

**UNIVERSITY OF VAASA
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**STRATEGY AS PRACTICE:
SEEING THE PRACTICE OF MATERIAL DEPLOYMENT THROUGH
AFFORDANCE LENSES**

Master's Thesis in
Strategic Business Development

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ABSTRACT

The objective of this research was to investigate socio-material aspects of affordances regarding the practices in the strategy work. The materials have been studied on and off for a while and traditionally this research has had its roots in resource-based views. The strategy-as-practice stream has benefited the management research by giving importance on what strategists and practitioners do in practice. The findings of the empirical research showed evidence for abundant contemporary methods in the application of the technologies and programs before and after the meeting.

The paper managed to include two distinctive datasets for the analysis. The meeting practices showed how the contemporarily strategic meetings are conducted both virtually and face-to-face. The data analysis finds evidence that the practitioners are tolerant to the certain program and material related inefficiencies and side-effects although their task as a strategist and practitioner relate to finding the solution to these issues. The industrial design directors (the Cluster 1) discussed how they convert intangibles to tangible outcomes through creativity, use of methods and tools, and especially communicate with visual means. The middle-management informants (the Cluster 2) were involved to follow the strategic agenda, the policies related to the use of selected technologies and take action related to a distinctive set of social practices in a global company. The findings show how one large organization utilize telecommunication as an important enabler in the praxis. As a managerial implication, the paper proposes discussions on the key technological instruments in the praxis to better justify current routines: the constraints limit the efficient practice. The phenomena of postponing the chance could be explained by dwelling until the strategy emerges.

KEYWORDS: Affordances, sociomateriality, strategy as practice, capabilities

1. INTRODUCTION

The research paper is both descriptive and exploratory. It reviews practical knowledge of what the practitioners in a praxis themselves think and do regarding to technological possibilities. In addition to the mentioned systemic issues, the study stream is parallel to information technology related research increasing the complexity around the topic. Because the phenomenon of socialised strategizing is so strongly a consequence of a practice as a norm (Whittington, 2007), a change in material policies could be achieved through novel insights from the professionals who deal with the dominant technology today.

The primary objective of this paper is to interpret strategy as practice together with the influence of contemporary artefacts and technologies in case company clusters. The approach enhances the research by providing a possibility to see distinct material practices in interrelation to their affordances and how data becomes noteworthy and meaningful in the praxis through collaborative effort of different actors in management. As a reference point, a techno-socio interface (See Orlikowski, 2007; Dameron, Lê, & LeBaron, 2015) displays the core and auxiliary technological systems in togetherness of human interface. In the research paper, I use the term affordance (Gibson, 1979), the term that has been lately recruited into research agenda by scholars (Dameron et al., 2015; Demir, 2015; Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007) in prior to this paper, to demonstrate the possibility to create more efficient workplace to the actors in organizations; "An affordance perspective recognizes how the materiality of an object favors, shapes, or invites, and at the same time constrains, a set of specific uses (Zammuto et al., 2007)."

In the end, the literature and the empirical research will showcase the social practices and technological selections moulded as an interactive subject. The findings assist understanding the current praxis in design and IT service company clusters against their practitioners' routines and agency. Furthermore, the discoveries present the technology and material practices as affordances with its connected duality: enabling or disabling, motivating or constraining, or with a positive or negative reference.

1.1. Motivation for the study

In the last decade, the organization of socio-material matters has gained an increasing attention in strategy research publications. Materials are found essential to social strategizing (e.g. Whittington 2007, Whittington, 2014; Dameron, Lê, & LeBaron, 2015). In particular, researchers (for example, Dameron et al., 2015; Vaara & Whittington, 2012; Leonardi, 2011; Demir, 2015) have displayed novel methodologies to study the field with stronger focus in material use and strategy as practice. The interest has been changed from macro to micro analyses of strategies.

This study is built on the ground that affordances in strategy materials influence the strategic decision making: the paper tries to evaluate where the affordances (referring to early definition of Gibson, 1979) can be pinpointed in material richness. Hence, concurrent advancements in the studies of material exploitations at praxis (the core of strategizing activity) have also yielded many descriptive insights and shown the importance of material dimension in strategy (Whittington, 2014; Dameron et al., 2015): strategy practice materials and material practices are elementary for strategists and practitioners. Moreover, research has been encouraged to place a proper attention to the role of materials and organizing these matters for the organizational theory (Orlikowski 2007: 1436). What is more, big data has changed industries and decision-making processes.

Due to a special delicacy of the topic about materials in strategy with so many distinctive and some intertwining currents, the thesis has been complemented with illustrations and tables to respond to typologies of material aspects. This way the abstract transforms itself to more concrete narrative. The central ideas, however, is

to connect the sayings of strategy influencers to the actual strategy establishment through the medium of praxis.

1.2. Research gap

The materiality has been mostly absent from theoretical underpinnings of many organizational and strategic studies until the last decade, and therefore represents many avenues for research. Only recently material aspect has gained more attention on the praxis, where elite-and middle-level managers operate.

Research gaps are numerous. A relation between outcomes of technology and humans has received only a little of interest (Orlikowski, 2007: 1444; Dameron et al., 2015). The demand for sociological eye has been stated in the literature often but empirically it is less often examined. As an obvious evidence of increase in socially interpreted interest, the review *“Materializing Strategy and Strategizing Materials”: Why Matter Matters”* (Dameron, Lê, & LeBaron, 2015) collected the latest research papers, and organized strategy materials in distinctive and analytical categories: See strategy materials categorised in the Table 2.

Both the influence of technology and studying the materials in a multimodal context have been stated to require more attention (Dameron et al., 2015: 9). Moreover, in 2007, Orlikowski argued that the lack of interest was due to an unexamined absence of comprehension of the meaning of materials (some visible, others less visible) in organizational theory (Orlikowski 2007: 1436). In other words, material strategizing occurred based on tacit knowledge in the practice and had not earlier been given attention in the theoretical framing. In practice, decision-making in relation to materials may present competitive benefits for business units which realise and have

the economic advantage to harness them.

As a new research field, the materiality has immense potentials to be explored for management research scholars in materiality's co-existing and co-acting attributes amidst the organizational strategy and, thus, it increases the knowledge on the role of material aspects in both formation and implementation (Mintzberg & Waters, 1985) of strategy. For instance, Garreau, Mouricou, and Grimand (2015) researched on sensemaking through visual representations', and argued for the extended body of scientific interest (e.g. Balogun and Johnson, 2004, 2005; Jarzabkowski, Spee, & Smets, 2013 and so forth referred in Garreau et al., 2015: 689). In addition, they created a concept to assess the evidence for a relevant use of visual materials in practical sensemaking, therein, they recognised the possibility for strategical "blind spots" in sensemaking of participated situations and recognised the support or challenge (Floyd & Wooldridge, 1994: cited in Garreau, Mouricou, & Grimand, 2015: 705) decisions to be part of practitioner's influence in a praxis.

Based on the literature analysis for this thesis, it is apparent that new dimensions are constantly added to unfold strategic processes and practices at the implementation phase to find new concepts that attempt to bring content on existing models and theories. To exemplify the recent developments, "*Materialization Strategy*" (Thomas & Ambrosini, 2015) has presented strategy formulation-implementation in volatile environments by using Mintzbergian approach (Mintzberg & Waters, 1985; 'deliberate and emergent strategies') by engaging management controls (e.g. process control), top management championing (e.g. information availability), and planning practice (comprehensiveness). Strategy as

practice is concerned on how practitioners decide meanwhile executing strategic plans, but the inclusion of social practice proposes the readiness to accept changes.

Together with the wave of physical attributes of materiality, the strategy as practice development offers novel paths to approach the organizational management routines. Firstly, the research for practice has now begun to focus both on internal micro-view (i.e. activities within processes, materials) and, and secondly, on external macro view that allows the analysis to absorb external sources of knowledge, that influence the internal practices. (Burgelman et al., 2018: 533; Whittington, Cailluet, & Yakis-Douglas, 2011).

In broader picture, the 'consistency' or 'patterns' (Mintzberg & Waters, 1985) are related to this research focus. Following the central contents in strategy as practice agenda, process and outcomes are results of practices and, and therefore, strategies rehearsed by organizations (Vaara & Whittington, 2012: 2). In parallel to studying 'complex, flexible, and polyvalent' strategy practices (Vaara & Whittington, 2012: 298), there has been a discrete ongoing long-term strategy research within Information Systems development (Green, 1970; Chen et al., 2010; Galliers, 2011; Merali et al., 2012, cited in Whittington, 2014: 87), to what Whittington (2014) has proposed a Joint Agenda to be researched. Interestingly, this absence of 'Information Systems strategic praxis (Whittington, 2014: 88) presents now a more realistic ground for an additional consideration as a target for strategic investments (Whittington, 2014: 88). The later, thus, requires thinking the praxis, where the strategy is being executed, together with a versatile set of strategists from different units.

Since these late developments of research can clarify the actual activities and processes, as the substantial focus of SAPP (strategy as practice and processes), the switch will most likely picture organizational success properties to those that find them as foundations for strategy. For instance, Resource-based View (RBV) has been given the birth a long time ago, and many modern contributors have kept Edith Penrose's name actively in use. Inarguably, the post-scientific management accelerations of firm resource research are ever valid in the strategic research. According to Amit and Schoemaker (1993), capabilities accelerate and coordinate resources to wanted direction together with organizational processes. In opposition to emphasised economy-driven contemplations (e.g. profit orientation, entrepreneurial or leadership influence), the practice as a rehearsed social activity has been in a distinctive focus set apart from process orientation or planning (Vaara & Whittington, 2012; See also Table 3). The research community has a perceived opportunity in practice since it pictures the management activity in relation to social side of the business phenomenon.

1.3. Research problem

The main question of this paper (**RQ1**) examines the importance of both technology and humans with the foci of materialization in resource operationalization, in other words, capability creation. The gaps have been identified from writings within the materiality and strategy-as-practice with concerns (theory vs. non-empirical papers) stated in Shapira's (2011) criticism towards theoretical papers. Regarding to it

(Shapira, 2011), this paper draws on both types of papers since it hypothetically enriches the understanding of the research.

RQ 1. Identifying the materiality affordances in the strategy-as-practice and praxis context (central research question; practices and material strategizing)

RQ2. Identifying the how practitioners actively organize the data before and after the meetings (See Fig. 2.; See theme 1)

RQ3. Identifying the utilization of a passive technology to influence strategy-as-practice as a routine (See Fig. 2.; See theme 2)

RQ4. Identifying contemporary material practices as such in the clusters (See Fig. 2: See theme 3)

The problems in research questions commonly originate from the fil-in-the-gap constructions. Often researchers creatively generate new research questions with new perspectives instead of looking at the assumptions beneath the theories or challenging the previous literature. (Alvesson & Sandberg, 2011).

In the paper, I will analyse the affordances of actors and technologies in strategy-as-practice framework. The goal of the research is to examine especially the role and implications of technological affordances in strategy work. It attempts to find more meaning on the prior research by paying closer attention to the parts of organizations that links the strategists together: namely the information technology

and the data within. The key research question (**RQ1**) replies to prior research suggestion of utilizing studies on the materials in the multimodality (Dameron et al., 2015: 9) interaction between humans, materials and technology. The following three subsequent questions provide a specification to the central problem and scrutinize possible decision-making areas for the strategists (See Fig. 2).

1.4. Thesis structure and presentation of connected themes

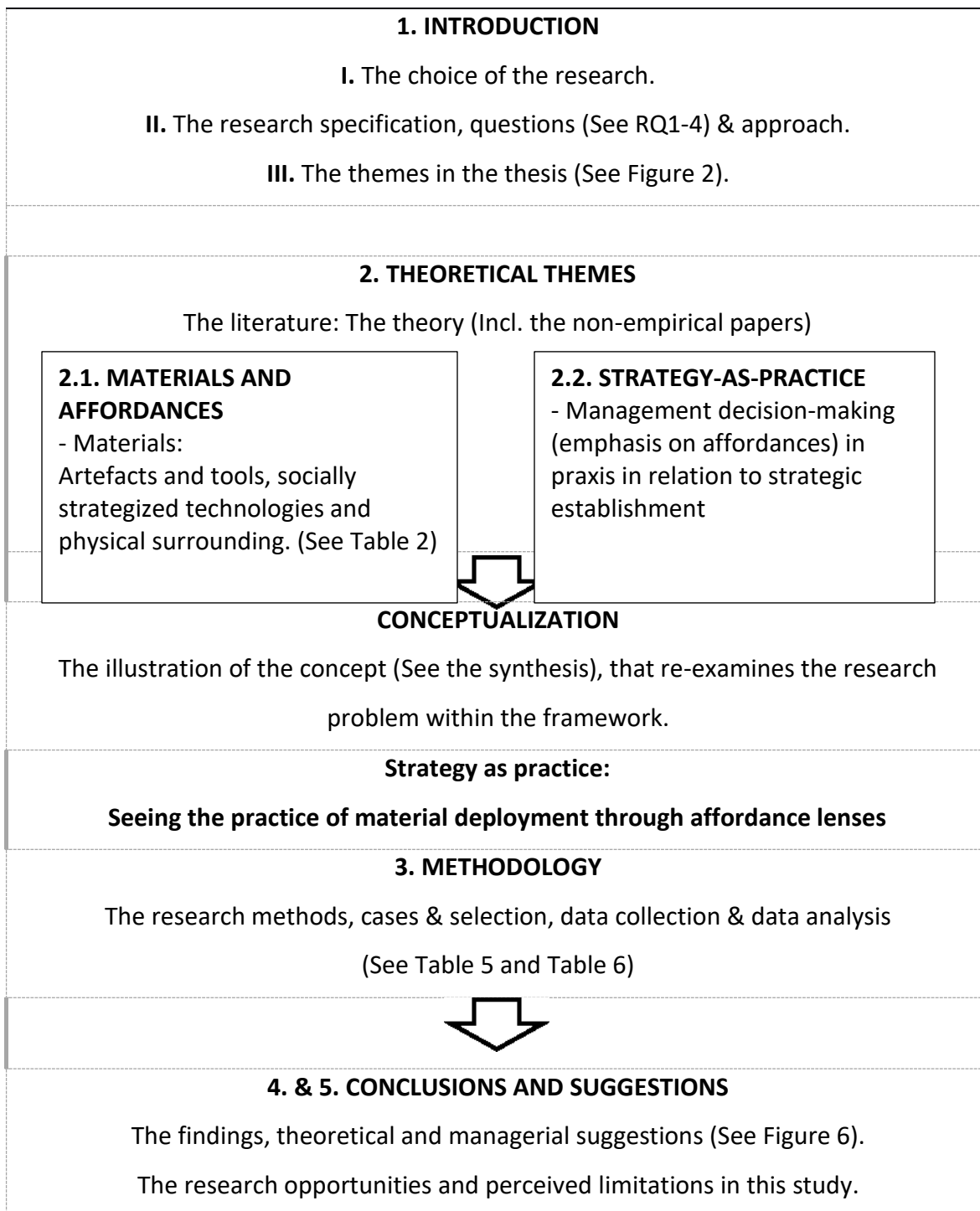


Figure 1. Structural illustration for the throughput of theoretical and empirical elements.

The thesis assumes for the decision making that contributes to emergent strategies. In this paper, the decision making can be drawn on three spheres (See Figure 2 below).

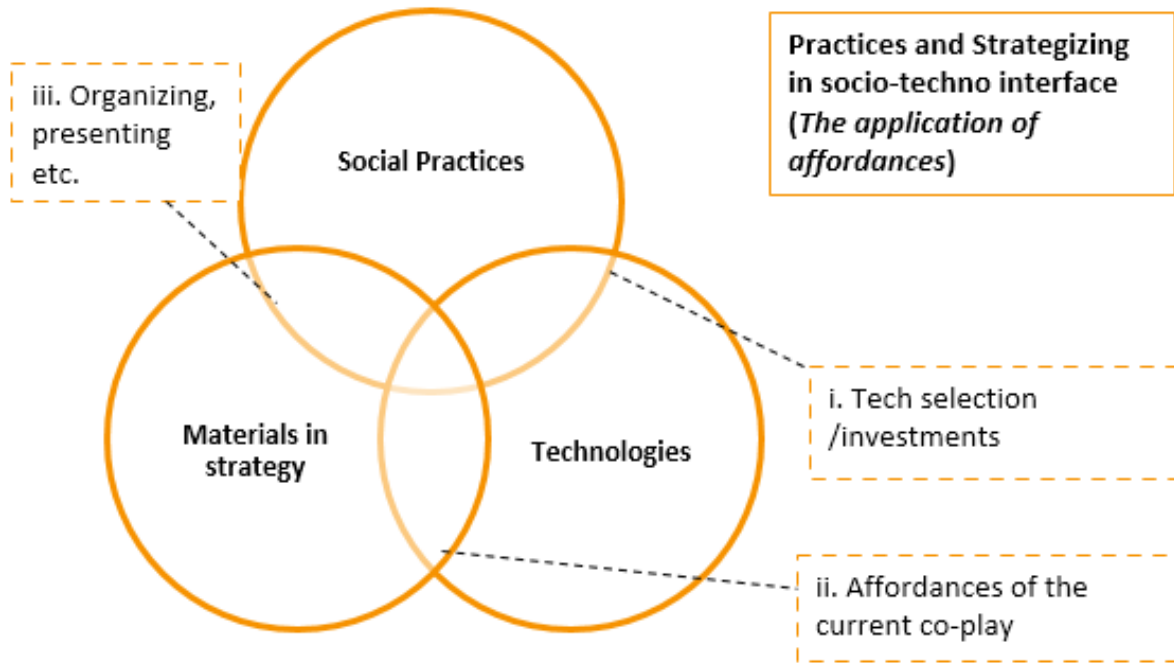


Figure 2. Core decision-making antecedents in thesis, and how they relate into materializing strategy.

In **Figure 2.** I display the thesis in central themes so that it becomes strategically clear how different spheres contribute to cognitive, physical and economical decision-making areas. To elaborate on the concept, each overlapping sphere indicates a requirement for action plans to executive decisions (foci in “Practices and Strategizing” in Fig. 2.). Figure 2. presumes that Social Practices influence technological selection (i.) and further effect to materials in strategy. The alternative

contextualization of decision making occurs in the relationship between socially active agents and the chosen materials in strategy. Since it is important to visualise that technologies have a deep impact to social practices and material accumulation and organization, I have chosen to present this visualization to support the cyclical interdependence of the antecedents to affordances and material support for firms to achieve their economic objectives.

2. LITERATURE REVIEW

In the literature review I build the framework to affordances which show opportunities for companies. Inherently, affordances connect to competitive advantages as they possess mediating and instrumental capacities. In the literature view I have focused less on big data scenario establishment and more to practical and thorough underlying constructions of affordances.

The literature builds the understanding on what is the role of affordance in the material side of the business strategy work. Because affordance itself expresses the meaning, purpose and possibilities in strategy materials, the materials can be understood only together with the goal-oriented practice of management. In the following chapters I therefore provide the argumentation line for the relevance of affordances in the decision-making at praxis.

The literature review is consisted of two major streams: (1.) technology related materiality and (2.) strategy-as-practice. These two streams assist in the creation of a coherent synthesis, that is presented in the chapter 2.3.

2.1. Technology and materiality

2.1.1. Typology of materials in materialization

To start with the theme “Materiality in Strategy”, I provide a general framework for the materiality in strategy through the work of Dameron et al. (2015) due to a fact that the paper does the rigorous effort of combining the most meaningful pieces of writings. Moreover, the paper structures them into a fabric of sound presentation of this elusive segment of the study. Later, I will make sense of the topic by illustrative tables and examples from different sources (See Figure 2, Table 2 and Figure 3) to clarify the topic for the reader. This is important because there is a risk that alternatively the research does not manage to indicate efficiently what are the central material considerations.

One perspective to materiality in the context of organizations is to see it as a time-space altering mechanism via the medium of technology (Leonardi, 2012). According to Leonardi, materiality, socio-materiality and socio-technological systems are linked by their conceptual presentations and by definitions. The socio-material practices relate to those that occur in socio-technical systems or “technical sub systems” of organizations. (Leonardi, 2012).

Materialization, materiality or material aspects of the strategy are most commonly described to be bound by their physicality, either by the active components (actor, technology, their interplay, etc.) or more passive elements (the result of this

interplay; objects and artefacts) as the paper will later show.

However, the novel research interests are still amidst of sheer delight of this new approach to understand the deeper levels of more classical management problems. For instance, several different contributors (to mention some, Vaara & Whittington, 2012, and so forth) have noticed that strategy and strategizing can be transformed, for example, by the physical built spaces, that give the affordances how these actualize and how the more timebound events occur in socio-techno co-action. More fundamentally, Dameron et al. (2015) have categorized five types of materials in strategy and they are represented and exemplified below in Table 2.

Relevance	Key idea	Elaboration	Contributor(s)
Socio-techno	Affordances as unique relative material properties in action and environment	The co-play of humans and objects (Gibson, 1986; cited in Leonardi, 2011: 152-153)	Gibson, J. (1986 & 1979) -Perceptual psychology
Materials in strategy	Recognition of five types of elements	Materials in strategy (See the Fig. 2.1.4 below)	Dameron et al. (2015)
Socialised strategizing	Social practices require the use of materials (tools & technology)	1.) Promotes the social dimension in practice level, and recognises the materials to be a part of strategy practice and activities, e.g. strategic tools such as SWOT or technology 2.) The use of materials relates to routines and norms	Whittington (2007)
Materializing strategy	Strategy formulation and implementation as a throughput in the organizations	Conceptually describes how strategy is being processed (discourses & narratives, and its versatile role of materiality; formulation and implementation)	Dameron et al. (2015); Thomas & Ambrosini (2015); For formulation see Figure 1 in their paper)

Table 1. Recognition of material, materiality, and materialization attributes.

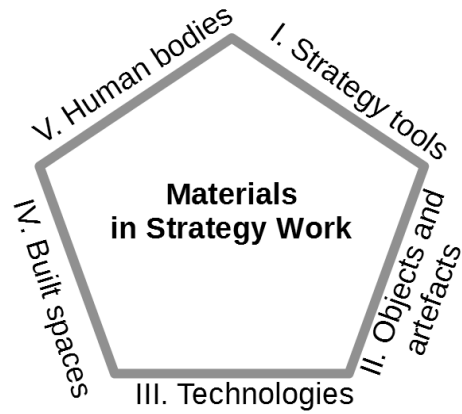


Figure 3. Types of materials in strategy work (applied from Dameron et al., 2015).

The Table 1, Table 2 and Figure 3 (above) provide the semantic base for understanding the research area, and the language used in this paper; the novelty of these research streams is also noted with the articles between 2007 and 2015, that result in conceptualizations of this chapter.

Material Type	Distinction	Definitions
Strategy Tools	Instrumental	Most common materials used by strategists (Jarratt & Stiles, 2010; Jarzabkowski, Giulietti, Oliveira, & Amoo 2013 etc.). SWOT and Scenario analysis (incl. correlation matrices, mental mapping & computer modelling)
Objects and Artefacts	Residual	Concrete and/or discursive (Higgins & Mcallaster, 2004), Textual and/or visual (Jarzabkowski, Spee and Smets, 2013), Physical and/or digital (Leonardi, Nardi and Kallinikos, 2012) "[...] tangible, visible or audible residues of past acts of meaning – [...]" (Dameron et al. 2015: S3)
Technologies	Mediating Instrumental Residual	Language and labelling/ Physical design/ Compatibility with other technologies/ User options/ Software, PowerPoint, photocopier etc. "Physical features of technologies, [...] necessarily shape how a technology may be used within the strategizing process." "[...] are pervasive in organizations and integrated into work practices, and thus necessarily influence the way people do strategy."
Built-spaces	Physical places	Architecture and furnishings. Boardrooms, offices, meeting rooms and hallways; color, acoustics, decorations, etc. 'Strategic spaces' (Jarzabkowski, Burke & Spee, 2015) "Strategy work always occurs within the confines of a physical space (Cornelissen, Mantere and Vaara, 2014)."
Humans	Mediating Cognitive Interpretive	Sense-giving and sense-making (LeBaron and Whittington, 2011) Objects Anatomy and physiology (Barad, 2003, p. 809, cited in Dameron et al., 2015: 5) "Strategic discourse is always accompanied by bodies and artefacts, which provide for the interpretation of each other (LeBaron and Whittington, 2011)."

Table 2. Distinctions related to material types adapted from Dameron at al. (2015).

2.1.2. Affordances in socio-techno structures

The literature of strategy and practice (Vaara & Whittington, 2012) conceptualizes the practice notion to relate enabling or disabling social activities. Furthermore, Strategy as practice researchers often refer to *affordances* (Gibson, 1979) when discussing materials (Dameron et al., 2015; Jarzabkowski & Kaplan, 2015). The use of Gibson's (1979) notion helps in the understanding of why and how socio-techno structures paradoxically may or may not leverage the cohesive strategy formulation and implementation in the praxis or elsewhere. Gibson (1979) argued that the affordances of objects and environment are perceivable regarding to *values* and *meanings*. Nonetheless, organizational context, it is not always clear how well these values and meanings are perceived by the actors.

Occasionally, because of the level of ownership of the issue, technologies should likely be regarded in two categories: internal (like built, acquired or under constant development) and external (like open-source, public or mainstream). So far, technologies appear to be regarded without any distinction, which appears to be often the case in strategy-as-practice. To continue with the nuances of distinctions of us and them thinking (internal-external), for the note, the opening of firm strategies (Whittington, Cailluet, & Yakis-Douglas, 2011) for transparency, has for a long presented an option to allow external strategists to bring in consulting via strategy tools and knowledge.

Prior cross-disciplinary literature (mainly Information Technologies and SAP; Whittington, 2014) perceives technology as a vital tool for activities, practices, and resources. Furthermore, as management (Danneels, 2010; Eisenhardt & Santos, 2005)

research has shown, technologies are often associated with resources, and capabilities, and furthermore linked to product portfolios.

Organizing activities both in the social and technological framework has included some concerns in socio-technical (mentioned first by Trist & Bamforth, 1951) relations. There, the relation between introducing new technologies, rationalizing the processes and limiting the social interaction is linked to negative outcomes such as an increase in psychosomatic absences. (Eriksson-Zetterquist, Kalling, & Styhre, 2011). This social consequence is worth to mention together with affordances, since it shows that technological emergence can also produce negative outcomes.

More relevant to modern organizations, as Zammuto, Griffith, Majchrzak, Dougherty, and Faraj (2007) inform, the information technology has now partially replaced the role of traditional bureaucratic organizations in their active organizing tense. Evidently there has been a change in how today's organizations function. It is unclear if the management and the operating core have distanced themselves from the social interaction, and therefore, alienated themselves from each other.

In addition to affordances, and to previously expressed concerns, Heideggerian availableness in both material and social aspects has been suggested as a gateway to understanding strategic materialization and *practical coping*. As Chia and Holt (2006) argue, the organizational emerging strategy is contributed not only by the objects (e.g. *representations, materials, and tools*) but that those objects require the purposive meaning for occasions in which these representations are shown ("Heideggerian availableness"). (Chia & Holt, 2006).

Altogether, twining the previous views of organizing technologies and socio-technological findings in a cluster, we see how grasping opportunities (Whittington, 1996), Heideggerian availableness (Chia & Holt, 2006) and possibility of negative consequences from each alignment are at the core of strategy as practice: they respond to taking both social practices (Vaara & Whittington, 2012) and business practices seriously.

2.1.3. Data as material: Creating value by looking at data

The competitive demands of markets set new opportunities and threats to organizations which also ask the companies to change their activities and decision-making processes. Since the new technologies are available, those that tap them first, are ahead of a competition (Galbraith, 2014). For instance, big data is historically a phenomenon that has its impact on nearly all-type of materials. Big data, however, presents itself as an opportunity since it creates novel visualizations and real-time based insights to business operations. As consequence, big data generates new type of data, that organizations analyze.

According to Oxford dictionary, data can be defined the following way: "Data as processed, stored, or transmitted by a computer." Incorporation of Big Data technologies introduces new data-driven materiality inclusions in relation to five types of materials. A digital data stream that follows the laws of big data and accesses the business intake can be harnessed with new technologies from "human-generated (e.g., Twitter or Instagram) or machine-generated (e.g., a CO₂ reading, a

GPS location)" sources (Pigni, Gabriele, & Watson, 2016: 7). Moreover, the algorithm-driven data analytics relates to various commercial or open-source Business Intelligence and Analytics (BI & A) technologies (Chen, Chiang, & Storey, 2012).

Furthermore, modern organizations can find big data transformation challenging in terms how to harvest value (Mikalef, Boura, Lekakos, & Krogstie, 2019; Merendino et al., 2018; Côte-Real, Ruivo, Oliveira, & Popovič, 2019;)(Côte-Real, Ruivo, Oliveira, & Popovič, 2019), and adding its related capabilities. Transformations often challenge directors' in multiple ways: board and directors must enhance their cognitive capabilities, acquire respective capabilities and build new decision-making models in the case that these skills are not already present (Mikalef, Boura, Lekakos, & Krogstie, 2019; Merendino et al., 2018; Côte-Real, Ruivo, Oliveira, & Popovič, 2019)(Côte-Real et al., 2019). Frontrunners use digital capabilities to capture additional growth with their real-time strategic decision-making (e.g. Nike) or value proposal to sell real-time services to final customers (e.g. Citibank) (Galbraith, 2014).

As a result, the respective mental and organizational turnarounds are packed with uncertainties that make fears more comprehensible. Furthermore, industries differ from each other and, yet, other time being the first mover is what matters. Hence, advanced big data adaptation is mandatory within certain industries, because the only trade-off might be a business performance failure. McKinsey & Co. report (2014) has encouraged European banks to participate with an expectation of 30% revenue creation. (Pigni et al., 2016). In practice, Digital Data Streaming is sequenced

in phases. At the process, organizations generate, stream and harvest the data stream constantly. The value creation can result though harvested data only when it is structured and analyzed as “the presentation of superior insight that enables better decision making”. (Pigni et al., 2016).

At the end of the day, the question for a strategic apex is what big data can do for this business? Hence, the upper echelon is presented by a question: what happens to the business, if the decisions regarding data governance and big data technologies are being postponed? Furthermore, if they decide to powerfully integrate, they must relate decisions to what sources of data are used (e.g. sensors, Internet, ERP), does the collection follow legislation and which *digital decision makers* (Galbraith, 2014: 3) must be acquired to uncover the hidden value of this data. The opportunity is drawn on business intelligence, which can cast a real-time monitoring across all organizational activities (Kitchin, 2014).

2.2. Strategizing through Practices and praxis: strategy-as-practice

The materials are created, recreated and left behind in the process of strategy materializations. Both materials and strategic emergence belong to research objectives within strategy as practice (Vaara & Whittington 2012: 2). As the strategists establish decisions on important matters, Whittington's representation (See Table 3) serves the role for understanding the organizational top-down-top streaming of decisions and especially decisions' impact on materiality aspects (e.g. technology, data, value creation) which relate to all types of material decisions (See Dameron et al. 2015) to advance the deliberate strategic initiatives.

All strategizing is done in practice, and as Wolf and Floyd (2013: "Fig. 1") suggests, the strategy-as-practice can be used to show how the planning is done. At this point, it becomes clear that the practice framework (how things are done; Whittington, 2006: 619) relates to the web of four quadrants shown in the Table 3. In this setting, the strategists bring in the content (Practices) and methods (Praxis) of how and where strategizing is done. Because of this planning-practice engagement, strategy-as-practice corresponds to decision-making, that cascades to the governance of all material aspects in an organization and, for instance, to how sense-making of current activities is achieved using technologies. Furthermore, as they (Wold & Floyd, 2013) depict, contingencies and dominant strategy processes influence to emerging strategy, and they are hardwired in the strategic planning. To highlight the human interaction, the research field is described to have a careful focus on social practices (Vaara & Whittington 2012: 41), which is exactly the reason why this paper researches on material affordances from social standpoint.

	Levels	
	Organizations	Managers
Where	Policy	Planning
How	Process	Practice

Table 3. Four perspectives on strategy (Whittington, 1996: 732).

In 1996, Whittington argued for the importance of placing the focus on strategists and how managers “do strategy”. Whittington further explains how doing strategy consists of “the getting of ideas, the spotting of opportunities, the grasping of situations”. Besides these inspirational doings, the practice involves constant engagement with local routines and strategizing. Basically, practicing requires capturing the idea of bringing together both “local routines and the different roles involved in strategy-making”. Therein, an effective practitioner comprehends his role in relation to other roles in organizational construction, whereas all these roles feature distinctive practical competences. (Whittington 1996: 731-732).

The strategists are therefore in charge as a socially bundled resource to create the

desired sustainability and competitive edge. Such a praxis-centered strategy is often approached by Mintzbergian strategy formulation and implementation process because it is the clearest option. In the context of environmental pressure, this perspective may be limited; Mintzberg and Waters (1985) themselves criticize this abstraction towards planning activities in terms of unrealised strategy and emergent strategy streams that are the forces towards strategic intentions *as actions* as to facilitate stance with plans. Together with plans, companies can nowadays make the use of predictions. As Mintzberg and Waters (1985) further elaborate drawing on Galbraith (1967; cited in 259), companies could gain accuracy on an environmental prediction and, with this mechanism, have a stronger position on markets they are situated.

Strategy as practice movement suggests “textual agency” as an overarching term (Cooren 2010; Hodge & Coronado 2006; Spee & Jarzabkowski 2009; Vaara et al. 2010, cited in Vaara & Whittington 2012:31) to approach the qualities which strategic plans present in the strategy. In their paraphrasing, Vaara and Whittington inform (2012) how: “In particular, strategic plans can acquire a kind of “textual agency”, that is the ability to exercise power over human actors and limit their degrees of freedom”, furthermore, they point out how these textual agencies are time bound to influence an organization. Materially thinking, this perspective is the backbone of strategic practices (SAP). Textual agencies situate in the fabric of technologies as tools and separately permitted use of these tools which afford the agents to achieve their purpose in each social context.

In addition to word-based (“textual”) presentation, meetings (Whittington, 1996)

expose a possibility to verbally articulate for an idea. The research on workshops have shown that the legitimate liturgy and ritualization influence the audience's "emotional and intellectual engagement": the effect is achieved with strategy executives' removal from the everyday routines, "the use of liturgy" and the "role of specialists" (Johnson, Prashantham, Floyd, & Bourque, 2010).

Consequently, strategy meetings generate demand for numerous visual presentations of numeric data or any form of visualizations. Back to Dameron et al. (2015; Table 3 and Figure 2) strategy tools and, thus, to objects and artefacts, the key materials can be used to support argumentations for strategy formation in praxis. This supports the idea that materials enhance sense-making and they are used in wide arrays of decision-making aids (conceptualizations: i.e. techniques, methods, approaches) for strategic management (Clark, 1997).

On some extent, it is the elite's job to harness technology: to take snapshots of business situations to clarify a specific specialist or managerial argument for or against the business growth challenge. Following Clark's (1997) broad view on management tools, technology could be recognised as a strategy tool since it is a method to leverage business outcomes.

Spee and Jarzabkowski's (2009: 224) argued that strategy tools are "part of wider strategizing activities", but do not represent strategy itself. Here, different ideas are part of the nature of materiality. If following the Mintzberg and Waters (1985), and that strategies come in many forms, then strategy tools among all five types of materials (Dameron et al., 2015), belong to strategies that organizations rehearse. For

instance, big data technologies contain qualities that spring business forward if integrated properly into organizations repertoire.

It is known that the debate on “what is strategy” has been ongoing in the literature (Hambrick, 2001). Dependencies such as the stance of the material tool in strategy may, therefore, provide fundamental competitive advantages regarding what are the dominant strategic school of thoughts in action. Furthermore, since all types of materials have *affordances* (Gibson, 1979) and their contributed input to the ecosystem is often unquestionable, strategizing is open for calibration. Strategizing prompts follow-up of a strategy, and creation of competences and capabilities.

Centrally, as Whittington (1996) claims, the practice includes the work of strategists that impacts the formulation and establishment of strategy. Strategist use tools which are methods to obtain objectives. Moreover, the methods and tools contribute not only to strategies as instruments to decision-making in praxis but can also create competitive advantages. One of the most defining expressions on strategic decisions is an extract from Shepherd and Rudd (2014):

Strategic decisions (SDs) can be ill-structured, non-routine, uncertain and pervasive. They cut across organizational functions, entail a significant financial outlay, and have profound, long-term implications for the organization. (Eisenhardt and Zbaracki 1992; Mintzberg et al. 1976; Shrivastava and Grant 1985; cited in Shepherd & Rudd, 2014).

By contrast, the role of technology has been linked to establishment of activities of both managers and the rest of the organization. Vaara and Whittington (2012) have noticed how pairing of *material technologies* and *social practices* have a significant

impact to praxis, and how these dictate the activity patterns. (Levina & Orlikowski, 2009; Orlikowski Yates, 1994, cited in Vaara & Whittington, 2012).

Although the strategy materials often are passive-enablers that anticipate the employee to use the expertise and effort to craft the work, the additional visualization may provide a major contribution for the strategizing itself. As Garreau, Mouricou and Grimand (2015) researched, sensemaking can greatly enhance from visual representations, and supported the argument by the extend body of scientific interest (e.g. Balogun & Johnson, 2004, 2005; Jarzabkowski, Spee, & Smets, 2013 and so forth referred in Garreau et al. 2015: 689). In addition, they created a concept to assess the evidence for a relevant use of visual materials in practical sensemaking, therein, they recognised the possibility for strategical “blind spots” in sensemaking of participated situations and recognised the support or challenge (Floyd & Wooldridge, 1994: cited in Garreau, Mouricou, & Grimand, 2015: 705)) decisions to be part of practitioner’s influence in a praxis.

Regarding the materiality, they draw on Praxis. Praxis concerns what is being done routinely by practitioners (strategists) in practices (Whittington, 2006), and it has activity expecting nature regarding the demand of receiving constant feedback on everything that contributes to the purpose of the organization. Furthermore, regarding to generic strategies, the contextual practicing strategy occurs from those of social interactions (Vaara and Whittington, 2012), and activity-based view/strategy-as-practice (Johnson, Melin, & Whittington, 2003) as an emergent strategy. This is mind, decisions are a consequence of social interaction and knowledge; therefore, actualizing decisions shape tomorrow’s practice related urgencies which

may be either successful or failing.

2.2.1. Strengthening affordances with resources and capabilities

The importance in affordances thinking is that both technology and humans belong to organizational resources that strongly dictate firm outputs. Their resources are guided by the strategies decided by the top management. Meanwhile, resources can be perceived as tangible and long-term structure, capability thinking will assist businesses to deploy these resources in order to peak and stay ahead in performance.

Beside the strategy-as-practice stream, capabilities thinking will assist the cohesive understanding of why placing an emphasis on techno-socio pairing and development is sometimes strategically valuable. Furthermore, the use of resources and capabilities are distinctively different from one company to another one (Johnson, Whittington, Scholes, Angwin, & Regnér, 2017: 97) which is why there are differences in outcomes and routines. In the view of Amit and Schoemaker (1993: 35):

"Capabilities, in contrast, refer to a firm's capacity to deploy *Resources*, usually in combination, using organizational processes, to effect a desired end. They are information-based, tangible or intangible processes that are firm-specific and are developed over time through complex interaction: among the firm's *Resources*."

The key ideology, that can be drawn on management and people working for organizations, has barely changed. Humans as a part of resource assets were studied

in a scientific management school of thought before the actual advent of strategic research. According to Drucker (1954) the human resources movement was too vague in its nature, and that it could have been better described with “performance and attitudes” (1954: 279-280) or “managing the human organization” (1954: 280) since the success of organization was on higher priority than the individual happiness.

To see broader, Drucker (1954: 306) argued: “The first test of management’s competence is its ability to keep people working with the minimum of disruption and the maximum of effectiveness.” This is of vital importance since managers can consider the affordances (in “techno-socio structures”), and any undeliberate reconfiguration hinders the employee to achieve “peak performance” (Drucker 1954).

Furthermore, resources and capabilities generate a competitive advantage for a firm which relates to taking advantage on industry-specific competition. As such, competencies and capabilities are often described to stand for the same idea: to provide a competitive edge (“value-creation strategy”) through processes and intrafirm resource deployment. The difference between core capability and dynamic capability is that the latter renders a new resource allocation or creates rather new resources and capabilities (FitzRoy, Hulbert, & Ghobadian, 2012).

Without definitions it would be difficult to argue academically on the importance of resources. As we see, the definitions associated with resources and capabilities are connected to competitive advantage and value-creation mechanisms of a firm.

However, because organizational resources can effortlessly be justified through affordances, and the “human organization” (Drucker, 1954), the firm capabilities of a firm are managed through processes. Furthermore, processes are always a part of either formation or implementation (Mintzbergian emerging strategy view), that regards the managerial ability in materialization. More precisely, the abilities of managers have been linked to the growth of the firm (Penrose, 1963).

To avoid being overwhelmed on definitions that presume achieving competitive advantage simply by referring to semantics, the resources and capabilities contribute to the underlying issues of why the formation or retaining a capability can be an issue. Often, the management decision making is connected to creating “a superior return on capital” (Amit, Raphael; Schoemaker, 1993), and, it happens in those settings where the role of social practices can be ambiguous. Decision making ,at this level, can be linked (contextual) uncertainty (1), complexity (2) and intraorganizational conflicts (3) (Amit, Raphael, & Schoemaker, 1993: 33). And as Whittington (2006) furthermore pointed out, the *practical competence* of strategists and their knowledge on organizational routines and building on distinctive managerial roles are the key skills responding to the effectiveness and readiness of strategists. What strategy-as-practice is all about relates precisely to the *effectiveness of strategists* (Whittington, 2006: 731).

2.3. Synthesis: Strategic investments to affordances, insights and practices

To begin the synthesis, the intention of this paper was to scrutinize how information organizations see the role of materials and use materials as tools in their strategy work in everyday activities. In the introduction, I stated the goal to add content on how artefacts and materials assist featuring the strategic value in social practices. For instance, a large body of research (Leonardi, 2012; Dameron et al. 2015; Vaara & Whittington, 2012; and so forth) describe these essential materials to be activity related and exist with clear distinctions. At times, technologies have a transformational effect on socio-materiality (See Orlikowski, 2007). Lately, the big data technologies are evidentially elevating the firm positions on some markets (Pigni et al., 2016).

In the preceding literature research, I have given a substantial attention to socio-techno and socio-materiality relationships besides the strategy as practice. In fact, despite of the broad contribution in the research, it appears that organizing the matters (See Dameron et al. 2015) has lacked the urgency for certain instrumental conceptualization of how technology can be harnessed for better use of desired practices and processes within an organization, which positively enhance strategically important activities. Looking at different papers (Whittington, 2007; Orlikowski 2007; Trist & Bamforth, 1951, mentioned in Eriksson-Zetterquist, 2011) vis-à-vis socio-materiality, we see how the approaches to materiality in social practices include many concerns and expectations to pay attention for social consequences of strategic choices. In these emphasizes, Whittington (2007) manages to argue for the irony of the sociological eye that expands the conventional understanding of the

term strategy and materials in it.

The development of technology, and its significance to both strategies and being careful with affordances of social contexts leads to mostly positive outcomes (Person-to-organization: O'Reilly et al., 1991), and, vice versa, a research finds some support, that the inefficient social practices have the tendency of causing negative outcomes (Trist & Bamforth, 1951; cited in Eriksson-Zetterquist et al., 2011).

The sensation after the literature review is that often pieces of writings in the strategy as practice line has only little empathy for the great difference between textual agencies such as technology or excel sheet: the nearness or distance from strategic activities or the routine or their difficulty in achieving the transformational effect in correspondence to the opportunities found from these "items" and the internal resources. Whereas an excel is helpful as widely available inexpensive programme, a system can be developed as an entity to run and support, for instance, a customer relationship management (CRM) which can guide and create internal ecosystems, that support the core competences. In other words, the role of cognitively responding human in correspondence with techno-structures is often ignored in the strategy-as-practice literature.

Evidently, material decisions enable or disable corporate actors. Seen in Figure 4, materials in strategy create value through affordances across the organization. Since the affordances refer to Gibson's notion (1979), it can be wise use synonyms such as practicalities or deployment of efficient tools depending the context. The synthesis argues for the transparency of information towards the strategic apex and, thus,

shows affordances as a strategic factor in value creation.

The objective of this paper is to attempt to find priorities from the complex set of materials in organizations. On one part, the task itself is paradoxical because as actions and mechanisms are the central part of a strategy, and the path-dependency is valid in daily activities. Meanwhile for instance technologies and textual agency contains affordances, they do not yet communicate what the management ought to do, but rather reflects to the attitudes, habits, practices and processes. As consequence, this represents an opportunity for a researcher. The use of affordances across the organization can be defended by acknowledging, both by carefulness for social consequences (Vaara & Whittington, 2012; Whittington, 2007), and by how humans form the company (Drucker, 1954). For these purposes, materiality in this paper recruits two highly relevant thinking devices. Firstly, the affordances (Gibson, 1979), and secondly, highly worthwhile to mention, the Heideggerian availableness of shared representations with relevant and well-reasoned arguments (Chia & Holt, 2006). Both are omnipresent in every level of organization.

Consequently, the foci of attention of the subsequent empirical research will concentrate into the earlier pairing of social and technological relations to investigate it in contextual social practices. In addition, the focus builds on a social availableness of the materiality insights, and the phenomenon of information organization from the standpoint of organizing materials for the good of a firm. Hence, decision-making is emphasized since companies operate in dynamic environments and strategy, a part of strategy-as-practice social alignment, itself relates to decision-making in significant matters (1978; "Patterns in strategy formation").

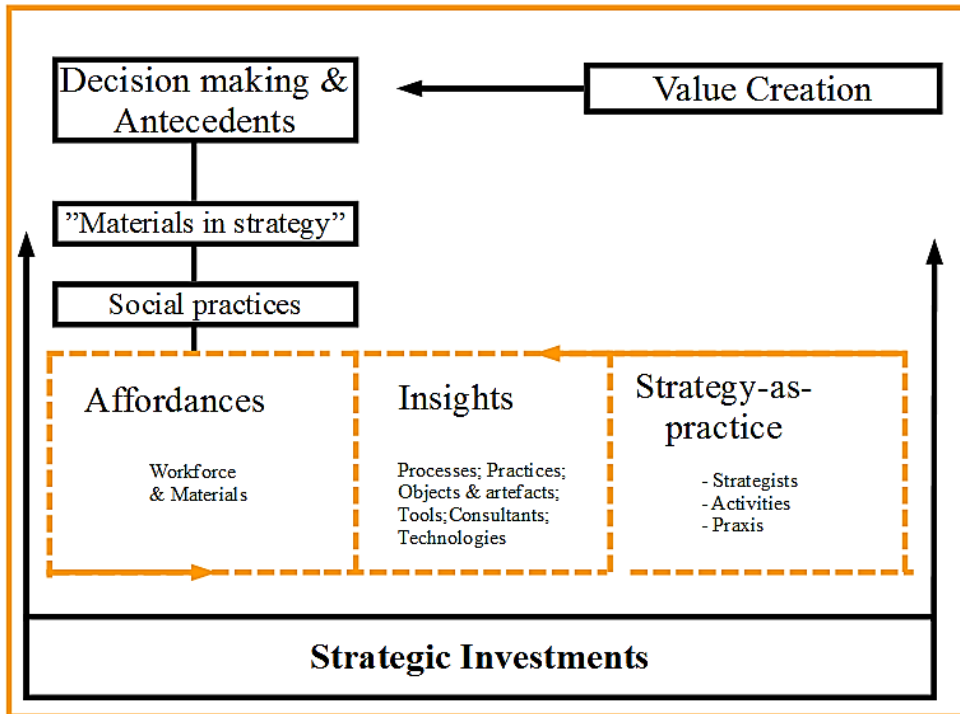


Figure 4. Synthesis for material application to assist decision-making.

The preliminary synthesis (above in **Figure 4.**) demonstrates the potential material actions both in strategic investments and their situational mechanisms (Affordances, insights and Strategy-as-practice) in an organization. In this model, the actions reflect to strategies as patterns and the affordances of textual agencies on all levels of organization, that afford the alternative and demand-driven adaptation to changing environments. Therefore, the shown process and mechanism instil a constant requirement to keep up with the demands of emerging strategy. The value creation may occur through multitude of affordances and mostly actions in praxis (for actions and textual agency see Whittington & Vaara, 2012: 31; Whittington, 1996) which guides organizing materials for the strategic innovation.

Managing successfully the internal and external resources, in comparison to environment and industry changes, is characterized by the strategic considerations in dynamic capability. Recreation and selection of resources are meaningful because change is prevalent in business. According to Teece et al. (1997) the resource assets refer to competitive choices e.g. in skills of engineers that are difficult to replicate as such. Dynamic capability supports the idea that materials in firm follow the broader technological development streams and that internal skills to recognise and harness technological advancements assist firms to prosper within industries they operate. The notion of dynamic capabilities, the whole organization of tangible and intangible resources and their intertwined path-dependences, communicates the learning as one of the key assets in organizational utilization in order to create wealth and keep the competitive positions. (Teece et al., 1997; Teece, 2007).

The idea of dynamic capability and learning organizations are nowadays widely deployed. The accelerating speed of technological development has presented the cognitive limitations and the need for new type of specialists such as programmers. For instance, cognitive overload of directors hampers technological transitions and shifts toward greater big data capabilities when these skillsets have not been inherited (Merendino et al., 2018), which must be overcome by reach-out for external resources full of new ideas and competences.

Sometimes technological deployment of insights can be produced by the core systems and platforms. Hence, making the use of insights from multiple sources are supported by the strategy of Mintzberg and Waters (1985) that advocates for

stronger control on outcomes when insights are incorporated into planning. Furthermore, Mintzberg and Waters (1985) viewpoints (on strategies as patterned streams of actions) should be reflected to the ideas of Whittington et al.'s (2011) welcoming of external strategy resources for organizational learning in uncertainty situations: the uncertainties enforce the welcoming of external strategic experts and consultants into organizations' praxis.

3. METHODOLOGY

For the methodology, a qualitative inquiry has been chosen. This selection is strongly supported in management research since organizational activities are also social science and occur in the interaction between different actors within the firm (Gephart, 2004; Schatzki, 2005, cited in Whittington, 2007).

3.1. Research strategy

Based on Gephart's (2004: 458) statement: "The operation of concepts in data needs to be revealed in clear and explicit ways if the findings are to be comprehensible and credible.", the paper attempted a rigorous procedure to show linkages in the initial problem framework. The figures, tables and causal linkages are visualized despite that in exploratory studies theorizing is not always needed (Yin, 1994). In practice, the validity issue raised at the stage of the question establishment: how to constrain the answers in such that they would contain as much as possible the affordance angle without persuading the collected data too much.

The usefulness of a good theory in practice, that both Lewin (1951, cited in Van de Ven 1989) and confirmed by Van de Ven (1989), assisted in making clearer interview questions. The opportunity in strategy-as-practice stream can be found in practitioners' craft, that is as much local as general and tacit skill (Whittington, 1996), and in a clear interest for socially discerned views of practitioners (Vaara &

Whittington, 2012). As a result, a substantial amount of time had to be designated to the specification of interview questions to assure that necessary themes would be covered in data collection.

In general, often respective studies relate to the descriptive and the core competence focused research in strategy-as-practice. Critically put, the main issue of practice-materials related studies is their tendency to show less concrete causal-lineage to practitioners' decision-making and concrete business metrics. So far, the novelty of the materiality topic has leveraged itself largely through the descriptive inputs (Dameron et al., 2015).

3.2.Philosophical assumptions

To start with assumptions, Geoff Easton (2010) argues that in decision-making managers rely on intuition, to choices and actions that have brought them results earlier. For case study research, Easton advocates the use of philosophical assumptions from Sayer (1992 and 2000), because the critical realism allows the greater interpretation for events, that are beyond what the theoretical knowledge achieved in conceptualization and what can be empirically measured: basically organizations are entities different from alternative realities of others.

More specifically in strategy, practice focuses on "the work and talk of practitioners themselves" (Bordieu, 1990: cited in Whittington 1996). The logical framework of the approach therefore connects the work of practitioners into praxis where strategy is being put into action by managers (Whittington, 1996). A tremendous amount of

information can flow into praxis through the participation to daily activities where parts of specific data can be processed by employees and systems. Following the trail of Easton's (2010) argumentation, the interpreted knowledge and reliance to past good-proven methods provide insights to meetings. Nonetheless, regarding to the destiny of one company, it is still unclear what changes the destiny of the company.

This thesis finds the opportunity in enablers, that are diffused thorough the organization by the decision-making culture of a company. We may assume there is no two companies alike; even decisions exist with relevance to both practice and larger strategy. Henry Mintzberg (Mintzberg, 1987) pinpointed the essence of strategy as a plan, and signified the meaning by stating: "A kid has a "strategy" to get over a fence, a corporation has one to capture a market." Meanwhile, the practice itself is the paper's foci of interest, the practitioner's landscape is engraved by the policies, processes and planning (See Whittington, 1996), which all together form the routines and influence the practices.

Because practice is keen to find out how doings and sayings separate, e.g. the polarity (Eisenhardt & Graebner, 2007), experience and communication between management and operational core, poorly activated practise can produce negative impacts to affordances through the mediums (See Chapter 2.1.2). Thus, the reality of complex business level layers (e.g. policies, regulations, governing tasks) challenges the priority urgencies by pointing the separate tasks of strategic apex, specialists and operational core.

3.3. Research Method

The empirical part concentrates to explore the organizational *doings and sayings* (Whittington, 1997) in a case company. When Sutton and Staw (1995) argued strongly for critical position on writing a good theory in social sciences, they noticed how researchers often have difficulties on modelling a concept in behavioral sciences. Consequently, in this paper, an analytic process has been adapted with a focused emphasis on a movement between the research streams, research questions and between the illustrative figures. A theoretical base is pursued through a selective but precise reliance to central academic sources. A validity, supposedly questioned in the papers with more abstract approaches, required a systematic mirroring between research questions, synthesis and data collection techniques. The reflection between separate parts facilitated the direction through the research.

3.4. Sampling and Case Selection Process

The cases were selected without a direct link to voluntarily participating companies. The interviewed organizations were selected based on my network or by random entrances as research was based on phone inquiries. Regarding the sampling technique, the most important discovery was to deploy two separate clusters that were the distinct representatives of different schools of thoughts. As Eisenhardt and Graebner (Eisenhardt & Graebner, 2007) put it, “the polar types” provide an efficient method to discover patterns from data which otherwise would be similar.

3.5.Data Collection and Analysis

The collected data was required to research how insights and decision-making are being placed to enhance or restrict the interface between humans and technologies. The analysis of the grouping is found from the Figure below. The framework study seeks the controversies at the current state of practices and materials.

Pointing to the sheer exploratory approach, the objective of the analysis and implications is integrated towards future studies. The suggestions and hypotheses are presented for future proceedings without the need to arrive into closure of a topic (Yin, 1994).

The research data was gathered so that simple ethnographic information and materials can be studied in the reference framework. In Figure 4 I have demonstrated the initial synthesis needed to understand the antecedents and outcomes of socio-technological affordances in an organizational context. I chose to use decision-making and insights terms in the interview questionnaire to find out more about how strategists strategize with materials in practice. The rationale to base the interview questions on these two are set into the fact that practice can propel overall strategy ahead through decision-making. Because insights show the quality of technological potential, it is a significant marker of the quality of affordances in use. In Figure 5, I have presented how I expected to investigate the affordances and research problem in the case company interview.

The presupposed collection of data was expected to produce two kinds of information. Firstly, the data was supposed to contain a broad set of material information for the sense-making. Secondly, the implications of the gathered data were expected connecting to the strategy and how the strategy takes place in praxis (See questions 1, 2, 3 and 10; See **Appendix 1**).

Informant no	Dd/mm/year	Gender	Informant position and location	Prefilled form	Interview length mins
CLUSTER 1: Design company practitioners					
A1	28/08/2019	M	Managing Director, (Industrial designer) England	Yes	33:17
A2	16/09/2019	M	Development Manager, (Engineering designer) England	No	20:33
A3	19/09/2019	M	Managing Director, (Industrial designer) England	No	25:11 (~40:00)
CLUSTER 2: Operative middle-management practitioners					
B1	04/09/2019	M	Problem Manager Estonia	Yes	24:47
B2	05/09/2019	F	Server Data Manager Estonia	Yes	24:14
B3	05/09/2019	M	IT -Infrastructure Manager Estonia	No	40:24
B4	06/09/2019	F	Service Team Manager Estonia	Yes	31:23

Table 4. Details of interview participants.

The interview details are seen above in Table 4. The designers cluster is a set of professional directors and managers from three different industrial design and design consultancy companies in England. The cluster two includes the four middle-management informants from an international organization who are engaged in IT related projects in their client companies.

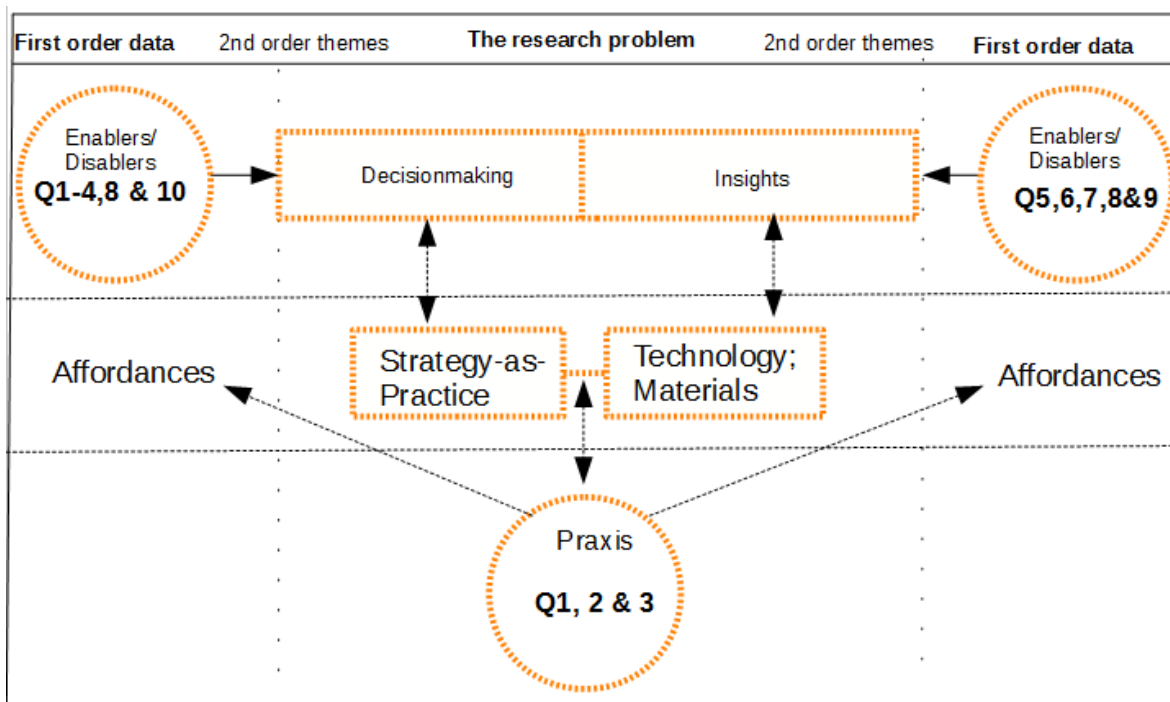


Figure 5. Finding the trace from sayings to categories “Practice” and “Materials”.

The above figure illustrates how the research validity was argued. The categories (building on the classification of Dameron et al., 2015) were expected to be intertwined to informants’ narratives. The figure shows the potentials to deploy the

material affordances in relation to decision-making and insights retrieved from the technologies.

3.6.Validity and reliability

Collecting the relevant data on affordances (See the Figure 5 above) was a significant challenge. The informants were given an opportunity to fill-in the electronic format prior to the interview. The additional questions and missing areas were covered in the actual interview. The visual mapping and tracing between thematic interests were expected to influence the validity of the research paper. I chose to represent the linkages between research themes although proving the internal validity was not a necessary stage in exploratory case studies as mentioned earlier (Yin, 1994). Regarding the conversions of the interviews to text, if data transcript showed a need for specification or clarification, the informants were later asked to provide further information.

4. FINDINGS

The findings in the empirical part reflects to the objective to understand the landscape (See Table 3; See Figure 4) where strategy practice occurs and what material considerations these practitioners have in their strategy work within the framework (See Figure 2). The praxis holding the actors, strategy agenda and its execution is studied through the strategy meetings.

4.1. Within-Case Description and Analysis

The clusters provided descriptions regarding to affordances as they are in the current situation in the participant organizations. The answers showed many similarities but also showed some unexpected insights on how companies have organized their materials in two different industries.

4.1.1. Cluster 1: Designers

A Cluster A consists of highly specialized design manufacture and consultancy companies. A degree graduated and well-experienced informants operated with ultramodern technological capabilities in prototyping, CAD designing, and production. These organizations are the experts within industries such as 3D printing, aerospace, industrial engineering, and product design. The management interviewees routinely participated in planning workshops, consulting and project-based work. The organizational websites provided the presentations on what their

capabilities are, and regularly offered public information on the design and analytics tools, that they used in-house.

Related theme	Sayings of practitioners	Enabler/ Disabler	Description
Social Practices	<p>Q 2: "If I am involved in a project feedback/progress meeting, the key values are understanding of the client's viewpoint on every aspect and finding more opportunities to work together. We cannot decide on their behalf. They know their customers and resources better than I ever will." A1 (D)</p>	<p>Enabler</p>	<p>Business opportunities Information sharing Design requirements Progress meetings</p>
	<p>Q 7: The key element in delivering good design work is communication. This must occur between designers, between the design company and its client and the design company and its suppliers. A1 (D)</p>	<p>Enabler</p>	<p>Information sharing Visual end- or work-in-progress Products</p>
	<p>Q 3: We follow the moods of our clients [displaying options and letting them to vote] to achieve insights and relatively often we try to use the ethnography of our client. A3 (D)</p>	<p>Enabler</p>	<p>Emotions Cognitive response in meetings</p>
Materials in strategy/ Technologies	<p>Q 2: "If I am in a strategic sales meeting the key values are to effectively document issues that we can solve as a company." A1 (D) "For sales meetings much of the content is already prepared and is standardized documents because until you meet a customer you do not know what you are going to discuss."</p>	<p>Enabler</p>	<p>Effective documentation Strategic sales meetings Investment decisions Availability of documents</p>
	<p>Q 4 "I would use both laptop and paper for notes. It all depends on the individual, but they all get formalized and included into main project administration folder." A2 (DM)</p>	<p>Enabler</p>	<p>Shared meanings Storing the information</p>
	<p>Q 9: "Full color 3D print technology is an excellent tool to communicate design practices." A1 (D)</p>	<p>Enabler</p>	<p>Technological features In-house modern technology; augmented reality; 3D print technology;</p>

	<p>“Finally, the use of QR code based augmented reality is a powerful tool to communicate design development.” A1 (D)</p> <p>“We are still investigating. It is on our radar to bring in in-house. We can offer it to our client but we don’t have it right now.” A2 (DM)</p> <p>To do engineering kind of stuff you need to use parametric CAD. It is clunky and hard to run. What it tends to do is it shuts-down creativity not enabling it. A3 (D)</p>	Disabler	Technological features Parametric dimensions
	<p>Q 8 “We are trying to bring in some software that makes project management sleeker and smoother.” A2 (DM)</p> <p>“We have a contact manager system which allows us to record and track all of the sales activities and from that feedback it filters out daily actions on individuals.” A2 (DM)</p>	Disabler	Technological features PM software (inadequate)
	<p>Q 6 Finding suitable qualified and experienced industrial engineers. Our general area of business is quite specialized. A2 (DM)</p>	Disabler	Lack of competent employees
	<p>Q 7: “The thing that helps us the most is a customer giving us a clear concise requirement where they have thought about exactly what they want.” A2 (DM)</p>	Enabler	Customer’s requirement Efficiency (time) Temporal
	<p>Q 3 “To carry out the meeting we generally do over the internet meetings with something like Webex. But within that we will show presentations. Lots of Microsoft documents Word, Excel sheets, presentations, project plans. We will also show CAD images and perhaps live CAD models.” A2 (DM)</p> <p>Q? “This can include things like visual cues for delivery milestones and placement of white boards and display boards throughout the working environment.” A1 (D)</p> <p>Q 4 “I would use both laptop and paper for notes. It all depends on the individual, but they all get formalized and included into main project administration folder.” A2 (DM)</p>	Descriptive Descriptive Descriptive	Sociomateriality Virtual and physical Presentations Visual cues

	Q 7: Any means to create effective communication is vital to use for a design company. These often include visual presentations, 3D CAD, 3D virtualizations and physical prototype samples. A1 (D)	Descriptive	
Codes in brackets	Position		
D	Managing Director	A1,A2, A3	Cluster 1
DM	Development Manager		Interviewees (1,2, & 3)

Table 5. Data results and their connection to affordances in the Cluster 1.

Concerning the analysis of the doings of designers, it became evident that their practical orientation reflects their backgrounds and mental approach to problem-solving. The proceedings relate to project-based work where physical evidence of a product is often visualized with CAD images, augmented reality or prototypes. These are linked to the main artefacts and objects that relate to their business in industrial design.

The problem-solving approach and mentalities reflected designers' identity which requires a combination of a variety of methods and tools to manufacture the end-product. Hence, the practice itself is based on creative work where the painstaking routine work is required to be done in the interface of computer-aided design software.

Meetings included often the customers and clients wherein practitioners were expected to document the requirements received from the stakeholder. The

designers had their genuine interest in delivering the ordered product, that would solve the cost and design demands often in a way that the product would potentially generate a competitive advantage to a customer or client. Since the parametric design software is sold by software vendors, the designers are limited to use them and their imagination within the projects is required to align their own and customers' vision.

Briefly, relevant to social practices, the designers ought to find out what are the project-specific requirements and they rely on strong communication with visual aids to steer the projects and yearly execution of their strategic goals.

The directors' communicated with the visual aids in the meetings by sharing information as PDFs, prototypes, and QR technology, which enabled both the effectual and waste-reducing use of augmented reality. They noticed disabling aspects of materiality mainly in the documentation, lack of CRM or in-built cumbersomeness of the mandatory technology (e.g. parameter-based CAD; informant A3 D).

4.1.2. Cluster 2: Middle-Management

A Cluster B consists of a foreign multinational large-sized organization. The informants held positions in middle management and constantly participated to digital praxis meetings. Contrasting the design approach, this group worked in the operative functions of the large organization and were in the medium of the upper echelon and operational core. The table 6 displays the most significant results related

to social practices and the perceived affordances in the Cluster B.

Related theme	Sayings of practitioners	Enabler/ Disabler	Description
Social Practices	<p>Q 5 “We have had online meetings. In every meeting the prerequisite is a laptop. If I do not have a tool (a laptop) to get access and have a link for participation, I can’t participate it. In meetings, we often receive action points what to do.” B1 PM</p>	Disabler	Online meetings
	<p>Q 6 “Occasionally some persons are driving a car, and there is no visibility to presentation material for them. This prevents to see and search extra material during the conference meetings. Presentation therefore is limited to voice.” B1 PM</p>	Enabler/ Disabler	Locations Remote work Spatial
	<p>Q 3 “In maximum we have 20-25 000 people on EMEA levels, but in worldwide levels there are 200 000 participants. Skype has its limits. Data can be collected from IT and systems like “Service now”. The ticketing system is the main source of data: the orders, changes, tasks and so on.” B3 IM</p>	Enabler	Online meetings Shared insights and technological opportunities
	<p>Q 4 “95% of meetings are digital in Skype.” B3 IM</p>	Descriptive	Digital meetings
	<p>Q 4 “I get one part of information from specialists by asking what they have done and one part of the data is searched from the databases.” B2 SDM</p>	Enabler	Information sharing Verbal inquiries
	<p>Q 2 “We use Lean and Agile practices. We also commit to active monitoring between the business goals and the actualization of those goals.” B4 STM</p>	Enabler	Methods and monitoring
	<p>Q 9 “I would like that our company invests to ergonomics, people have commented on back issues.” B4 STM</p>	Disabler/ Enabler	Ergonomics
	<p>Q 5 “We have used PowerPoint. Or lot of presentations can be done through sharing a screen in Skype.” B2 SDM</p>	Enabler	Technological features Shared screens

Materials in strategy/ Technologies	<p>Q 8 “We have developed some pretty good automated processes. But we can do more. We have improved the internal processes and the communication.” Q 9 “In my point of view RPA technologies should be implemented. This is basically a robot process automation (RPA).” B3 IM</p>	Enabler	Technological features Automation of processes and work
	<p>Q 6 “If we contemplate the challenges in regular meetings, we have network issues and, at home, I have issues with practicalities such as sharing the display. Occasionally some persons are driving a car, and there is no visibility to presentation material for them.” B1 PM</p> <p>Q 8 “The location and working environment are essential...At home many tasks can’t be done, since the work requires many simultaneous windows. The assignments are precise and profound.” B1 PM</p>	Disabler	Virtual Presentations: Network issues
	<p>Q 3 “I use regularly Excel, PowerPoint, Skype for Business, Zoom and MS Teams.” Q5 “If I make notes then I have OneNote document where I copy the necessary information. The important information will be sent through email” B3 IM</p> <p>Q 5 R: As a participator?: “I use OneNotes.” B2 SDM</p> <p>Q 3 “Of course, we use emails. Good old outlook. We also do an internal documentation for emails.</p> <p>Q 4 “My calendar is a full of meetings. With Projects it is a very similar situation.”B2 SDM</p>	<p>Descriptive</p> <p>Descriptive</p> <p>Descriptive</p> <p>Descriptive</p>	<p>Sociomateriality Technologies in the organization</p> <p>Making notes in meetings Digitally shared memos</p> <p>Organizing processed information</p> <p>Organizing meetings in Calendars</p>
Codes in brackets	Position		
PM	Problem Manager		
SDM	Server Data Manager		
IM	IT Infrastructure Manager		
STM	Service Team Manager	B1,B2,B3,B4	Cluster 2 (Company)
R	Interviewer		Interviewees 1,2,3, & 4

Table 6. Data results and their connection to affordances in the Cluster 2.

4.2. Cross-Case Analysis

The objective of the research paper was to investigate the affordances in dynamic practices. The cross-case analysis is executed in order to analyze the activities and motives of practitioners themselves in the field. The polarity between cluster one and two, was expected to show the role of affordances in materiality in different social practice clusters.

4.2.1. Dataset 1

The data shows the evidence for abundant methods of transferring the information into design products. Designers use suitable methods to digitalize ideas with versatile materials. The meetings with the client include the use of meeting room equipment (e.g. whiteboards, post-it notes, digitization of surroundings and a variety of strategic visualization tools) to arrive into consensus of the project objectives. Often the client specific requirements are unique and project specific. Therefore, the strategizing with materials patterns varied which required a dynamic reflection from the designer agencies.

A distinctive craftsmanship describes these settings where industrial designers practice versatile methods. Materials share the need for mediating information between the project participants but also become more visible in the conversion of intangible assets to tangible when projects shift forward. For instance, the industrial design strategists still use sketches, post-it notes or paper notes in addition to digital

images, prototypes and 3D-prints when they solve design requests and find solutions for their clients. The material dimensions are necessary to provide insights and the insights and end-products connect social practices in the industry. Conversely, the social practices relate to decision-making and value-creating business activities.

A specialty in industrial design materials in strategy is the design technology. The use of the industrial design tools (e.g. CAD; computer aided design program) requires specific insights and industry specific expertise (e.g. engineering knowledge, education and experience). It is parameter based which indicates the pre-agreed dimensions for the end-product.

4.2.2. Dataset 2

The practices of large multinational organization rely on large-scale international virtual meetings. The distinction to cluster 1 was noteworthy. An internal line of communication is typically achieved through email and online telecommunication that require a network and laptop. These technologies depict the most common practice methods to coordinate the in-house social practices. The locations influenced the level of participation and showed an evidence for the flexible remote work practices.

Regarding telecommunication, they used two separate programs depending on the size of the audience and the level of importance. Remote meetings were occasionally troublesome due to lack of additional screens, access to relevant databases/emails or

limitation to auditive participation. The remote work was reported to be problematic because participants are expected to have access to the databases if they are expected to take an immediate action. Nonetheless, the virtual meetings were a great enabler in the sense they reduce costs related to experts' and managers' locations in a global company.

Managers coordinated most of their meeting participation through calls, virtual conferences, and email monitoring and replying. Based on this research, data itself as a piece of residual information in databases (e.g. ticketing systems), emails and memos played a significant role to all informants and to the whole social practice in the organization.

What came to disabling factors, cut-offs in a connection or in a mobile operator premises decreased the quality of the participation. The practitioners often collect data a few hours before the scheduled meeting but were also enabled by their know-how and specialization.

Discussions on the virtual meetings discovered how the screen sharing (a specific feature) was an enabler that surpassed occasionally the more obvious PowerPoint use. The service team manager [Interviewee B4: STM] had noticed the ergonomics to be an ongoing but persistent issue among employees.

Most often they reported difficulties in the absence of the Internet or mobile connections if they worked outside of the office premises. The automation was expected to be increased due to many routine tasks that could be given for the

robots. The transition towards automation and the inclusion of the robotics was perceived as an expensive and resource requiring [Interviewee B3: IT IM].

4.3.Synthesis

The technology and data were not the only places to hold affordances. The interview narratives revealed affordances in the state of constraints in ergonomics, in hardware performances and in distributions of electronics and other items (B1 PM: the additional screens at home office; B4 STM: the ergonomics).

Social practices indicate that an individual in a business context must align himself to collective reality (Vaara & Whittington, 2012). In the Cluster 1, the findings indicated how business managers need the approval of investors and must always seek for the project acceptance from the client. An important temporal enabler was recognized in a concise specification of a project requirement at early stage that enabled the project to move according to timetable.

Often the disablers were well-recognized and industry-cluster specific. In designers' premises, the emphasis was often given to visualizing the roadmap and using a wide scale of materials to liberate the creativity that was a signature feature and directly linked to a competitive advantage within the industry. Designers also used visualizations and virtual prototypes to communicate the mutual understanding with their clients. Visualizing the strategic milestones has been researched in strategy-as-practice earlier. For instance, Garreau et. al. (2015) have argued for

possibility to miss key aspects from established and on-going strategy creation if strategy sense-making artefacts (e.g. maps, drawings, sketches) has not been visually represented.

The cut-off service breaks were the regularly seen constraints in the Cluster 2. The related disablers, the network issues or the lagging, was connected to their operator or to the number of recipients or audience in the big events. Whereas these companies do organize their strategic activities around the customers and the sales, these meetings are nearly always online meetings. All practitioners operated in the project management environments that scheduled and coordinated their work activities.

Moreover, the classification of materiality notions and the humans in the strategy materials appears often to be intellectually misleading or at least contradicting. I argue that the inclusion of humans as a strategy material in only a partial. Humans use data, information, and technologies in their daily work. Strategists are active decision-makers and technologies related subjects are controlled by company administrations. However, the finding supports the Dameron et al.'s (2015) material considerations from the intellectual premise that human bodies are physical, they decay, and they require adequate work conditions. It is also important to notice how programs and functions may support the cognitive work at any point of the organization.

To conclude, the materiality affordances of the large organization showed the materiality properties from the new perspective. The affordances represented stronger functional qualities that enabled the actors to perform better.

5. DISCUSSION

The findings of this paper confirm the application of familiar office tools for text editing, calculations and data storing at the praxis meetings of the strategic apex, the operational and the middle management. The vendors and service providers distribute tools and sell licenses that are wide-spread, well-available, and used in harmony to capabilities. Nonetheless, as the empirical part shows, both social and material practices are often process facilitated, event-specific and driven by predetermined social practice expectations natural to the industries they occur. The evidence found from the sayings of the practitioners, thus, communicate how the strategy work is consisted of the constant sense-making.

The empirical findings of the research show affordances embossed with the positive and negative consequences for strategy as practice in everyday work. The portrayed landscape is relevant to strategists and practitioners themselves. Although, for instance, the affordance bundles (Demir, 2015) explain the mechanism of how a single strategic activity can gain synergies irrelevant to the time and location (tempo-spatial) the practitioners locate at, this paper shows how such affordance can thus contain weaknesses (Dataset 2, constraints: connection issues or inadequate levels of presence) from the point of view of a single participant.

The current paper has introduced a practical agenda to enhance material practices perceived in technology-related affordances. Data collection and analysis exposed the categorial routinizing and execution of the work as a continuum to organizational strategy. In the designer's narratives, the material strategizing

showed extended importance in the utilization of strategic material types versatile distinctions (visual sense-making via strategic artifacts and objects). Their daily decisions were directly linked to expectations of measurable business outcomes and often with a drive to provide a competitive advantage to their clients through the designed end-products. With this emphasis, they discussed on solving design problems and were long-sighted in their strategic thinking: their preferred practical strategy tools included roadmaps, business model canvas, web-traffic reports and representations of business objectives (e.g. in excels, websites and posters). In the Cluster 2, middle management focused mainly on presenting, communicating and troubleshooting in an ad-hoc basis. Data showed how the organization relies on telecommunication meetings on a large scale across the operations. On the practice level, there was an underlined importance of customer-focused action parallel to corporate level result expectations.

5.1.Theoretical implications

The informant narratives implicitly revealed the affordances in the light of social practice urgencies: these were directly linked to their personal business and expert crafts. To exemplify, the work of a designer starts from the specification of a task. When the requirements for the project are gathered, the strategist can move to the prototype creation. Concerned of a budget and the business sustainability, the yearly strategic meetings present different demands for the number crunching and strategist's experience allows them to establish a schedule for the diversification of tasks related to annual pinnacles that itself is related to routine work that comes in many forms.

The study has investigated the use of materials in the materialization of strategy; it has attempted to reinforce the strategic management theory. The descriptive base of used materials (whiteboard, photographs, maps, spreadsheets, etc.) in theory is already strong although the materiality in them is often researched on specific contexts and specific industries (Vaara & Whittington, 2012; Jarzabkowski, Paul Spee, & Smets, 2013). With a less concrete approach via affordances properties, the paper has managed to create a partial interpretation of contemporary material usage in design and IT industry practices. It has managed to provide a snapshot of contemporary and industry-specific activities related to high-performance meeting preparations and participation. In addition, it has employed an active term of affordances in a socio-techno constellation of organizations it researched. With case clusters, it has shown the examples and analysed the practice roots of materials in strategy with linkages to resource-based view and dynamic capabilities. In multinational organizations, contemporary practices are often rehearsed via telecommunication programs (See Demir 2015; 'bundled affordances'), which allows the large audience and a large set of practitioners to be reached in virtual meetings.

Against this light, the humans as actors are recognized possessing the craft and the capacity to excel in organizations. Beyond the scope of this paper, the paper must admit that a great part of tacit knowledge stays hidden because it is often connected to dynamic capabilities which include often undisclosed competitive advantages.

5.2. Managerial implications

The polar types revealed how the dichotomy between the design approach and traditional management is constructed. Both clusters verbalized the shortcomings of their technologies regarding the materiality of strategy. The material considerations related to affordances and implications are shown below in Figure 6. The figure represents the linkage to the themes and the objectives of this research paper (RQ1, RQ2, RQ3 & RQ4).

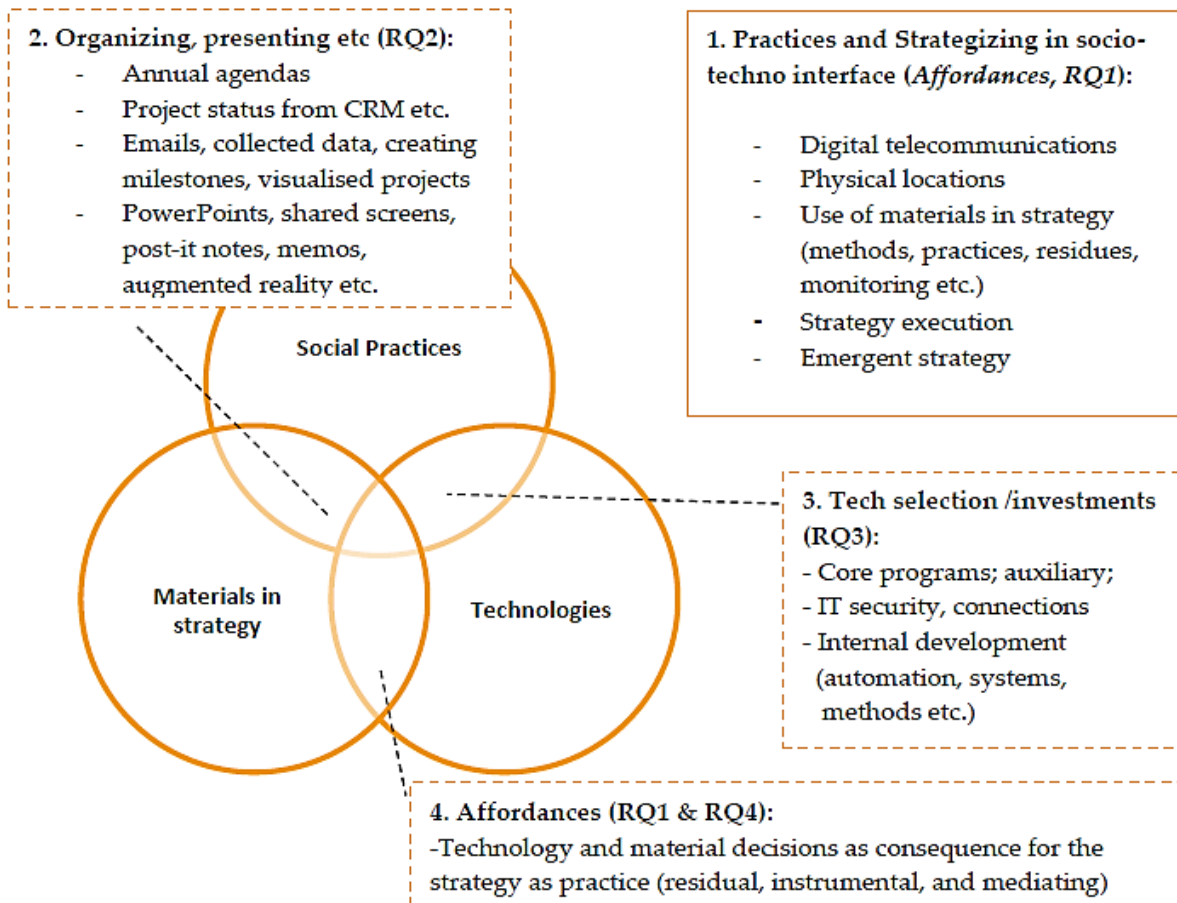


Figure 6. Materialization of strategy and practical implications.

There is a need for scheduled materiality meetings because a routine-based work of a strategist may blur and leave aside the material choices as less relevant to business. Chia and Holt (2006) have argued for the building and dwelling modes in strategizing which may support better this argumentation. Dwelling, a distant and more passive form of strategizing, literally provides the explanation how strategy can be in an emergent state at the organization and occur without deliberate plans (Chia & Holt, 2006). This parallel locus of emergent strategies requires little attention: technologies and the materialization in organizations are often cumbersome to change despite of the positive influence the change might generate. Dwelling explains the occurrence of repetitious events which influence the strategy through the mandatory coping of every day strategic activity.

Affordances in small companies connect to discrete themes when compared to the large corporation: there appears to be more creative flexibility in the strategy work content and in the sense-making. Meanwhile, it is significantly easier in smaller organization to take initiatives in making the turnaround regarding any problem, the large organization social practices wrestle more with real uncertainties and urgencies that force the direction towards the high-speed situation-based work of strategists. Because of this, positive changes may require rational and clear argumentation. This provides an explanation why some low priority issues are not necessarily handled although they are widely noticed and significant to everyone. The small design agencies are obliged to endure less visibility to key performance indicators as they appear not always have real-time inhouse accounting nor performance related data but rather records of the project progress.

The large corporations could use the findings of this paper and the prior relevant descriptive and functional comprehensions of affordances to embed the material initiatives and align them with human resources requirements. Companies shall try to understand what is useful in increasing enabling factors in their efficiencies. The increase of efficiency, owing to affordance thinking, should not be at the cost of the employee since an enabler could turn into a disabler. However, the managers and the executives must possess a visionary and positive mindset to understand the real and cost-related opportunities and threats in documented affordances.

To conclude, the recommendation is to realistically analyze the sociomaterial selections through the affordances (See Figure 6.) approach and their resultant impact across the organization; There is a possibility that recognized low urgencies might cause a high impact on the long run. Affordances may stay in disabling mode although they can sometimes be easily switched to enablers: they are often destined to the dwelling mode.

5.3.Suggestions for future research

The suggestions drawn from this research are various. The research scope did not reveal the agility in changing the technological environment for the resource and capability of the employees. These were on a high level of function at both clusters.

This research should be regarded as an early contribution within the topic and it expects more studies in order to reveal the tacit motives behind the practice status quos. The affordances found in this research can be studied forward by gathering

more data on the meaning and the attitudes on affordances in different hierarchy levels at companies.

One suggestion would be to trace down how companies make the best out of dynamic capabilities of development departments to modify their internal systems with all necessary repertoire they decide to be the top priority to achieve competitive advantage. Hence, the future research ought to be focused on agency issues that sometimes may cause misalignment at the cross-section of management and operational core.

The perceived scope limitation to internal technologies and practitioner focus shall be overcome by the increase of knowledge in how companies collect information from their stakeholders. Lately, the research committed to big data inclusion has encapsulated the requirements and deprivations to move towards harvesting the big data to understand better the customers and users.

Moreover, future research could include a wider perspective on the use of tools, i.e. focus groups in marketing (Clark, 1997) to study whether tools should be recognized as a part of *strategy itself* since a process approach (e.g. focus groups) can be fundamental to company success or failure.

5.4.Limitations

The main caveat in the research relates to looking into affordances separate from cognitive response (the interface between human and technology) to assignments. This implies future research. Another caveat relates to what prevents the companies to take the actions when constraints are kept in status quo over long time periods. As a consequent, limited to the strategy-as-practice scenery, the paper has omitted the organizational politics and discourse analysis (Balogun, Jacobs, Jarzabkowski, Mantere, & Vaara, 2014) and focused only to understand better the features and improved capacities in strategy work through affordance lenses.

Regarding the Table 3 and the multifaceted appearances in what contributes to strategy, the paper admits the narrow and yet rather descriptive review with the focus in contemporary affordances in strategy practice work. It is important to realize the vast complexity and the influence of the past process related decisions within the emergent strategies. The constant process of the formulation and implementation of initiatives diffuses as a course of action through strategists' interests, issue characteristics and in the interactive contact between internal social activity of decision-makers and external environmental context (Hutzschenreuter & Kleindienst, 2006).

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APPENDIX 1. The Interview Questions

Interview Questions

1. What sort of strategic meetings do you participate in?
2. What is the key value to you in these meetings?
3. What technologies do you use to produce insights for the meetings?
4. How and when do you prepare the content for the meetings in your own role?
5. What technologies and instruments you use in strategic meetings?

What technologies or instruments are mandatory there to cope with situations?

As a presenter?

As a participator?

6. What are the typical challenges in your business and technology ecosystem?
7. Which material dimensions (e.g. tech, applications, processes, organizing data, etc.) have the key benefits to your own productive work now?
8. And, in turn, how could you use the technology to better to support the daily activities?
9. Some novelties or investments in the past that have been very beneficial in your company practices?
10. How would you describe the strategy work?
What is it about in your company? What is it consisted of?