtual organizations it is not the mother language to every individual. This language barrier can pose a challenge in certain situations where two or more people cannot convey a message.

However, despite these challenges, it is important to address diversity and inclusion. The more diverse perspectives are adopted, the better and more powerful an organization becomes by engaging their products to a global community of users.

Each person comes with their own biases, experiences, and skills. Who the person is affects how they approach their work. It is important for these individuals to keep themselves motivated and challenged.

3. RELATED WORK

Customer orientation, the use of information and communication technology (ICT), and time-based competition or decentralization, are several different aspects that contribute to the emergence of this new organizational form, which have been described in current literature.
As a step towards a conceptual theory, Katzy [9] introduces a model of design and implementation (D&I) processes for virtual organizations. By summarizing eight propositions from earlier literature and empirical evidence, the model is concerned with the impact of the D&I processes on the effectiveness of virtual organizations.

Having into account reference frameworks and models, a structured approach for implementing Virtual Organization Breeding Environments (VBEs) has been proposed in [10]. Its contribution is with the general problem of transforming classical industry clusters in VBEs, preliminarily tested in a cluster of moulds and dies industries from Brazil, where the main VBE's characteristics have been found.

Under the assumption that a "virtual organization is always a form of partnership", virtual organizations are defined as "a temporary collection of enterprises that cooperate and share resources, knowledge, and competencies to better respond to business opportunities" [11]. An overview of virtual organizations and main issues in collaboration (such as security and management) have been presented, in addition to a number of different modeling approaches according to their purpose and applications.

Implementation of virtual organizations has been described as "an approach to balancing the use of information and communication technologies within organizations" [12]. An organization has been illustrated in terms of its communication relationships, resources, and business practices. In addition, a software application has been developed and tested which both gathers the large amounts of data involved and represents relationships. A case study with regional SMEs has been conducted, concluding that "ICTs present a something of a double-edged sword – tools that empower, but simultaneously threaten the culture of the organization".

3.1. The Case of a Global Distributed Company

Automattic [13], as a global distributed company, is best known for development of WordPress, but is also involved in a lot of other projects, such as Gravatar, CloudUp, WooCommerce, and as of 2019, it has been valued at US$ 3 billion [14]. Since the early days in 2005 it was built with remote workers in mind. The main reason for this is that they did not want to limit themselves from hiring the best talents because of country borders [15]. We will list the other general benefits for virtual organizations in the concluding section.

The first point that needs to be addressed in this kind of setup is communication. One of the most important tools that the company relies on is P2 – the internal blog system that allows the sharing of information [15]. Using e-mail can quickly lead to some information being isolated, or even hard to track. Every other type of communication is usually handled in chat rooms, or using some of the tools for online meetings. Another point to be addressed is timezone differences. There are

several ways to address this issue. One obvious solution is to cluster teams in similar timezones. However, some teams at Automattic have persons from different timezones in the world. For example, one advantage of this is that it ensures the work the team is doing has 100% of time coverage throughout the day. The third point is culture. It's the sum of what everyone is doing – all the decisions, all kinds of communication that goes in P2 or chat rooms. We already discussed the importance of diversity and inclusion in Section 2.3.

The distinction between remote and distributed work is that in the former, nodes are usually given tasks and are expected to complete them in a certain timeframe, while in the latter, nodes are given more control and autonomy, that is, the aim is for all nodes in the graph to be equal so that they can contribute equally, even if they are physically not present in a specific location. To strengthen the connections between these nodes, the company holds meetings several times a year (Figure 2). These meetings can either be in context of a specific team, or the whole company. Whether the success of Automattic is due to its distributed nature, or not, is arguable. Mullenweg is certain [15] that the structure of the company had a key role in its success. For example, he alleged that the productivity increases during this kind of meetings and that major breakthroughs are accomplished: "[during these trips] there's new code pushed out to WordPress.com over 100 times a day".

Figure 2. Automattic's Grand Meetup (2017)

4. IMPLEMENTATION IN THE WESTERN BALKANS

The implementation and the usage of virtual organizations can be beneficial in WB6 countries: Albania, Bosnia and Herzegovina (BIH), Kosovo, Montenegro, North Macedonia and Serbia.

For example, during the COVID-19 outbreak, when all human activities have moved from physical society to virtual society, North Macedonia had seen tremendous success with the Eduino online learning platform [16]. The way forward in the short-term was to promote remote learning and the use of online learning platforms, to continue supporting students to gain access to the necessary equipment for remote learning, and to provide teachers with digital learning opportunities on how to teach online, to share their resources and give and receive feedback. However, benefits are not specific to special circumstances such as outbreaks. Schools can learn that they can continue implementing and working with online learning platforms and perhaps meet in person only for exams.

Another point is for the businesses in WB6 countries - they can also see a benefit since these types of organizations allow for the distribution of the economy. By encouraging SMEs acceptance of e-commerce to facilitate their entrance into new markets, the problem of the economic gap can be easily addressed.

Another benefit is diversity. Individuals in most WB6 societies have very similar behavior and lifestyle [17] (Figure 3).

Figure 3. Monocultural society

With virtual organizations, diversity among these societies can bloom (Figure 4). This will allow for the exchange of culture, experiences, and as a consequence have an overall improvement to the societies in WB6.

Figure 4. Diverse society

Further, in a global virtual organization, WB6 individuals can attend online conferences and have access to information databases which eases knowledge sharing. They can learn new methods that are applied in different countries, and perhaps try to apply them locally.

4.1. The Case of an Outsourcing IT Company

A successful example is "InterWorks" [18], a company that can be found in 3 (three) offices in North Macedonia, and 1 (one) office in Amsterdam, the Netherlands, with clients located in USA and Europe. They started the quarantine period by providing their colleagues, clients, and partners with a “Work from Home Guide” with instructions on how to be as efficient as possible during this period. In order to collaborate more effectively and retain notes more efficiently, the company started using some additional tools from "Office 360", and employed the following activities in practice:

- Internal contests for the most "Creative work from home picture",
- A Skype Group conversation where they post questions for positive influence,
- Regular checking on all team members by asking questions related to how they are feeling,

- Running their monthly all-hands meetings completely on-line,
- Monthly interview with executive management,
- Online parent-workshop with a professional teacher, where she gives tips and tricks on what to do with the children during the quarantine period,
- An online CrossFit training for the employees,
- Knowledge Sharing webinars and articles campaign.

As the recovery phase has already begun, restrictions are being relaxed and the company is looking forward to the economy restarting on a world level, as well.

4.2. Structural Challenges from a Governmental Standpoint

As we have shown, the necessary tools for implementing this type of virtual organizations already exist. The next major challenge is to implement these organizations in WB6 countries from a governmental standpoint. A structural challenge that gains significance is the fact that two-thirds of people with a high education level have no previous experience with teleworking. On average, only about one third of individuals aged 25 to 64 with high formal education have worked from home at least once in 2018 and only one-fifth used the Internet for the job when working from home in the WB6 economies for which data was available [19].

5. CONCLUSIONS

We looked at how virtual organizations are structured and how they work. In conclusion, we will outline the advantages and disadvantages in general. It must be noted that the "disadvantages" here are challenges, that is, they are not disadvantages in their entirety as some of them have partial solutions.

Examples of such benefits include all of the following:

1. Massively increased volume for talented people.
2. Reduce costs.
3. Better work-life balance.
4. Health benefits - for example, it can be difficult to maintain a healthy diet and lifestyle at work from the office.
5. There is no commute to work.
6. An environmental benefit: less pollution.
7. Expansion of the workplace area: possibility to work efficiently in the rural areas.
8. More independence: individuals can work when they need to and decide in which ways.

9. Amount of stress reduced: no workplace pressure and consequently an improved personal and family life.

On the other hand, the following disadvantages may be noted:

1. Although the World Wide Web (WWW) has been accountable for social virtual interaction as alternative to face-to-face (F2F) interaction, F2F communication is a much easier way to convey a message.

2. Strict organization is required for every individual.
3. Work-life balance. Although we have listed this as an advantage, it still has its drawbacks. For example, when working from home (as opposed to an office), the boundaries between work and personal life become less clear.

4. Potential distraction from home environment.

The COVID-19 pandemic hit the WB6 in the midst of reacceleration of economic activity and promising economic outlook for 2020. The outbreak "enforced" the WB6 countries to work from home, for jobs where this is applicable. Hopefully, these countries will learn something from this and make virtual organizations a regular thing, instead of an anomaly.

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