Facing The Digitalization Challenge: Why Organizational Culture Matters and How It Influences IT Governance Performance

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Abstract

Today it is not possible for the companies to compete without having IT as a strategic driver. That is why IT governance becomes crucial for managers to bring the most value from IT to the business. Additionally organizational culture is an important factor and often blamed when IT governance projects fail. However little in-depth research investigated how the organizational culture changes can improve the IT governance performance. This research conducts a case study of the IT department of a large company attempting to improve the IT governance while facing the digitalization challenge. In this case the IT department has an organizational culture change journey seeking to improve the IT governance performance. The results indicate that the initial clan culture orientation of the IT department has led to a successful IT governance performance in cost-effective use of IT. Furthermore, adhocracy is identified as preferred culture for improving IT governance for growth.

Keywords: Organizational culture, IT governance performance, Organizational Culture Assessment Instrument (OCAI), IT department, digitalization

1. Why Organizational Culture and IT Governance are Important for Digitalization?

IT Governance (ITG) is implemented by many organizations today. Determining the decision-making rights and responsibilities that lead to efficient and ethical conduct in the use of IT and bring value from IT to the business is called IT governance [18]. IT governance is an important factor when facing the digitalization in different organizations [22]. Organizations with an increasing digital business orientation can benefit from successful IT governance to handle the IT complexities [17]. ITG helps organizations handle the growing complexity in managing corporate IT departments in the context of an increasing business orientation.
Reconsideration of the role of IT strategy, from just a functional role -adapted to business strategy - to a strategic role - which can bring value to the business - is the phenomenon of digitalization [1]. In requesting for digitalization, organizational culture is among the factors that can play an important role. An organizational culture aligning with the business objectives can boost the performance in aspects such as digitalization and IT governance [3].
Currently most of the organizations are dealing with different challenges regarding digitalization and IT governance performance is one of the top issues considered by managers in digitalization [7]. IT governance is highly used by firms in their quest for high returns from their IT investments and for competitive advantage over other companies that lack effective IT governance. However, there are many aspects of this field such as organizational culture influence that still need investigation [6]. The IT Governance Institute emphasizes that IT governance does not occur in an isolated place but is influenced by its environment [8]. This

highlights the significant role of environmental factors such as culture in IT governance. Culture is often blamed when IT investment failures happen in organizations [11]. Cultural differences can influence the form of management too [21]. Consequently, at the organizational level, cultural differences are one of the explanations for different levels of IT governance performance. However, research on the role of cultural differences in IT governance performance [9] is scarce. Additionally, Cameron and Quinn [2] emphasize that the most successful firms, such as Intel, Coca-Cola, Disney, McDonald's, and Microsoft, tend to have a distinctive and identifiable culture. According to the authors, Organizational Culture (OC) may be created by the founders of the firms or can emerge over time through the solutions and methods the company uses to overcome internal and external challenges. They even suggest that, in some companies, the management team takes the deliberate decision to establish an organizational culture directed toward improving performance. Some research has been conducted on the role of national culture in Information Systems (IS) [13, 24], but the topic of organizational culture and values in relation to successful IT governance in particular has received very limited attention from scholars [11]. Choo [4] proposes that the part of the organizational culture that deals with information may have an effect on the whole organization's behavior and effectiveness. Considering today importance of both concepts of organizational culture and IT governance performance, this research has looked to answering the following research question of "*How does organizational culture influence the performance of IT governance when an organization is facing the digitalization challenge?*"

The paper is organized as following: an outline of the research background, research methodology, an overview of the studied case, results and analysis including IT governance performance and organizational culture assessment at the IT department (anonymously labeled ITS), discussion on facing the digitalization challenge at ITS through organizational culture change and IT governance performance improvement, conclusions and recommendations for future research.

2. Research Background

2.1. Defining IT Governance

There are different definitions existing for IT governance, the definition selected to be used in this research is provided by Weill and Ross [18]. They define IT governance as the concept regarding people's rights to make decisions about IT in order to bring value to the business [18]. "Governance performance assesses the effectiveness of IT in delivering four objectives weighted by their importance to the enterprise: 1) Cost-effective use of IT, 2) Effective use of IT for asset utilization, 3) Effective use of IT for growth, and 4) Effective use of IT for business flexibility" [18, P 12]. The four outcomes of the IT governance performance defined by [18] are: 1) Cost-effective use of IT is a measure of the extent, efficiency, and value of IT used in the business; 2) Effective use of IT for growth assesses how effective IT is in learning, being innovative, gaining competitive advantage, and changing and improving; 3) Effective use of IT for asset utilization focuses on how successfully IT has used knowledge-based assets in an organization; 4) Effective use of IT for business flexibility investigates how IT has helped the business respond to internal and external [18]. In order to measure the above objectives in an organization, senior managers need first to identify the importance of each. They may be weighted according to importance on a 1–5 scale (1 for not important and 5 for very important). Then, the four objectives of organizational success in IT governance should be rated on a 1-5 scale (1 for not successful and 5 for very successful). Finally, a weighted average formula, as presented below, is used to calculate the overall IT governance performance score, with a maximum score of 100:

$$\frac{\sum n= 1 \text{ to } 4 \text{ (importance of outcome)} * \text{ influence of IT governance} * 100}{\sum n= 1 \text{ to } 4 \text{ (5 } * \text{ (importance of outcome))}}$$

This formula is used for measuring IT governance performance in 256 companies in 23 countries. The average score of the IT governance performance was 69 out of 100, with a minimum score of 20 [18].

2.2. Defining Organizational Culture

Organizational culture can be defined in various ways. Kostava [10] defines organizational culture as the specific ways in which an organization behaves over a period of time. On the other hand, values can also contribute to the formation of organizational culture, with varying degrees of influence. According to Robbins and Judge [14], organizational culture is related to the value system shared by members of an organization. This value system contains the main characteristics of people's mutual understanding and behavior.

Organizational Culture Assessment Instrument (OCAI)
Organizational Culture Assessment Instrument (OCAI), is developed by Cameron and Quinn [2] for diagnosing organizational culture through six key dimensions:
"1) The dominant characteristics of the organization, 2) The leadership style and approach that permeate the organization, 3) The management of employees or the style that characterizes how employees are treated, 4) The organizational glue or bonding mechanisms that hold the organization together, 5) The strategic emphases that define what areas of emphasis drive the organization's strategy, 6) The criteria of success that determine how victory is defined and what gets rewarded and celebrated" [2, P 151].
OCAI defines four clusters of cultural core values through by considering two main aspects: 1) Internal Focus and Integration versus External Focus and Differentiation, and 2) Stability and Control versus Flexibility and Discretion. The four clusters of organizational culture represent their most notable characteristics, namely *clan, adhocracy, market, and hierarchy*.
The Clan Culture: An organization that is profiled as a clan culture firm has a friendly environment, in which people share many things. The organization can be considered like a large family, with the managers as the mentors. The human resources are beneficial to the organization in the long term. Teamwork and participation have a high priority.
The Adhocracy Culture: In an adhocracy culture, the emphasis is on being creative, entrepreneurial, and dynamic. The organization is risk-taking; leaders try innovative solutions, and their aim is growth and leading in the product or service they provide. The organization commits to giving individuals freedom.
The Hierarchy Culture: A hierarchy culture is associated with a highly formalized and structured work environment, in which there is a procedure for everything and everybody has specific tasks. Leaders are not risk-taking or innovative but instead more efficiency-minded. Stability is the long-term aim, and the organization merely needs to perform its usual operations efficiently.
The Market Culture: A market culture organization is results-oriented. The most important concern is getting the job done on time; competition is crucial. The leaders are drivers and fierce competitors in the market. An important issue in a market culture organization is achieving both competitive pricing and a good reputation.

3. Research Methodology

A single case study is used in this research at the IT department (labeled ITS). ITS is the IT department of a large construction company headquartered in Sweden. This case study aimed to address how the organizational culture change in the IT department can influence the IT governance performance when facing digitalization challenge. The use of a case study and of the qualitative analysis of data has been also done in other studies that have explored IT governance (for instance [9]; [25]; [15]; [19]; [20]; [5]) that justifies the choice of this research method for addressing the research question in this study. The data was collected through ten in-depth semi-structured interviews with ITS managers with positions of Chief

Information Officer (CIO), Vice-President of Service Management, Business Liaison, Enterprise Architect, IT Supplier Manager, HR Manager, and Senior and Middle Managers of different functional units of ITS (Table 1). The interviews were conducted in 2014-2015 and then this data was analyzed. After a year, new data was collected based on ITS's latest five-year plan (2016-2020) concerning the cultural changes actions for improving IT governance.

Table 1. Interviewees' positions, length of service at ITS and interview dates

Interviewees	Position	Interview length in minutes	Date of interview	Length of service at ITS
Interviewee 1	CIO	60	Nov 2014	5 years
Interviewee 2	Vice president of service management	60	Nov 2014	Over 5 years
Interviewee 3	Head of Service and project management	90	Nov 2014 & Dec 2015	Over 5 years
Interviewee 4	Business liaison 1	60	Dec 2014	Over 10 years
Interviewee 5	IT architecture	60	Dec 2014	Over 15 years
Interviewee 6	IT supplier and risk manager	60	Dec 2014	1 year
Interviewee 7	IT maintenance manager	90	Dec 2014	Over 5 years
Interviewee 8	Head of HR and communication	90	Feb 2016	5 years
Interviewee 9	Business liaison 2	90	November 2016	Over 7 years
Interviewee 10	Head of local applications structure	90	November 2016	4 years
	Total	750		

In addition to the ten face-to-face interviews, approximately 90 minutes each, the interviewees were asked to score each of the organizational culture and IT governance performance measurement dimensions. Additionally, different internal documents from ITS like balance scorecard, strategic map, and previous OCAI assessment results were used in this study as multiple sources of evidence. The interviews were transcribed and analyzed thematically using computer-aided software (NVivo 10) in order to create codes from the transcribed interviews as well. Themes and codes were extracted from the interviews based on the concepts of organizational culture and OCAI [2] and also the concepts of IT governance performance [18]. To achieve data triangulation [23], the interview transcripts were cross-checked against one another and compared with ITS internal documents.

4. Overview of the Case Study

This research is based on a case study of an IT department in a large construction company headquartered in Sweden, which due to confidentiality, is given the fictitious name "SwedCon". Recently this large construction company is dealing with the challenge of digitalization of their services and products such as smart buildings and the IT department has been asked to address this issue as a strategic partner. In ITS, 220 employees are providing most of the IT services for the whole company (that has a total of 1,200 IT users). Figure 1 shows the governance structure of "SwedCon" and how it operates.

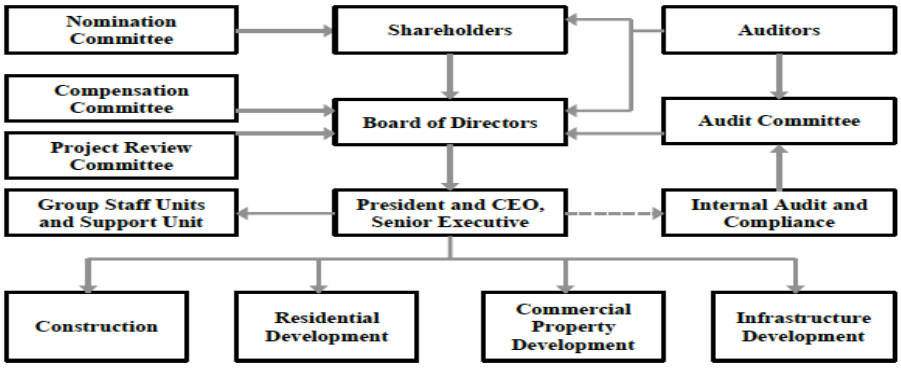

Figure 1. SwedCon's governance structure (adapted from SwedCon internal documents)

In SwedCon, the IT department has a rather traditional structure, with a CIO at the top and some senior, middle, and junior managers forming a small management team. The IT department at SwedCon has its own finance and HR units. All the operations and delivery functions are distributed to four main areas: 1) Service integration and support, 2) Local application services, 3) Nordic global application services, and 4) Infrastructure services, each of them having a number of IT subunits and groups (Figure 2).

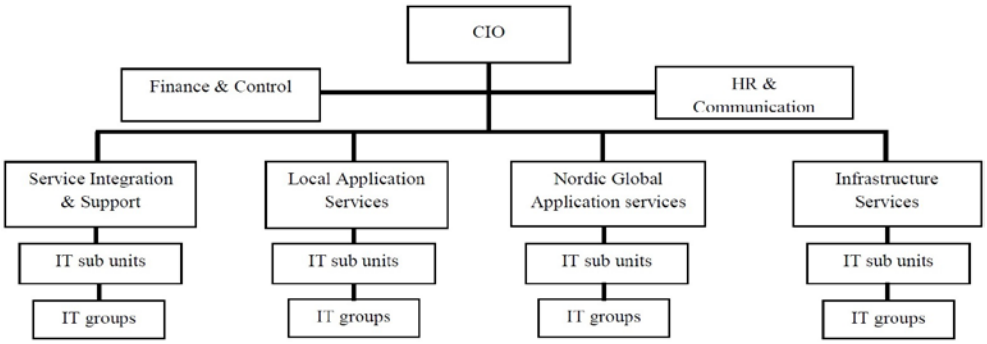

Figure 2. ITS organizational structure

The senior managers of ITS groups that are shown in Figure 2 are in direct communication with the CIO (through formal meetings in every second week), and the CIO has a board meeting every quarter with the business managers and business liaisons, who liaise between IT and business units. The environment at ITS is very international, and the language of communication is English.

5. Results and Analysis

5.1. IT Governance Performance at ITS

The total IT governance performance score of ITS was calculated based on the data collected (provided by ITS managers) using to the formula of Weill and Ross[18]. ITS gained the total score of 62.74 out of 100 for IT governance performance. As we could noticed this score is close to the average score of the 256 companies studied by Weill and Ross [18], which is 69. The scores for each of the IT governance performance outcomes are shown in Figure 3.

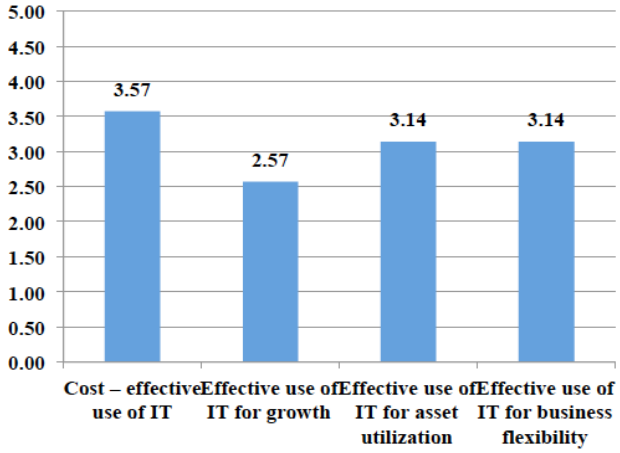

Figure 3. The average success score for each IT governance performance outcomes at ITS

As represented in Figure 3, the cost-effective use of IT has received the highest score, and the effective use of IT for growth has received the lowest average score.

5.2. Organizational Culture at ITS

According to Cameron and Quinn [2], OCAI integrates many dimensions of organizational culture, both regarding the current state of the organizational culture and the way the members believe it should be developed, based on business demands. In fact, OCAI is a validated tool used by over 10,000 companies worldwide [12]; and it examines organizational culture and the desire for change in an organization through an integration of many dimensions. It can be used by managers and consultants to help an organization make the constructive changes with new teams and leaders and with new working methods [16]. ITS has already commissioned an OCAI assessment that was done by a consultancy company in 2012, and completed in 2015, but the influence of the organizational culture on IT governance performance has not been investigated. The initial organizational culture assessment of ITS is presented in Figure 4. This assessment has been done by a consultancy company at ITS in 2012 and is based on the data collected from the CIO and managers' of ITS.

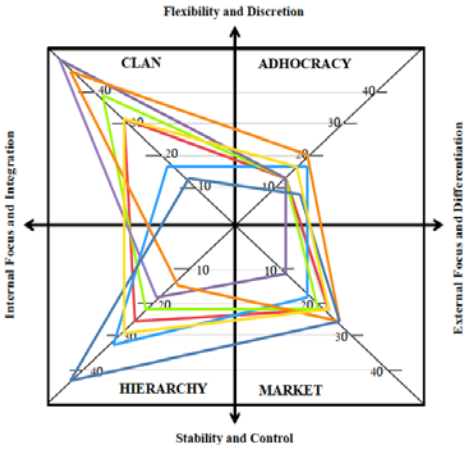

Figure 4. Initial OCAI assessment of ITS (Source: ITS internal documents)

Each of the colors shown in Figure 4 is representing the evaluation of the organizational culture done by each IT managers of ITS. Furthermore, in Figure 4, we could see the current organizational culture of ITS (until the end of 2011) that is more directed toward the clan culture which is mainly emphasizing on the teamwork, collaboration and informal communication. Moreover there is also some hierarchy direction in the organizational culture that was mentioned by some of the IT managers.

5.3. The Influence of Organizational Culture on IT Governance Performance at ITS

The Influence of Organizational Culture on the Cost-Effective Use of IT

As shown in Figure 3, ITS has the highest score (3.57) for cost-effective use of IT among the other outcomes of IT governance performance. This means that IT has been more successful and beneficial for the business in financial terms. The reason is that, during the past five years, they have been focusing only on providing essential services with their limited budget. “Fixing the basics” was the only task they focused on [Interviewee 1]. As part of their culture, they were looking to create trust among the employees and also between the business and the IT department. The first remedy was to price the services accurately. Having a clan culture, with its characteristics such as a mentoring style of leadership, loyalty, and mutual trust and commitment among employees, has helped ITS to achieve a high score in the cost-effective use of IT, which in turn matches their strategy in these past five years. As the CIO and other interviewees have noticed “*being team players*” has helped them to make the most of their teams [Interviewees 1, 2, 3, 4]. Teamwork, consensus, and participation are part of the management style that is associated with organizations that have a clan culture. Most of the communications are informal at ITS, where a clan culture prevails, and only in the case of

problems or incidents do they follow laid-down processes for communication. The challenge that ITS is facing now is that the communication and cooperation among their different units are not strong, which reduces the cost-effectiveness of the use of IT. As the Vice-president of service management at ITS has said, *"Our projects are becoming more and more similar; therefore, we need a more organized way of communicating for sharing information and integrating our services. This way, we can stay cost-effective and avoid duplication. Shifting the organizational culture toward a more adhocracy-oriented culture, while keeping a balance of the clan, hierarchy, and market cultures, will help the IT department to overcome the problem of communication between internal units"* [Interviewees 1, 2, 5].

The Influence of the Organizational Culture on the Effective Use of IT for Growth

Effective use of IT for growth has the lowest score (2.57) in IT governance performance. This objective relates to the effectiveness of IT in learning in ITS, and also is related to being innovative and competitive, and making improvements. This means that IT has not been greatly successful in driving business strategies and innovation. *"The management teams are not brave enough to make creative decisions and take risks..."* [Interviewees 2, 4, 9]. Therefore ITS first priority was to stay within the IT budget. As it is shown in Figure 3, ITS has received the highest score for cost-effective use of IT and the lowest for effective use of IT for growth. In the future vision of ITS managers concerning the organizational culture, the type of culture that interviewees think should be given the most attention is adhocracy, in which the focus is more on innovativeness, creativity, and entrepreneurship and in this way the company will combine the external focus and differentiation with innovation. The CIO of ITS believes that they need at this point to be *"more competitive and proactive"* [Interviewee 1], in order to improve their IT governance performance. The current clan culture, in which generosity is one of the core values, helps them to be open and share the processes and work together. However, since they have focused only on providing the minimum service demanded, they have failed to use the expertise distributed in their different units. If ITS wishes to elicit and be more innovative and provided competitive solutions, they need to change their organizational culture in such a way as to make people more willing to communicate in depth (like is in adhocracy).

The Influence of the Organizational Culture on the Effective Use of IT for Asset Utilization

Effective use of IT for asset utilization in essence means successful use of knowledge-based assets. The effective use of IT for asset utilization has scored 3.14 out of 5 in our study, similar to the average level for the whole organization. At ITS, all the operating and delivery functions of IT services are divided among four main groups of service, namely Integration and Support, Local Application Services, Nordic Global Application Services, and Infrastructure Services. The challenging cultural issue that is influencing the effective use of IT in ITS is the lack of integration among different groups. The CIO and other interviewees has noticed that *"We are producing a lot of data and they are not using it in a systematic way"* [Interviewees 1,2, 6]. This is exactly where IT should be most helpful and make the most difference by making all that data accessible, integrated, and reusable. The ITS desire is to have a more adhocracy-oriented organizational culture that is in line with what they expect from IT regarding asset utilization; ITS wants to be more innovative in the use of resources, optimize the use of their experts and data, and increase entrepreneurship. According to the interviewees, *"informal communications do not work in some cases in which it is essential to receive information on time"* [Interviewee 7]. As the service manager and supplier manager noted, they have a capacity management problem. For instance, they have many IT projects, with large groups working on them, and yet sometimes a project is well under way before information becomes available on whether they will have all the resources they need to deliver the IT project. *"This sort of information should have been given to the supply manager before the start of the IT project"* [Interviewee 6]. The clan style of organizational leadership,

mentoring, and communication does not meet the needs of such large, dispersed groups, where organized knowledge integration is a prerequisite.

The Influence of the Organizational Culture on the Effective Use of IT for Business Flexibility

The effective use of IT for business flexibility measures the degree to which IT is successful in helping the business to respond to internal and external changes rapidly and in an optimized way. ITS has received a score of 3.14 out of 5 for this IT governance outcome. Their clan culture and the flat organizational structure that is common in Sweden have helped them be responsive to changes in the business. The managers of the IT group responsible for each business unit are able to make their own decisions for their unique projects; and this helps them to respond quickly to changes. Accountability in taking decisions and making improvements is one of ITS's cultural values. On the other hand, the company is large, with almost 12,000 IT users in the Nordic countries alone and 220 IT providers. As one interviewee has stated *"It is challenging to create opportunities for interface in the way that a regular manager can and to provide the exact service the client needs"* [Interviewee 10]. In different IT groups, the change acceptance level is different, therefore the speed of reaction to the changes are different too. For instance, *"the IT service and project management group readily accepts changes as part of their culture, but the level of change acceptance is lower in other groups such as service maintenance"* [Interviewee 7]. As for the other three IT governance outcomes, the business now requires IT to have a more strategic role in understanding how to add value. Therefore IT department needs to be more innovative to be able to respond to this new demand. One problem mentioned by some IT employees is that *"they do not receive appropriate and timely feedback from their senior managers or from the business stakeholders"* [Interviewee 8]. So a more orientation toward adhocracy will undoubtedly help them to achieve what they want.

5.4. Facing Digitalization Challenge: The Need for Organizational Culture Change to Improve IT Governance Performance

Digitalization in SwedCon has been done in this company through two main objectives: 1) digital content of the products and 2) developed digital capabilities. As we noticed *"SwedCon has four business streams of construction, residential development, commercial property and infrastructure development and digitalization is aimed to grow add value to all of them". "The digital content of SwedCon products and developed digital capabilities derived operational excellence and added 3% value"."ITS is an internal fully integrated IT function co-owning business success"* [Interviewees 1, 2].

In dealing with the digitalization challenge SwedCon has looked to in changing the role of IT from IT as a support to IT as a strategic driver. Consequently its IT department (ITS) has looked to improve the effective use of IT for growth of IT governance performance and this has led to the need of organizational culture change. During the interviews we have done at ITS the interviewers have also provided us information about the ITS next business plan for 2016 to 2020. During the last 15 years, SwedCon has been merely following regular rules and procedures and the company has set out in 2012 a "code of conduct" to reduce inappropriate behavior, and the ITS assessment was accordingly based on this code of conduct. However, in 2016 the managers found that *"SwedCon is in a period of great transition; we are working more with purpose, and the overall purpose is to build a better society"* [Interviewee 2, 3, 9]. In order to accomplish this overall purpose ITS has taken the role to be a strategic partner to SwedCon. As a strategic partner, ITS main task has looked to investigate and understand the technological needs of SwedCon's customers (e.g., building tenants). In this way ITS has raised its score in the effective use of IT for growth. In fact now ITS is involved in planning new SwedCon projects. Moreover as we noticed "*ITS now works directly with society and community projects, not just as the office IT"* [Interviewee 2]. In this perspective digitalization has brought new challenges to SwedCon. In Figure 5 we have illustrated how this company

has faced digitalization challenge by realizing the need for changing the organizational culture of ITS that has due to the improve of the effective use of IT governance in growth.

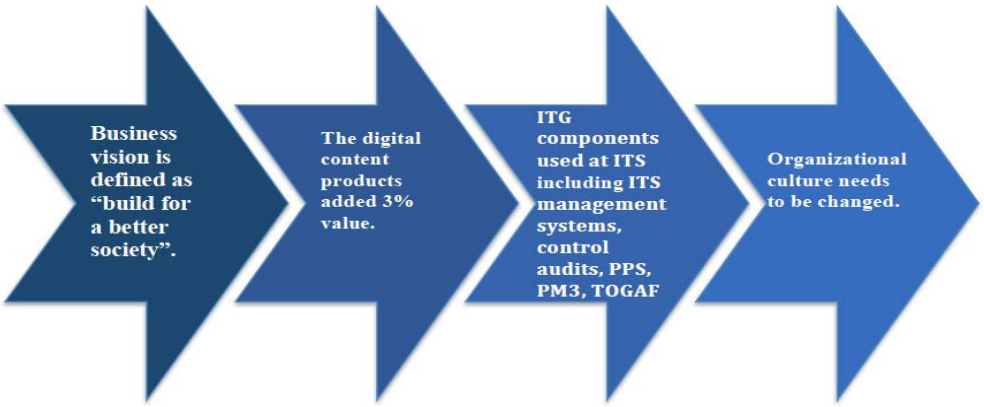

Figure 5. ITS plan to change organizational culture in order to improve IT governance performance and face the digitalization challenge

As it is shown in Figure 5 and also mentioned by the interviewees, *"In 2015 it was calculated that the digital content of SwedCon products have added three percentage value to the business"* [Interviewee 1]. This demonstrates that the effective use of IT for growth has become extremely important for ITS. The SwedCon's new project of building the largest hospital in Stockholm is one example of how intensive involvement of ITS needed throughout all stages of this project. Figure 6 represents how the ITS managers' deal with the digitalization challenge by considering organizational culture role in improving IT governance performance.

Figure 6. ITS plan (2011-2020) for dealing with the digitalization challenge by considering organizational culture role in IT governance performance (Source: ITS internal documents)

As is shown in Figure 6, ITS is planning to evaluate, compare and plan for future organizational culture based on how it works with their business strategies. Moreover, we noticed that SwedCon has reformulated its values for the next five years (2016-2020), that are the followings: *"1) Care for life, 2) Act ethically and transparently, 3) Be better together, and 4) Commit to customers"* [Interviewee 8]. Concerning these values the ITS managers believe that the last two values are in fact the ones that they currently they need to work on. A comparison between the OCAI assessment done at ITS between the years 2011 to 2015 and

the new one for 2016 to 2020 (Figure 7) shows how ITS has changed its organizational cultural and how ITS intends to be ready to adopt further changes, according to their business objectives.

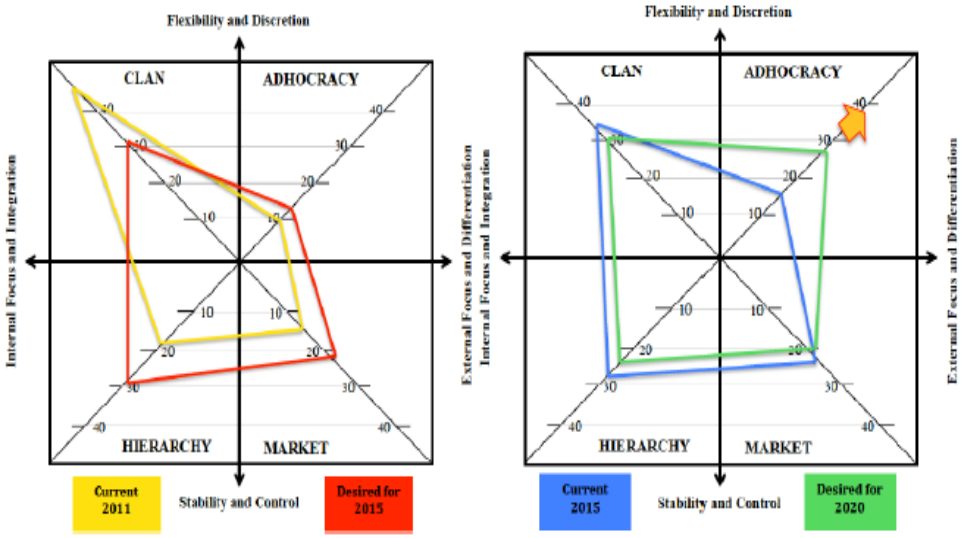

Figure 7. Organizational culture change at ITS: The results from OCAI assessment at ITS in 2011 and in the end of 2015 and the desired organizational culture type for 2015 till 2020

The diagram on the left in Figure 7 shows the results of OCAI assessment of organizational culture type at ITS in 2011 and the desired organizational culture type for 2015. In the diagram on the right in Figure 7, it is indicated the OCAI assessment of the organizational culture type at ITS in 2015 and the desired organizational culture type for 2020.

5.5. The Organizational Culture Activities Planned in order to Deal with the Digitalization Challenge

As we have mentioned, in order to face the digitalization challenge by considering organization culture for improvement of the effective IT governance in growth, the organizational culture of ITS needs to be changed to adhocracy type of organizational culture. To accomplish the adhocracy organizational culture type the ITS managers have made a plan with the actions to be taken for 2016 to 2020 (see Table 2).

Table 2. Actions planned to move to the desired adhocracy oriented organizational culture (based on ITS senior managers statements)

Action Number	ITS Organizational Culture Actions Planned for 2016-2020
1	Promote the proactive "development budget".
2	Make sure that the "development budget" is used.
3	Allocate free uptime for R & D.
4	Awards for innovativeness.
5	Be systematic in communication and collecting innovative ideas.
6	Create teams with IT and business people to solve customers problems.
7	Plan for story telling, news feeding and blogging for each task.

The planned organizational culture actions presented in Table 2 were suggested by six managers of ITS, including the CIO. According to ITS managers the most important issue in planned ITS's organizational culture actions shown in Table 2 is the "development budget," since this is the budget specifically allocated to ITS by SwedCon. *"The development budget supports the notion of having a strategic role and being innovative"*. This budget has not been fully used by ITS, which is attributable to *"their mindsets and culture"*. Therefore, ITS needs to change its organizational culture orientation in such a way to use their whole development budget, which means being more creative. "*It is very important to make people aware that the development budget exists and how they can use it"* [Interviewee 8].

6. Concluding Remarks

This study contributes to knowledge in the field of IT governance by exploring the organizational culture role and its influence on IT governance performance to face the digitalization challenge. The research has been conducted through a case study in an IT department (ITS) of a large construction company in Sweden (SwedCon). To face the digitalization challenge, SwedCon has looked to change the role of IT from a supportive one to a strategic driver for the business. This challenge has determined the IT department to find new ways to improve the IT governance performance. In this perspective organizational culture has been considered in addressing the digitalization challenge because it has a noticeable influence on the IT governance performance. In particular, the characteristics of organizational culture types, such as communication styles and attitudes toward innovation and creativity, were found to influence the IT governance performance. The initial clan-oriented culture at this organization has been responsible for achieving a higher score for cost-effective use of IT. However, in such a large organization, this organizational culture has caused disintegration, sub-optimal use of information, a lack of creativity and innovative solutions, and an aversion to risk-taking. The OCAI assessment also revealed that the IT department is moving to a more adhocracy-oriented culture, in which the main characteristics are creativity and innovation. This type of organizational culture is desired in order to push for improvement in the effective use of IT for growth and digitalization.

However, this study has some limitations. This research focuses on a deep study of one organization as a single case study, thus the results can be limited to this specific case and might be different for other scenarios. Moreover, the data was collected through interviews done with senior and middle managers; therefore the results do not necessarily represent the influence of different organizational culture types that may exist in some subunits.

Finally the findings of this study suggest several areas for further research, for example the study of the influence of different organizational culture types while the role of IT is changing in the organizations.

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