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**DRIVES OF ORGANIZATIONAL INNOVATION: ON THE  
EXAMPLE OF ESTONIAN COMPANIES**

Master's thesis

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Name and signature of supervisor.....

Allowed for defence on.....

I have written this master's thesis independently. All viewpoints of other authors, literary sources and data from elsewhere used for writing this paper have been referenced.

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## **Abstract**

The underestimated role of organizational innovation (OI) is that it drives technological innovation by complementing it. This study seeks to discover variables that drive organizational innovation (OI). Cross-case study was used to gather relevant information from five large Estonian organizations all from different sectors to uncover that it is managing knowledge and reorganizing that drive OI which diffuses technological innovation, while motivation behind it is in large part operational effectiveness as opposed to creating and feeding unique value proposition. The empirical findings are supported by OI theory, but it has been also found that there is lack of converting knowledge from a human to machine (codification), which is essential in knowledge management and in terms of organizational design there is greater emphasis on integration of the organization.

**Keywords:** innovation management, organizational innovation, organization, drives, managing knowledge, reorganizing

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# 1. Introduction

Constant change and technological advances highlight innovation as a source which ceases opportunities and manages threats to strengthen organization's competitive advantage. Organizational innovation (OI) is the system that produces innovation, thus its function is to complement other types of innovation. Organization's ability to innovate is a necessary precondition to utilize available resources and new technologies in order to create technological innovations, and thus rises the necessity for OI (Lam, 2005).

The limited research on this topic has consistently found that the existing phenomenon of the complementarity between organizational and technological innovations is underestimated (Battisti et al, 2015; Cassiman & Veugelers, 2006; Lam 2005). Failure to highlight the importance of OI in terms of its complementing role, might lead to the misunderstanding of the factors that drive technological innovation (Battisti et al, 2015), and if the innovation is not measured properly, it is not managed properly. OI helps to achieve full benefit of technological innovations and protect these from productivity losses as well as be a pre-condition for rapid diffusion of technological innovations, pointing out that it is necessary to understand the *conditions* under which economic actors make the decisions that generate the needed effect (Cassiman & Veugelers, 2006), and *context* in which complementarity takes place (Battisti et al, 2015), and that it is not clear *how* and under which *conditions* organization changes from one form to another and the *role* of technological innovation stimulating that change, and *why* (highlighting the differences in choices to address the needs of the environment) (Lam, 2005).

By building on the previous literature of the importance of the complementarity, this study seeks to discover mechanisms of this broad intangible phenomenon – the devices that transform inputs to outputs. These are the factors that together with technological innovation create the synergy. The drive can be considered as practices or as processes. The strength of this synergy depends on many aspects, such as level of utilization of the variables, the synchronization, the choice of specific practices as well as other internal or external factors that might affect the complementarity.

The goal of the paper is to identify drives that push the organization towards organizational innovation. Due to a complex nature of the entity that is an organization, this is an exploratory study seeking for empirically emerging themes in the theoretical context of organizational innovation through the application of cross-case study.

To get to the study's results, the theoretical background of list of drives of OI will provide a framework for collecting empirical data. Results will be provided by describing and analyzing emerging themes. Finally, a discussion will be provided by synthesizing theoretical and empirical findings and drawing meaningful conclusions and suggestions.

The research questions are: (1) What are the variables that drive organizations to do OI? (2) Why do organizations do OI, i.e. what motivates them to do OI?

The results revealed that it is managing knowledge and reorganizing, that drive OI and the manifestation of the complementarity, which diffuses technological innovation. By aggregating empirical data, it can be concluded that the motivation behind the practices of OI is mostly operational effectiveness and there is insufficient competing on unique value proposition, meaning that there is not enough orientation towards offering the market something unique, compared to the competitors, which is of real value to the market that is being served. The findings are consistent with classical OI theories, which are classified into the same areas of focus through which OI manifests – organizational design, organizational learning, and organizational adaptation (Lam, 2015).

The paper is organized such that chapter 2 will provide definitions of innovations as well as a theoretical background of the drives of OI, chapter 3 presents research method and data, chapter 4 uncovers results and analysis with a concept map illustrating empirically identified drives, and finally chapter 5 will engage in a discussion, as well as point to the implications for businesses, and then will reveal a final standing point. Additionally, in appendices, interview questionnaire is presented.

## **2. Theoretical background on drives of organizational innovation**

### **2.1 Definitions and role of organizational innovation**

Four types of innovations are generally considered: product, process, marketing and organizational innovation. Organizational innovation (OI) refers to the changes in the firm's organization. If the organization is viewed as a system that produces innovations, the focus lays then on its capabilities which are responsible for acquiring and using (new) resources and (new) technologies which are inputs for innovations (Lam, 2005). OI's role is then to bind and amplify innovation and capabilities are its assets. But usually the focus is on the technological innovations (product and process innovations), which is also reflected in the academic

literature where OI holds a status of under-researched type of innovation – in the recent study over the duration of 27 years only 3% of the studies were focused on OI (Ganter & Hecker, 2014).

The definition of OI is somewhat diffused. Additional common names for OI are management innovation, organizational change, or administrative innovation to name the most common. Or it can simply be considered a business model innovation, which is changing *how* an organization creates value. That is, if OI is considered to be a process. But it can be an outcome as well. Van de Ven (1986) has defined management innovation as the development and implementation of novel ideas who cooperate within institutional order. Weich & Quinn (1999) refer to organizational change as to “unfreeze-transition-refreeze”. Smith & Taebel (1985) have highlighted two dimensions of administrative innovation – management and technology – former referring to procedures and methods by which policies are implemented and latter relating to the adoption of new physical products and processes. What connects those definitions is *how* the change is brought about.

This study adopts OECD’s Oslo Manual’s definition of OI for the reasons of focusing on the methods, thus addressing the *how* aspect. The definition of OI is defined as follows: „Organisational innovations refer to the implementation of new organisational methods. These can be changes in business practices, in workplace organisation or in the firm’s external relations.” The emphasis is on the ‘implementation’, on the ‘new organizational methods’, and on the three organizational domains – business practices, workplace organization, external relations. ‘Implementation’ refers to the fact that the creation of a new strategy alone is not enough for it to be considered as an OI, there has to be a corresponding implementation activity as well. ‘New’ refers to being new to the firm, i.e. these could be used by other enterprises but not in the particular organization that is at hand (OECD, 2005). So it’s the implementation of a new organisational method inside the firm’s business practices, workplace organisation or external relations. And it should be noted, that the previously listed activities have be the result of the strategic decision made by the management, while mergers and acquisitions should be excluded (while the act itself is not considered the OI, the implementation of the new organisational method during the act of merging or acquisition, is still considered OI).

The role of OI is to support the firm in its attempts to produce other types of innovations. It complements, binds and amplifies other types of innovations. On the other hand, OI could be a true competitive advantage that is hard to copy because it is hidden inside organizations practices as opposed to product innovation, for example. OI can also serve as a source of sustainability in the sense of developing firm’s capabilities that can self-develop to

produce innovations that are necessary or grasp upon opportunities that are presented in the environment. The supporting role of OI is seen when analyzing the inputs for producing innovations. When an organization introduces innovations, these contain new technologies (new ways of combining things or new resources) for which the existing organizational methods were not initially designed for, and thus, it might be that organization now needs to adopt new skills, ideas or behaviors to use those new technologies (Lam, 2005). The sustaining role of OI is seen when analyzing how the firm develops its capabilities. It is organization's ability to innovate that determines its success in introducing innovations by utilizing inventive resources and new technologies (Lam, 2005). OI is hidden in rules, decision-making structure, communication channels, procedures, workspace layouts, in culture. If those elements and many more are orchestrated in a coherent and sustainable way to produce competitive advantage, it is hard to copy.

But complementarity has been found to be context specific (Cassiman & Veugelers, 2006). It need certain conditions. This refers to the orchestration of the process of the OI and technological innovation. Here is where the specific variables create the conditions for the OI to be complementary. These variables are the drives of OI.

## **2.2 Drives of organizational innovation**

Some factors contain more importance and thus have more impact on OI than other drives. The answer gives rise to the emergence and variance of drives for which this study is looking for.

Some researchers refer to drives as to goals (Meroño-Cerdán & López-Nicolás, 2017; Kyu-Nahm Jun & Weare, 2011). The goals derive from motivation. Other researchers see that the driving force behind the organizational innovation can actually be a *cause* of some goal. (Monge, Cozzens, & Contractor, 1992). In other words, something motivated the organization to innovate and then the implementation of that something brought with it some other condition, which actually forced the organization to change more/other methods for producing outputs.

There are vast amount of factors or variables that influence the organization and its environment and their relationship but the ones that act as drives are distinguished by the characteristic of having a high impact on organization by moving the OI – the drives are making dominating impact on other functions, creating conditions in the system, installing



functionality, encouraging, supporting and aiding actors, creating momentums, spreading the rules, keeping entities within limits, supplying actors with power. The manifestation of a drive is a process where there is a match between existing preconditions in an internal organizational environment and complementary factors of an external environment that are physically and psychologically obtainable to the organization. So it is a complex combination of factors, that are mutually dependable and reactive. This unique interconnectedness produces organizational innovation which is unique compared to other organizations and thus inconsistent results might appear in the studies of organizational innovation (Ganter & Hecker, 2014). So, even though two organizations might be influenced by the same set of drives, the outcomes could still be different because the way these drives connect, is still different and different means produce different ends.

### 3. Organizational innovation and its drives

The following, possibly mutually inclusive list of drives, was gathered using the limited available research about what drove organizational innovation using the keywords organizational innovation and drives or motivation or why or determinants, or different combinations of those. The suitable peer reviewed articles were analysed and synthesized through the prism of the previously described definitions of the organizational innovation and the drives of the organizational innovation, and drives were then identified and explained.

The following table of drives intends to draw a picture of recent.

**Table 1.** Drives of organizational innovation with authors

<b>Drives of organizational innovation</b>	<b>Authors</b>
Organizational culture	Daher (2016), (Liao, Chang, Hu, & Yueh, 2012), (Naranjo-Valencia, Jimenez-Jimenez, & Sanz-Valle, 2017)
Organizational communication	Glor (2015), (Kivimäki et al., 2000)
Change agents	Wright et al. (2012), (Sariol & Abebe, 2017), (Wolcott & Lippitz, 2007)
Balance between rigid and organic routines	Wright et al. (2012), (Adler & Borys, 1996)

Reference groups	Mol & Birkinshaw (2009), (Liu & Buck, 2007)
Knowledge management	Cassiman & Veugeler (2006), (Liao et al., 2012), (Nonaka, Toyama, & Konno, 2000)
Other types of innovation	Lam (2005)

Source: compiled by the author

**Organizational culture.** Organizational culture is how the work is done and the 'how' aspect is based on shared values and norms that are communicated through different mediums. More specifically, it affects organizational learning and with it, influence the sustainability of the competitive advantage (Liao et al., 2012). Or the organizational culture can hamper OI. Organizational values, which are found to be positively related to organizational innovation are as follows: „breaking tradition, autonomy, result-oriented, tolerating mistakes, valuing novelty, speed of action, effective group reward recognition, valuing new ideas, flexibility, future-oriented, entrepreneurship, creativity, support for risk-taking, dynamism, participative decision-making, learning and development, adaptability, and empowerment“ (Daher, 2016), because these values will make the employees more prompt to find new organisational methods. These values help the individuals to work with the resources more effectively and more efficiently, which means choosing smart evidence-based goals and having skills to make the best use of the resources. Operating in such a way helps the employees to develop their managerial skills. This then creates conditions for eliminating micro-management. The more of these values will be adopted, the more innovative will the organization be in terms of organizational innovation, because continuous adaptability to the environment brings the organisation faster to the acknowledgment (during the strategy assessment) of finding better methods to combat challenges. Organization can then be attributed as capable to innovate constantly. Organization will then have a sustainable capability to innovate without the push. It will make the organization more agile. This implies and is generally believed, that the rigidity hampers innovation, but bureaucracy and little autonomy has not been found to hold a negative relationship (Naranjo-Valencia et al., 2017). This is connected to the ability to distinguish which domains of the organization require rigidity to be effective and which ones should be approached in a more creative manner by questioning the handling of the resources in the established way.

**Reference groups.** Reference groups provide concepts of organizational innovation (Mol & Birkinshaw, 2009). The reference group could consist of business partners (clients, suppliers, other firms of the group), or science partners (universities, public research institutions, NGOs, consulting firms), or regional competitors, or a combination of these. When an organization engages in benchmarking, it is essentially trying to acquire models of how best to organize. It has been found that international technology spillovers have positive effect on innovation performance, implying that learning-by-exporting and importing enhance own innovation (Liu & Buck, 2007). This provides links beyond the industry's competitors by presenting for observance possibly radically different ways to organize going beyond existing cultural norms.

**Change agents.** Wright et al., (2012) refer to employees involved in the implementation of the innovation calling. Their function is to implement the innovation. i.e. to standardize change agendas. Top management is the entity that directs the course of the organization, it is the initiating force that puts change into motion. Thus, nothing will change unless the deciding organ agrees upon its necessity, and understands that innovation relies on the organization. The manifestation of an understanding and agreement, is based on top management's perception, which in turn is based on personal values. It has been found that the most powerful CEOs tend to engage in exploratory innovation rather than exploitative innovation (Sariol & Abebe, 2017). Powerful CEOs are those who value power (desire to influence) and achievement (setting goals for themselves and like to get feedback).

As change agents help to implement the innovation, the change agents can come in the form of a separate unit as well. Intrapreneurship or corporate entrepreneurship works on innovation inside the organization by using a different business model. Failure to understand that new products might need a new business model, is what leads to missed opportunities (Wolcott & Lippitz, 2007). Intrapreneurship is then a relatively easier way to implement OI that would drive technological innovation.

**Knowledge management.** The more the innovation process relies on R&D, the stronger is the complementarity between OI and technological innovation (Cassiman & Veugelers, 2006). R&D provides an understanding in both, what are the market needs (what should be produced) and how it should be produced (what are the organizational preconditions

for successful production). Moreover, if the organization has the culture of devotion towards creating knowledge inside and acquiring it from outside, it has been found to drive OI (Liao et al., 2012). In this case, organization goes even further in its attempts to gain competitive superiority by not only carrying out R&D, which is more formal in nature, but also nourishing the competitive advantage collectively from all parts of the organization, not just one department or through external partners.

Knowledge is created when there is an interaction between tacit knowledge and explicit knowledge (Nonaka et al., 2000), not by just having either type of knowledge incorporated into the organizational design. Tacit knowledge is inside a person and it is difficult to quantify, store, and retrieve it for someone else to use, because it is flexible and adaptable, and it is the person's unique ability to wield and apply the knowledge that makes it so hard to digitalize. Explicit knowledge is less concentrated and thus it is easier to convert it into knowledge artifacts such as e-mails, reports, images, videos etc.

**Organizational communication.** Encouragement of initiative and critical evaluation of the performance have been found to be indicators of innovative performance (Kivimäki et al., 2000). Communication has the ability to form the perception of performance. Glor (2015) also highlights the power of communication during the process of organizational innovation in achieving fitness with the environment, distinguishing between self-balancing and self-reinforcing feedback. The organization needs to receive self-reinforcing feedback from inside the organization as well as from the external environment in order to check its fitness with the environment and adapt accordingly if necessary. Otherwise, receiving only the self-balancing feedback, it contains a danger of developing a resistance for the change.

The difference between communication and knowledge management (KM) is that Communication is about sharing of information, whereas KM is also creating, storing and reusing it typically using IT in order to enhance the performance. Communication is a process, and information is a content. *Communio* stands for connecting in Latin. Knowledge transfer (KT) which is part of KM, is the most connected term to the organizational communication, referring to the sender-receiver view, where sender transmits knowledge such that it is understood and applied by the recipient. KM should have in place both technological capability to process information and relevant social content for KM platform. Theories of organizational communication deal with creating that relevant social content for specific platforms, i.e. framing communication.

**Balance between rigid and organic routines.** The implementation phase of the organizational innovation is found to be essentially a standardization or routinization of the new organisational methods (Wright, Sturdy, & Wylie, 2012) as opposed to preceding phases, which are more creative. The new organisational methods need to be created and once these are built on top of the existing ones or replace the old ones, the new methods need to be implemented and then standardized. Without the standardization a poorly implemented new organisational method will not drive organizational innovation, because it will be eventually neglected by other standardized operations into which the new method doesn't officially fit. Standardization places the method in the structure, which can be adapted to other operations. For example, if a standardized method has fixed language and clearly defined cycle of tasks, the method can then be used by different business functions such as IT and management. Standardization, that focuses on improving task performance, rather than employee control, is found to be especially efficient (Adler & Borys, 1996). This is because technical efficiency allows the employees to get better at their work, while excessive controlling of the behavior is demotivating for the employees.

Although standardization is associated with bureaucracy, which is considered to hamper creativity and innovation, it is rather a question of where, how much, and in the context of constant change, for how long to apply standardization. If the analysis shows that in some parts of the organization the standardization no longer serves the organization, then the organization can apply more organic approaches in there. Usually for those environments, that have stable conditions, organization applies standardized or mechanistic structure, and for the rapidly changing environments where conditions are fluctuating and their direction is unknown, the organization applies more organic routines in there to deal with uncertainty.

**Other types of innovations, i.e. product innovation, process innovation, and marketing innovation.** As has been previously discussed, OI is what produces innovations through its ability to identify, acquire and utilize the resources and technologies necessary to produce effective outputs (Lam, 2005), so the more innovation the organization produces the more it correspondingly changes the organization itself as well.

Other types of innovations reveal the necessary preconditions for the entity (the organization) that produces them. And the more complex are the innovations, the more sophisticated have to be the preconditions as well to handle the complexity. Those

organizational preconditions could be capabilities to use the new technology or capability to utilize the new resources that are used for that new technology.

## **4. Research methods and data**

The method for analyzing drives of organizational innovation is cross-case analysis as it allows to get a better understanding of the variables of which an organization consists of. For this study, an explanatory multiple case study will be applied to identify and explain emerging themes, and then to compare the findings with theoretical background to give gain more insights about the drives of OI.

The research design consists of five components as defined by Yin, R. K. (2002): „1. a study’s questions, 2. its propositions, if any, 3. its unit(s) of analysis, 4. the logic linking the data to the propositions, and 5. the criteria for interpreting the findings.“.

The research questions are: (1) What are the variables that drive organizations to do OI? (2) Why do organizations do OI, i.e. what motivates them to do OI?

Study propositions, which help to identify relevant information (Yin, R. K., 2002) are based on theoretical evidence, that specific groups of drives motivate the organization to implement organizational innovation – reference groups, change agents, organizational culture, effective organizational communication and KM, balance between rigid and organic routines, and other types of innovation.

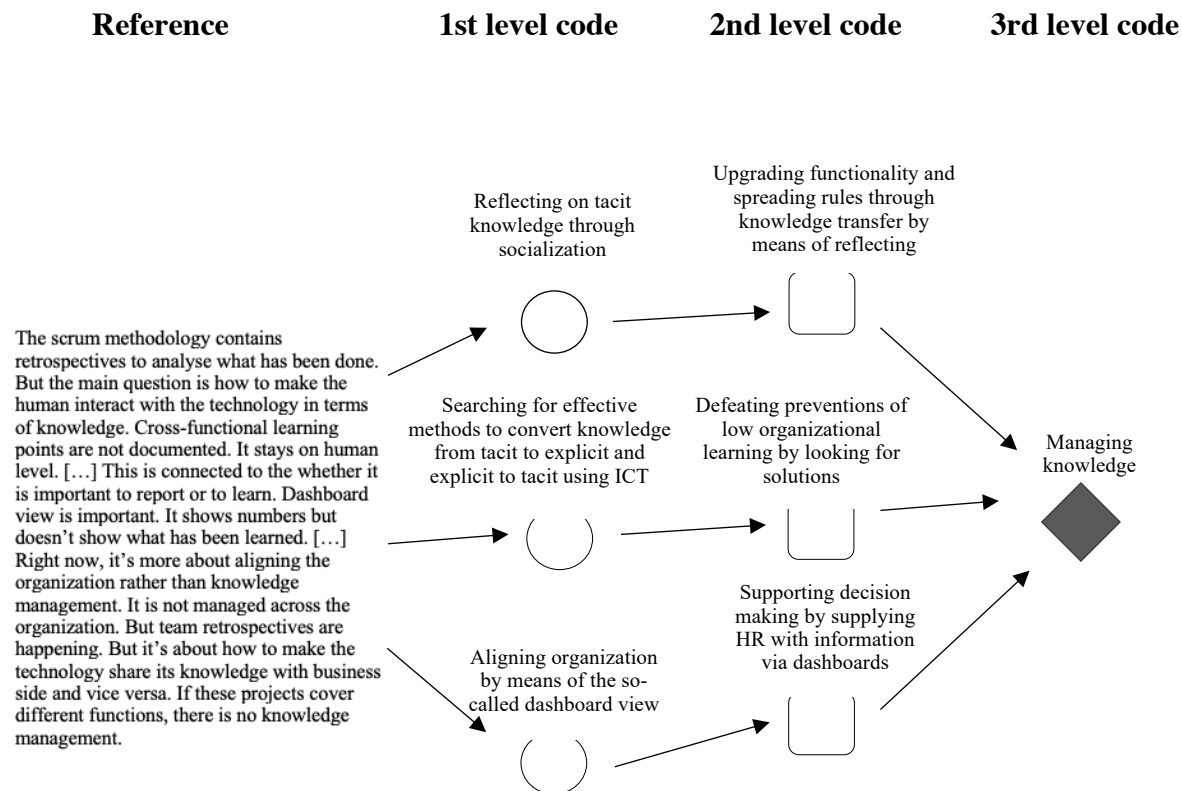
The unit of analysis is large knowledge-intensive firms in Estonia. The knowledge-intensive characteristic is chosen because of the economy’s movement towards knowledge intensity. The characteristic of knowledge-intensity of the organization indicated through the fact that knowledge is used as a key resource to produce inputs or outputs which have a significant impact on organization’s competitive advantage. The precondition in terms of size is set due to such organization’s propensity to engage more in OI as has been repeatedly found (Ganter & Hecker, 2014; Mol & Birkinshaw, 2009; Kimberly & Evanisko, 1981). In order to make generalizations five organizations are studied. Access was requested to (top) management, who know which factors drove the firm to adopt new organisational methods. Diversity is added by constructing a sample of organizations all from different sectors.

Method for data collection are a online pre-surveys and semi-structured interviews formulated based on theoretical frame using descriptive and explanatory questions. Online pre-

survey, mediated by e-mail, is intended to determine whether the organization has implemented new organisational methods. The online pre-survey consists of OECD's definition of organisational innovation accompanied by examples listed in Table 1, based on which the respondents could confirm that they have indeed implemented new organisational methods. In addition to semi-structured interviews, analysis of documents will be used where possible to gain additional insights. The semi-structured interview consists of introduction and three following sections: 1. the identification of new organisational methods and motivations behind choosing those, 2. questions designed to assess the presence of each drive, 3. background of the company. The goal was to understand what kind of organizational innovations have the organizations implemented and why, i.e. what were the reasons behind those choices. The aim was to get the descriptions of what was done in terms of organizational innovation and the motivation for doing so.

The logic linking the data to the propositions is as follows. Theoretically mapped drives of organizational innovation served as a basis for the questionnaire by exploring the motivational aspects of those drives. Then, the answers were codified on three levels. The starting point was to present the transcriptions as references in an unidentifiable way. Then, business practices from the organizational point of view were drawn out of the references to form the first level codes. In the second level codes the question of 'how does the previous drive OI?' was asked to highlight drives' role. Finally, the third level code as the main finding was derived from the practices infused by drives. Visualized example of coding can be seen below in Figure 1. All the referenced and coded information can be found in appendix in Table 3.

To interpret the findings, it was sought to discover categories by coding transcribed text until patterns started to emerge. The data was revisited until it was saturated inside an emerged category such that the data did not indicate towards any new categories, as this saturation of the data inside the category is what indicates that indeed a category has been found (Goulding, 2002). The categories served as a perspective through which to explain what drives OI. Conditions and contexts were added to the categories to explain the behavior and the outcomes were presented as properties of the categories which were dimensionalised in terms of the intensity in order to see which properties of the drives are mostly occupied by the organizations (and then a comparison was made which potentials have not been reached yet in terms of the properties of the drives).



**Figure 1.** Visualized example of three level coding extracted from empirical data

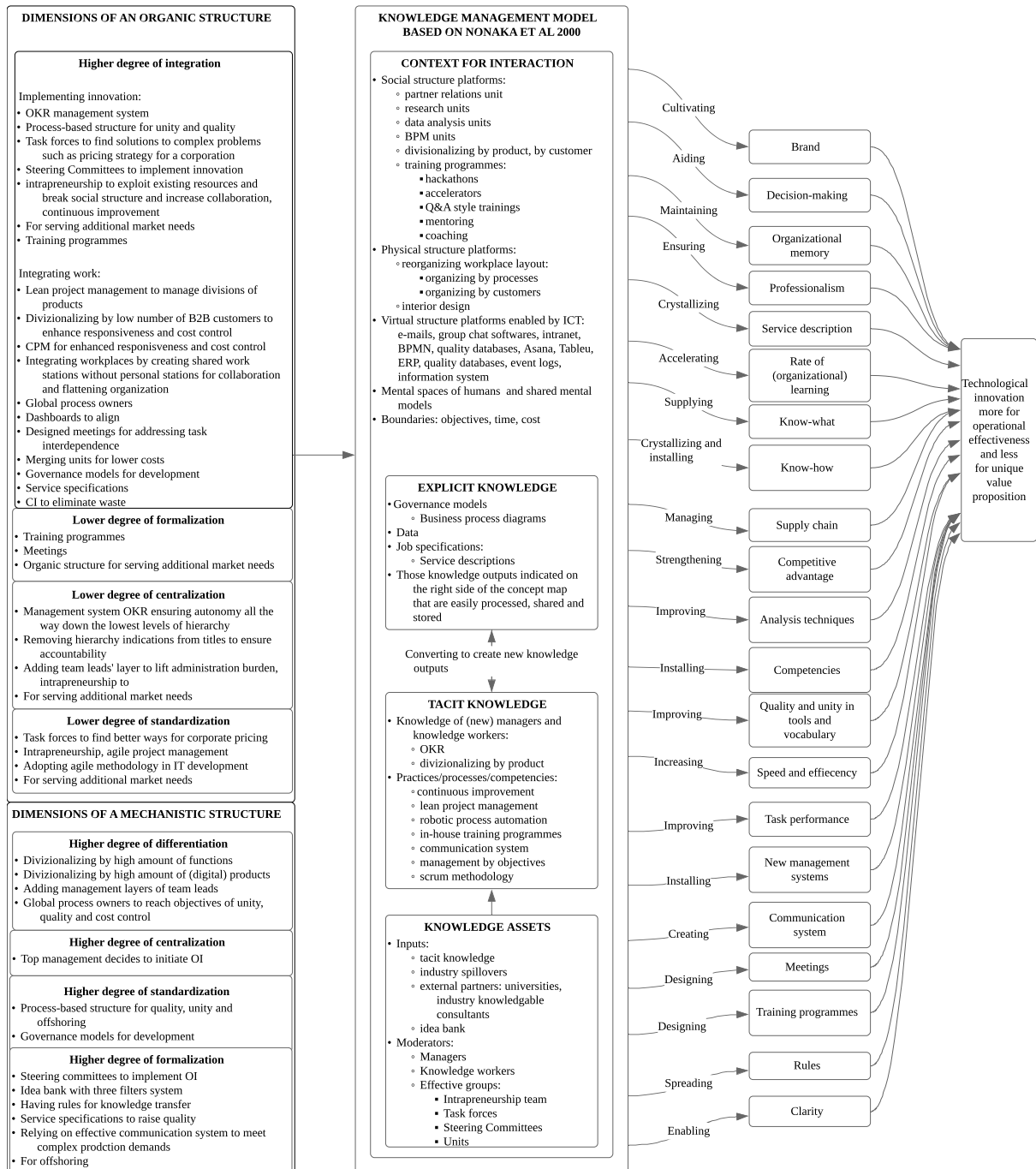
## 5. Results and analysis

The results show that reorganizing and managing knowledge drive OI in that firms engage in these activities the most in the context of OI. The motivation behind engagement in those practices is mostly operational effectiveness.

The following concept map (Figure 2.) indicates the practices that contribute to the organizational design and knowledge management as well as context within which these practices occur and their relations to each other.



What is being done from organizational point of view?



**Figure 2.** Concept map of empirically observed drives: organizational design and knowledge management

The linear placement text and elements was used of for easier understanding, although in reality these elements are interrelated and dynamic in nature as opposed to the static

illustration that is provided. The concept mapping was used as a tool for its properties of organizing and explaining complex phenomena (Renfro, 2017). Focus question was posed for extracting practices, which were then organized using appropriate models.

In case of organizational design, dimensions of organizational structure were used to differentiate between organic and mechanistic structures inside the organizations. Integration is pursued to the most by the sample. This orientation towards integration is explained by the large size of the organizations. To achieve the goal of operational effectiveness systemic focus on the results is achieved by global process diagrams: *“The negative aspect with [adopting] the process-orientation is that it often led to mostly drawing. But actually, you need results. So, we created Global Process Owners.”* – Global Account Director. Or managing by objectives. *“Every quarter we set cross-organizational OKRs. And based on that, every team set their own OKRs and it goes down to the individual level. This allows the teams to be autonomous. We don’t tell teams what to build. Business side doesn’t give the input of what to do. Team has its own product area and goals and they think themselves how to get to these. With this, we ensure short command chain, flat structure and as little bureaucracy as possible.”* – Vice President of Technology. Or it is achieved by the means of effective groups – task forces, steering committees, intrapreneurship.

Or by taking a bottom-up approach of educating the HR how to achieve organizational goals. Or by combining these methods to provide organization-wide integration. By dwelling deeper, it can be seen that integration is achieved through divisonalizing, which is brought to the minimum and organized by the customer in order to enhance responsiveness and to control cost. As is the use of customer portfolio management, which dwells deeper into the customer relationship management by calculating value and offering services accordingly. The integration from divisional perspective is achieved by using lean project management as well as global process owners, also designed meetings and dashboards, which also take the form of internal TVs. CI is applied everywhere throughout the organizations, and automation is integrated more and more: *“We are implementing robotic process automation. And thinking more about how to move from Excels to another place. In general, trying to find new tools. Trying to get rid of this really dumb work by implementing some technical/digital solution.”* – CEO. High levels of integration indicate organic structural dimensions, which foster OI.

The previously described modes of integration to innovate the organization are accompanied by organizational learning. The inputs for knowledge benchmarking, industry spillovers, as well as industry knowledgeable consultants and universities: *“We created a new*

*unit for partner relations in order to have a long-term view, such as choosing together with universities topics that we would like to analyze together.” – Partner Relations Manager.* Sophisticated training programmes are designed to educate the HR: *“Main point is to help the teams get faster from A to B. We bring in coaching and mentoring. The startup community’s programmes (accelerators, hackathons) were used as service providers to create the programmes.” – Intrapreneur.*

The converting of explicit and tacit knowledge is moderated using managers, knowledge workers and effective groups (task forces, steering committees, divisions) in order to solve various organizational objectives: install competencies, spread the rules, aid the decision making, improve quality and unity in tools and vocabulary. All of that happens in various contexts, which foster OI – aesthetically appealing interior design, organizing physical structure by customers or by processes, or by providing digital platforms such as intranet or internal TVs, where news about current status and competitors’ progress are crystallized.

## **6. Discussion, conclusions and implications**

The purpose of this study was to discover variables that drive OI and the motivation behind engagement to those factors. Results indicate that it is knowledge management (KM) and organizational design that drive OI. The empirically identified drives match theoretically identified drives in that most of them overlap, but the KM and organizational design clearly dominate. The main conclusions are discussed below.

Theory indicates that the more the innovation process relies on R&D, the stronger the complementarity between OI and technological innovation (Cassiman & Veugelers, 2006). Orientation towards R&D is observed also in the empirical evidence where data-based decision-making is the norm and ICT provide means to enhance that. Liao et al. (2012) highlight importance of devotion towards creating knowledge inside and acquiring it from outside in fostering OI. This has been observed empirically where organizations cooperate with universities and industry knowledgeable consultants for creating knowledge together for supporting the long-term view. Nonaka et al. (2000) have stated that organizational knowledge is created when explicit and tacit knowledge interact, rather than through just one type of knowledge. This has been observed the least in the observed organizations. Although there is rich tacit knowledge base, such as methods of continuous improvement, lean project

management, management by objectives, etc, there less explicit knowledge, such as business process diagrams, tidy data, specifications, and other type of knowledge that is easily processed, shared and stored. This indicates lack of converting tacit knowledge to explicit knowledge (codification of knowledge). It has been found that codification has a positive impact on financial results (López-Nicolás & Meroño-Cerdán, 2011).

OI implementation is essentially a standardization or routinization of new organisational methods (Wright et al., 2012). This is observed empirically as well. After the organic search for solutions through task forces and cooperation with external partners, the methods get routinized to achieve operational effectiveness. A large proportion of orientation is towards integration of the activities, thus empirically observed organizations are looking for efficient ways to help them standardize integration. ICT is utilized as is a system for ICT to function properly. Adler & Borys (1996) have found that standardization, which focuses on task performance rather than employee control is especially efficient. Empirically it is observed that a lot of effort goes into standardizing task performance, such as using the business process management techniques, continuous improvement or being strongly objective oriented. The theoretical evidence indicated the necessary existence of both organic and mechanistic structure for serving different purposes as has been empirically found and described in the results section, but empirical evidence indicates strong orientation towards integration although no theoretical evidence has explicitly highlighted it in large amounts.

But this orientation towards integration supports the motivation of operational effectiveness, that is behind the engagement in drives of OI. And that it turn is explained by societal context as has been found in the study comparing western and eastern countries in Europe in terms of their OI patterns and found that the East-Europe's exclusive orientation towards operational effectiveness is due to the past centralized and planned system of society, which still affects the choice to operate only within established context (Sakowski et al. 2018), which includes achieving effectiveness through the achieving of better integration. This gives rise to caution highlighted by Porter (1996) who explained that the nature of the strategy is to compete on unique value proposition not just operational effectiveness, which is an obvious variable of the competitiveness but is not sufficient to achieve market superiority and neglecting that ultimately leads to competing on price. Although there is a large proportion of orientation towards unique value proposition among the empirical findings, it has been observed it is more operational effectiveness that is motivating organizations to do OI.

The empirical findings are supported by the theory concerning drives of OI.

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## Appendix

### A.1 Questionnaire for identifying drives of organizational innovation

#### Introduction

Organizational innovation is the implementation of new organisational methods, such as new business practices, new workplace organisation or new external relations, while the methods have to be result of strategic decision made by the management excluding mergers and acquisitions (OECD, 2005). The role of the drives is to motivate the firm – show it why is it necessary and how to do an innovation in organizational methods. The drives of organizational innovation bring in new knowledge and this brings changes in activities and improvisations that accompany the business practices. Changing rules, procedures etc is part of organizational innovation. Please see the following examples of organizational methods (CIS, 2012):

Organizational domains	Examples
New <b>business practices</b> for organising procedures	Learning organization, CRM, balanced scorecard, supply chain management, knowledge management, lean production, quality management, etc.
New methods for <b>organising work responsibilities and decision making</b>	New system for responsibilities, for teamwork, for decentralization, for integration or deintegration of departments, for education/training systems, etc.
New methods of <b>organising external relations</b> with other enterprises or public organizations	First time use of alliances, partnerships, public relations, outsourcing or sub-contracting, etc.

**Section 1. Questions related to the description of new organisational methods that were implemented and motivation for doing so**

1. Please name the organisational innovations that you implemented during the last three years, i.e. 2016-2018.
2. Why did you decide to go for new organisational method(s)?
3. What other factors influenced the decision to implement new organisational methods?

**Section 2.1. Questions related to quality primary and secondary reference groups**

4. Where did you get information about new organisational methods that you actually used?
5. Why did you choose that source?

**Section 2.2. Questions related to change agents**

6. Who was the initiator to consider the possibilities for new organisational methods?
7. Why did this actor initiate that?
8. Who directed the implementation of the new organisational methods in your company?
9. How did this actor direct that?
10. Who actually implemented the new organisational methods?
11. Please describe your decision-making structure.

**Section 2.3. Questions related to organizational culture**

12. Which of the following values does your organization have:

breaking tradition	effective group reward recognition	support for risk-taking
autonomy	valuing new ideas	dynamism
result-oriented	flexibility	participative decision-making
tolerating mistakes	future-oriented	learning and development
valuing novelty	entrepreneurship	adaptability
speed of action	creativity	empowerment

13. What other values can you name in your organization? Why are these important to your organization?

**Section 2.4. Questions related to effective communication**

14. On a scale from 1 to 10, strategically how important do you consider communication and knowledge management?
15. How fast does the information and knowledge travel top-down and bottom-up?
16. Please describe your communication system – strategy, coordinating actors, touchpoints, technologies, programmes, measures, etc.
17. Why is it like that?
18. Please describe your knowledge management system – tools and techniques that help to transform tacit knowledge (know-how within people) and explicit knowledge (know-what and know-why), critical areas of knowledge, mechanisms for preventing loss of knowledge (Kallas, 2018), etc.
19. Why is it like that?
20. What are the benefits of knowledge management for your organization?

**Section 2.5. Question related to balance between rigid and organic routines**

21. Please explain how did you implement the new organisational methods.



- 22. Why did you decide to implement those like that?
- 23. Please explain how do you improve the implemented new organisational methods?
- 24. Why did you decide to improve those like that?

**Section 2.6. Question related to product innovation**

- 25. Please describe what kind of product innovations have you done.  
*„A product innovation is a new or significantly improved good or service with respect to its capabilities, user friendliness, components or sub-systems.“ (CIS, 2012).*

**Section 2.7. Question related to process innovation**

- 26. Please describe what kind of process innovations have you done.  
*„A process innovation is the implementation of a new or significantly improved production process, distribution method, or supporting activity.“ (CIS, 2012)*

**Section 2.8. Question related to marketing innovation**

- 27. Please describe what kind of marketing innovations have you done.  
*„A marketing innovation is the implementation of a new marketing concept or strategy that differs significantly from your enterprise's existing marketing methods and which has not been used before.“ (CIS, 2012)*

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