DIGITAL HIERARCHIES – ON THE RISE OF POST-MODERN COLLABORATION

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ABSTRACT

To remain competitive on the market, organizations are not only required to stay aligned with continuous business transformation, but also to generate internal operational efficiency by leveraging emerging technologies. Furthermore, companies are pushed to rethink their organizational configuration, placing additional strain on existing structures, or attempting novel and different forms of internal and external cooperation to adequately handle the rising complexity of global corporations. In order to better understand the relationship between technological solutions and collaborative architectures, this work will examine some of these novel combinations using an exploratory multiple case study methodology.

Keywords*: Digital Technology, Digital Organization, Hierarchy, New organizational forms, Collaboration architectures.*

1. THEORETICAL AND EMPIRICAL BACKGROUND AND RELEVANCE

Firms are increasingly aware of having to undergo a digital transformation (Brynjolfsson and McAfee, 2014) that not only generates radical shifts towards new ways of creating and delivering value, but also has a profound impact on how activities are organised and accomplished. This double pressure leads practitioners and scholars to question about proper ways of organizing (Snow, Fjeldstad, & Langer, 2017). To shed light on this major transformation, we have decided to focus our research on companies with different level of digitalization, attempting to detect the organizational elements and architectures made possible by the advent of digital technologies. Burton, Håkonsson, and Larsen (2020) define the digital company as "an organization that has managed to enable core business relationships with employees, customers, suppliers, and external partners through digital networks and digital processes". Where traditional configurations (simple, functional, divisional, matrix) are all based on the presence of a hierarchy that controls and coordinates work, digital technologies could (through specific rules embedded in the processes) replace these hierarchical forms of coordination (van Bree, 2021; Lanzolla, Lorenz, Miron-Spektor, Schilling, Solinas, & Tucci, 2020). When considering the organizational aspects and changes in the complexity of the managerial role (Acharya, Lieber, Seem, & Welchman, 2017), it is evident how the manager's interaction with his team may improve with the use of digital collaboration tools, benefiting the entire business. Consequently, it is reasonable to think that digital technologies can support new, lighter forms of organizing, amortizing the costs of less formal coordination (Burton et al., 2020).

This transition is of primary interest both for academics and practitioners as many firms are flattering their traditional top-down hierarchies and the superior-subordinate relationships are changing significantly (Billinger and Workiewicz, 2019). On a theoretical level, the contribution intends to address outstanding problems about future organizational structures (Burton, Håkonsson, Larsen, & Obel, 2020), focusing on the

transition to digital organization via the replacement of existing coordinating methods. To do this, the research will employ the actor-oriented architectural scheme (Fjeldstad et al., 2012), with the objective of further consolidating the framework through empirical evidence gathered from various organizational realities. For practitioners, on the other hand, the research aims to shed light on the managerial complexity that has been established with the advent of digital technologies and the attenuation of formal coordination, identifying structural and technological elements that can facilitate the increase in resource autonomy, thereby encouraging the ongoing transformation.

2. RESEARCH OBJECTIVES, PROBLEM AND/OR HYPOTHESES

This explorative work aims to deepen how digital technologies affect the organizational configurations of traditional firms. Digital technologies enable changes in internal collaboration mechanisms, moving from hierarchical form (divide and command) of coordination and control to more hybrid forms (i.e. self-organizing) with more dynamic roles (rather than static job descriptions) and an increase in overall autonomy (Snow, Fjeldstad, & Langer, 2017). This shift could be explored with the actor-oriented architectural scheme (Fjeldstad, Snow, Miles, & Lettl, 2012) represented in Figure 1, which provides a useful perspective to describe the emergence of new organizational configurations by relying on three different elements: (i) actors, (ii) commons and (iii) protocols, processes and infrastructures. These three elements enable wide groups of actors within the firm to collaborate by exploiting their self-organizing capabilities and limiting the usage of hierarchical procedures. Control and coordination can be achieved by establishing a dynamic network of relationships amongst organizational actors that rely on Commons, Protocols, and Infrastructures to communicate and collaborate.
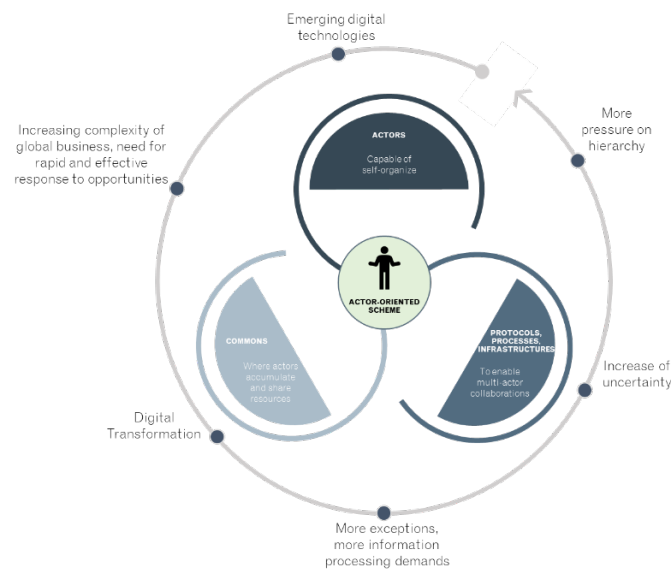

Figure 1 - Actor oriented architectural scheme (Fjeldstad, Snow, Miles, and Lettl, 2012)

Based on the organizational changes related to the digitalization of work, this paper focuses on collaboration architectures (Fjeldstad et al., 2012) to explore the transition from the traditional hierarchical forms to more hybrid and dynamic forms of collaboration enabled by emerging technologies.

3. RESEARCH DESIGN

The contribution will be an interpretative, exploratory multiple case studies research since the research question is exploratory in nature, the academic and managerial literature on the topic are still limited and the boundaries of the phenomena are not clearly defined (Yin, 2003; Eisenhardt, 1989).

In essence, the purpose of this study is to identify companies that modify their organization as a result of the deployment of a digital technologies (e.g., a new collaboration system) that influences cooperation and coordination. Thus, the unit of analysis will be the entire organization, with a particular emphasis on the actors' strategies for collaboration, coordination and control mechanisms, and the relative enabling infrastructure (with direct reference to the actor-oriented architectural scheme).

Specifically, in order to achieve the goals settled in the research question, multiple qualitative data will be collected and triangulated (Yin, 2003). Data collection will be performed through the analysis of documents and interviews (digitally recorded, designed in accordance with a standard and common and evolving research protocol developed during the course of the research). With respect to the research protocol, two main sources for data collection have been identified: (i) information from companies that intend to actively participate in the research (semi-structured interviews, archives and public documentation) targeting managerial level or higher, to ensure a clear vision of the organizational structure, processes, control and coordination mechanisms, collaboration tools and platforms, and DT projects; (ii) information from professionals of a consulting global firm regarding projects and experiences relevant to this work (as a collection of insights on salient issues emerging ex-post from company interviewed), to corroborate and enrich the discussion also from a practitioner point of view.

During the within and cross-case analyses, primary data (interview reports) will be transcribed and analysed via coding technique (Gioia, Corley, & Hamilton, 2013) and compared with secondary information (archival documents and organization materials) (Burt and Lin, 1977) also conducting, whenever appropriate, telephone and email follow-ups with the contact people questioned, thus allowing us to obtain more robust conclusions. Finally, the analytical process will be iterative and based on established technique to move from raw data to theoretical insights (Gioia et al., 2013; Langley, 1999; Livijn 2019).

Research Methodology	
Units of analysis	Entire organization (focus on collaboration/coordination elements and architectures enabled by digital technologies)
Case selection	Multiple cases with different level of digitalization
Data collection	Multiple sources from different sources (triangulation) • Primary: semi-structured interviews (virtual), archival data and documentation • Secondary: consulting professionals experience from previous projects
Data analysis	Interviews analysis (coding)
Findings interpretations	Iterative analytical process (Gioia, Corley, & Hamilton, 2013)

Table 1 – Research methods overview

4. DISCUSSION AND (EXPECTED) RESULTS

As a result of constant advancement of technology, businesses have developed strategic plans to capitalize on new technologies in order to gain a competitive advantage in the market. To accomplish this, the organizational structures themselves are changing and generating new collaboration architectures. The intention of this study is to identify and discuss the major changes in organizational configurations as well as collaboration mechanisms. The evidence that emerged from the analysis of Company A as an example of a digital organization that operates using a rich community of users is summarized in the following paragraph.

PRELIMINARY FINDINGS – COMPANY A

Company A is a digital company that creates value for its customers by connecting people via technology (crowdsourcing platforms) and generating insights via a shared working methodology that helps clients to make business decision more consciously. We interviewed the Chief Community Officer, focusing on community organization, coordination and control mechanisms, and collaboration between internal team and external users. The focus of the "Company A" interview was kept on the Community, as a collaborative architecture enabled by digital technology that is of interest for this research; a reconstruction of this architecture is shown in Figure 2 and the following paragraphs reflect the key findings of this initial investigation.
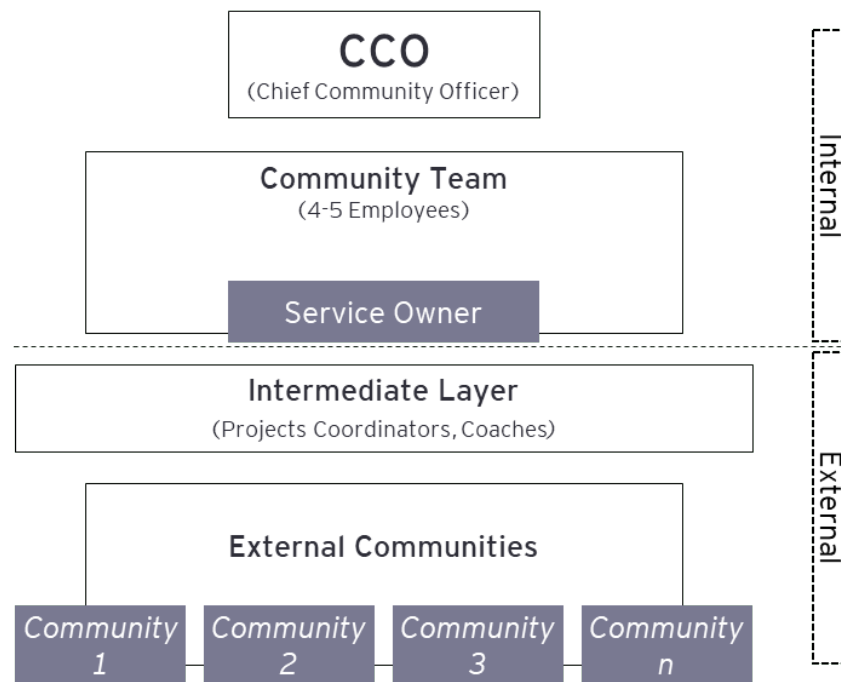

Figure 2 - Collaboration Architecture of Company A

4.1.1 A SMALL INTERNAL TEAM CAN MANAGE LARGE EXTERNAL COMPLEXITY
The difference in the amount of internal and external resources involved is the first factor of interest that is revealed by the structure. A huge number of external users are indeed

managed by a very lean internal structure that uses an intermediary layer of 'expert' users who act as coordinators and team leaders or coaches.

"the number of subscribers, we are over 50,000 at the moment, but the [intermediate] layer is much smaller, we are talking about dozens of people who help us. As for the internal team, we are six / seven people."

The activities that are now managed by the intermediate layer were previously carried out by the internal team; nevertheless, continuous progressive outsourcing (supported by digital infrastructures) enabled the community's operations to scale.

4.1.2 PUT THE USER JOURNEY AT THE CENTER

Since the community user is at the heart of Company A's value proposition, the company has organized itself to combine two essential elements: enabling the user to be competent and independent in using the platforms and maintaining his constant engagement. An onboarding phase is anticipated to prepare the user for autonomous collaboration. The user is introduced to the platform's features and functions and the community membership processes during this initial stage. The user is "enabled" to perform the tasks for clients after completing a dedicated training section (specific to communities) that takes the form of a learning path.

"In the initial phase we have an onboarding that allows the user to understand where she/he is and what she/he will do within the platform. [...] we push the user to immediately enter the 'University' section [...] which contains useful courses and articles to learn how to carry out the activities. [...] if the user gets to the bottom of this part, he is involved in customer [...] campaigns that have an economic reward."

In comparison to the number of users in the community, the tasks for customers are limited (utilization problem). In order to keep users engaged, track their progress, and choose the most experienced users to train as team leaders (thus moving them to the intermediate layer), Company A has created a variety of gamified activities.

4.1.3 STREAMLINE PROCESSES BY PUTTING THE CUSTOMER EVER CLOSER TO THE USERS

Management of interfaces between communities (intermediate layers) and customers takes time and might result in bottlenecks and significant coordination costs. In Company A, this process is covered by customer relationship figures (CSM, sales department) who collect customer needs and report them to team leaders. To address this issue, Company A has chosen to create a software as a service (SaaS) that connects customers directly with community team leaders who would handle requests (ticketing system) and organize activities.

"What we are working on is to create the opportunity for the customer to write these needs within this form, to have a tool for customers to make sure that there is no need for a CSM to do this passage from Customer to Community and vice versa. So, we should make sure to bring the end customer closer to our community."

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