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Expansive learning in a self-managed organization

An example of a software company from the healthcare sector

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This is the first study applying cultural-historical activity theory to the study of a self-managed organization. The study presents an analysis of Oima, a self-managed organization. The theory of expansive learning and previous literature on self-managed organizations are used as the theoretical and methodological underpinnings of this study. A self-managed organization is one where authority has been radically decentralized in a formal and systematic way throughout the organization. The aim of the study is to identify the features of Oima as a self-managed organization, the elements of its overall activity, and the indications of expansive learning taking place in this organization. To achieve this, in-depth interviews were conducted with seven employees, who together make up 20% of the company workforce, with various functional specializations. The data were analyzed using thematic abductive analysis and by applying analytical tools derived from cultural-historical activity theory. The results of this study show that the object of Oima's activity is multifaceted, facilitating flexible updating of the company's objects, rules, and practices. Furthermore, the practices used by the company turn every decision made into a potentially expansive micro-cycle of expansive learning. Altogether, the findings indicate that expansive micro-cycles are continuously taking place in the studied organization. However, their activity is not without tension and contradictions. This provides evidence that self-managed organizations are able to constantly turn contradictions into drivers for change and development, and to bridge discontinuities in expansive learning, leading to expansion of the object of their collective activity on an ongoing basis.

Keywords: expansive learning, self-managed organization, knotworking, decentralized authority, Teal

1 Introduction

The real problem of humanity is the following: We have Paleolithic emotions, medieval institutions and godlike technology. And it is terrifically dangerous, and it is now approaching a point of crisis overall.
E.O. Wilson

The last several decades have been marked by increasingly common pronouncements of how the world is becoming faster and more complex all the time. Led chiefly by globalization and technological progress, with the latter revolving in large part around the triad of personal computers, the internet, and most recently artificial intelligence, the unpredictability and rate of change require both organizations and individuals to prioritize adaptability above all else (Schiele et al., 2021) .

However, this period is also characterized by what is sometimes called the Meaning crisis (Vervaeke et al., 2017) – the same faculty that enabled such dramatic technological progress has simultaneously undermined the ability of many people in the global West to genuinely participate in traditional religions. It has also rendered mere survival relatively easy for members of these societies, as hardly anyone has to worry about food or safety. The downstream effects of this are significant, most importantly in the erosion of meaning in life, connection with broader communities, and trust in public institutions. Under these circumstances, it is one's work that becomes a key source of meaning and self-actualization. Organizations thus also have to search for ways of facilitating employee engagement and providing them with the meaning they look for.

An increasingly popular solution to the dual challenge of adaptability and engagement (Lee & Edmondson, 2017) is decentralization of authority. By shifting decision-making from managers closer to front-line workers, organizations can avoid the delay and filtering of information that hierarchical forms of management engender, while simultaneously providing the employees with the autonomy and opportunities for the growth they want. The most radical approaches to decentralization of authority eliminate management completely. Companies following this approach are sometimes called self-managed organizations or SMOs (ibid.), and one such company is the subject of this study.

To study SMOs as well as to study how organizations in general navigate change, organization science has used many concepts and approaches, for example, process management, knowledge management, organization design, organizational learning, learning organization, communities of practice, among others. Some of these represent a more

macro-perspective focused on structures and systems, while some represent a more micro-perspective revolving around individuals. What all of them have in common is that they tend to neglect the concept of object of activity in their units of analysis (Engeström & Kerosuo, 2007; Engeström, 2016).

However, it is precisely this concept of object that enables the bridging of the macro- and micro-perspectives. The object represents the problem space at which the activity is directed and as such it embodies its meaning (Engeström & Blackler, 2005). It helps elucidate what are the structures, processes, and agents focused on, and thus it can help discover and address the contradictions arising from competing conceptions (Engeström & Sannino, 2011). Without the concept of object, the macro-perspectives tend to lose sight of the importance of agency and commitment of individuals, while the micro-perspectives struggle to describe the collective process through which individuals can relate to and transform the surrounding structures.

Either of these perspectives is thus incomplete (as every singular perspective has to be) and taken on its own can only provide a partial theoretical understanding of how organizations decentralize authority and navigate change. Successfully bridging them in a dialectical way could therefore provide a more accurate picture of SMOs, which could in practice help other organizations move closer to this model and achieve the adaptability they seek.

Such a bridging perspective is offered by cultural-historical activity theory, in which the concept of object is central. Furthermore, the third generation of activity theory – the theory of expansive learning (Engeström, 2015) – is focused precisely on how organizations (and activity systems more broadly) transform. The theory of expansive learning includes its own interventionist methodology called the Change Laboratory (Virkkunen & Newnham, 2013). As such, it constitutes a valuable complementary lens to understanding SMOs.

On the other hand, not even transformation initiated by a Change Laboratory intervention is guaranteed to lead to a sustained, continuous adaptation (Engeström, 2016). However, this is supposed to be one of the hallmarks of SMOs, as indicated e.g. by them sometimes being called "evolutionary" (Laloux, 2014). Activity theory could thus benefit from studying SMOs in detail and finding out whether they indeed undergo continuous expansive learning and if so, what are the key factors that help them achieve this. My thesis is therefore a study of a self-managed organization through the activity-theoretical lens, aiming to contribute both to the theoretical understanding of SMOs and of the requirements such contexts set for continuous, expansive learning.

Finally, what has the quote by E.O. Wilson to do with all this? Quite simply, it highlights what foundationally motivates my broader effort that this thesis is an initial manifestation of – the fact that the twin challenges of adaptability and meaning and the search for solutions play out on the background of serious threats that some consider to be existential for the entire humanity. The paleolithic emotions lead to dangerous rivalrous dynamics that could end in a range of tragic scenarios, from climate catastrophe through nuclear war to all the possible dangers of increasingly powerful artificial intelligence. The medieval institutions seem unable to provide the guidance and wisdom needed to navigate such a minefield. However, it is my belief that the institutions can be transformed so that they do meet these needs. For institutions (in the sense of organizations), such a transformation would have to solve, among other things, the challenges of adaptability and meaning. Thus, the deepest motive behind this thesis was to learn more about how I could contribute to avoiding the existential risks, which I consider to be very real.

2 Theoretical background

2.1 The theory of expansive learning

2.1.2 The principles of the theory of expansive learning

The theory of expansive learning (TEL) is a framework for studying human activity – including work and learning in the workplace – that is often presented as transcending the dichotomies between the micro- and macro- perspectives, between individual and collective, and cognitive and cultural (Engeström, 2000; Virkkunen & Kuutti, 2000; Engeström & Kerosuo, 2007; Engeström, 2015). It represents the third generation of cultural-historical activity theory, with the first generation revolving around the work of Vygotsky, and the second generation revolving around the works of his students, especially Leontyev (Engeström, 2015). As mentioned, TEL takes entire **activity systems** as its basic unit of analysis (ibid.). Activity systems are composed of the following elements (Engeström, 1993, p. 67):

- The **subject**: an individual or subgroup whose viewpoint is chosen for the analysis of the activity system
- The **object**: the "raw material" or "problem space" at which the activity is directed
- The **instruments**: the tools mediating the object of activity, which affect how the object is transformed into an outcome
- The **community**: other participants of the given activity system who share the same object as the subject
- The **division of labor**: how tasks, as well as power and status, are divided among community members
- The **rules**: both explicit and implicit regulations constraining actions and interactions within the system

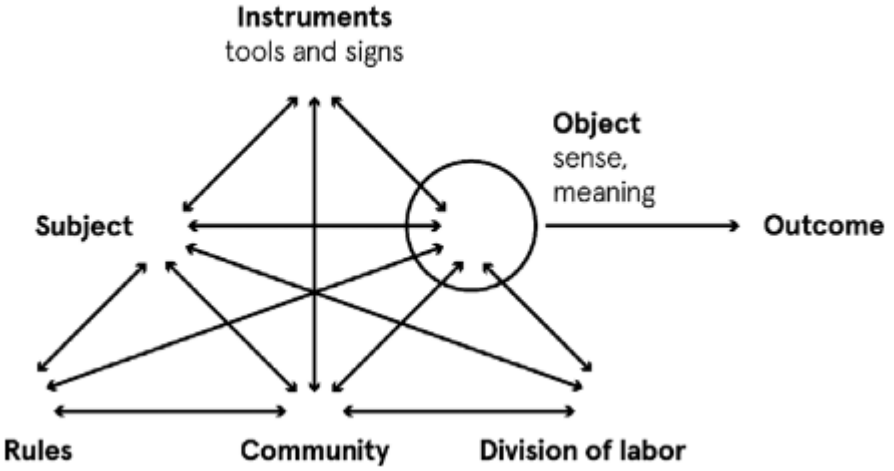

Figure 1. General structure of human activity (see Engeström, 2016, p. 45).

Taking activity systems as a basic unit of analysis thus means that in the activity-theoretical framework these six elements and their interrelations are as fundamental as the subject-object dyad is in the Cartesian framework that underlies everyday thinking. This is indicated by the arrows between all the elements of activity in Figure 1. The central principle underlying this expanded view of the basic unit of analysis is that of **mediation**, which states that the relationship between subject and object is never simply direct, but rather simultaneously instrumentally and socially mediated (Engeström, 2015).

Instrumental mediation was first proposed by one of the founders of cultural -historical activity theory Lev Vygotsky. According to this principle, human activity aimed at any object is always influenced by the instruments used in the activity, which thus become "the aspect that functionally determines all the processes that form the instrumental act." (Vygotsky, 1997) In other words, objects are never simply "there" to be perceived and interacted with, but are brought into being through the instruments the subject uses for interacting with them (Virkkunen & Newnham, 2013). Importantly, instruments can be both technical and psychological (Engeström, 2015), with some of the most important elements of the latter being language and the concepts used to describe and "stabilize" objects and "future-oriented images" (i.e. the vision towards which the activity is directed) (Engeström, 2008, p. 205). In addition, psychological tools can have the form of signs, i.e. "psychological tools that people use to control their own psychological processes, behaviors, and social interactions" (Virkkunen & Newnham, 2013, p. 39).

Similarly, social mediation, elaborated mainly by Leontyev, means that human conduct cannot be properly understood without acknowledging and analyzing the social structures it is

embedded in. To aid in this analysis, activity theory distinguishes between "short-lived goal-directed action and durable, object-oriented activity" (Engeström, 2000, p. 964). This in turn rests on the distinction between objects and motives.

As mentioned above, an object is "the 'raw material' or 'problem space'" (Engeström, 1993, p. 67), it is "that to which an act is directed" (Leontyev, 1981, p. 36). This is very different from the usual notion of objects as things. As Virkkunen and Newnham (2013, p. 33) write, "An entity becomes an object of human activity when its transformation is seen to meet a need and is invested with the meaning and motivating power related to meeting that need." In other words, the object can be thought of as the segment of living, dynamic reality out of which the desired outcomes are created. Furthermore, Engeström and Kerosuo (2007, p. 2) write that "The object is multi-faceted and open to innumerable partial interpretations (...) Yet the object is also a unified whole, bounded by the efforts of the activity systems engaged with it." This simultaneous "focal role and inherent ambiguity of the object of activity" (Engeström, 2016, p. 44) is indicated in Figure 1 by the circle around the object.

A **motive**, on the other hand, captures the purpose of an individual's goal-directed behavior. However, the immediate object of such behavior is usually something else than that which could be used for producing the outcome directly. Leontyev (1981, p. 210) therefore defines "processes, the object and motive of which do not coincide with one another" as **actions**. Furthermore, the members of any society are always engaged in collective **activity** systems, the communal motive of which "is embedded in the object of the activity" (Engeström, 2000, p. 964). In other words, activity is always collective and driven by a shared object-related motive (Leontyev, 1981). It is the shared, collective-motive-carrying object that primarily determines the identity of any activity (Engeström, 2015). In such activities, the actions of an individual can even be directed at something completely contrary to his motives, such as when a member of a hunting group actively scares his group's prey. Understanding individual actions is thus only possible by considering the **division of labor** among all the members of the community and the **rules** governing their joint effort, that is, by considering the entire activity. This allows the observer to see that the hunter is in fact directing the prey towards the ambush the others have laid, with the expectation that he will later get his share of the food (Engeström, 2015). In other words, activities consist of the actions of individuals or groups, but these actions can only be properly understood when considered as part of the overall activity (Engeström, 2008).

Together, the principles of mediation and object orientation thus explain why the theory of expansive learning takes entire activity systems as its basic unit of analysis. Another key principle of TEL is **historicity**. It states that activity systems form and evolve over extensive

periods of time – all the elements of the activity and their interactions were shaped by their own local history, as well as by the broader history of the tools and ideas of the society the given activity is embedded in (Engeström, 2001). For example, the impractical "QWERTY" layout of the keyboard is still dominantly used, even though the reasons that gave birth to it – the need to slow down typing and thus avoid jamming of typewriters – are no longer relevant (Virkkunen & Kuutti, 2000). Therefore, activity systems need to be analyzed against both their local and more global histories (Engeström, 2001).

Historicity also underlies another fundamental principle of TEL, namely that of **contradictions** as sources of change and development in activity systems. The concept of contradictions represents "historically accumulating structural tensions within and between activity systems" (Engeström, 2001, p. 137). This implies that contradictions are not simply problems, conflicts, dilemmas or paradoxes – these and similar concepts need to be understood as *manifestations* of contradictions (Engeström & Sannino, 2011). The fundamental contradiction originates from the division of labor – it is the dual existence of each activity as simultaneously a total, independent system and as one specific sub-system among many (Engeström, 2015). This is mirrored in the aforementioned mutual shaping of individual actions and the total activity (ibid.) In capitalism, this primary contradiction exists as the inner conflict between the use value and exchange value of commodities (Engeström, 2001), because commodities (i.e. anything that can be sold or exchanged) have to both be useful and provide those who produce them with the means of acquiring other commodities. But as the name suggests, the primary contradiction is not the only one – according to Engeström (2015, p. 70-72), four levels of contradictions can be identified:

- The **primary contradiction** of capitalism "lives as the inner conflict between exchange value and use value within each [element] of the triangle of activity."
- The **secondary contradictions** "are those appearing between the [elements]."
- The **tertiary contradictions** are those between the dominant and the "culturally more advanced" forms of activity, for example between the rules everyone in an organization is used to following and new rules the management created.
- The **quaternary contradictions** are those that emerge between the central activity in question and the "neighbor activities" – these include the activities in which the objects and outcomes of the central activity are embedded, and vice versa the activities whose objects and outcomes are embedded in the central activity, i.e. the activities whose outcomes are the instruments, rules or subjects of the central activity.

As mentioned, for the theory of expansive learning, contradictions are the driving force for change and development of activity systems (Engeström, 2001). However, unless explicated and addressed, they can also lead to an overall crisis (Engeström, 1993). Contradictions thus create pressure on modeling and reconstructing these activity systems in a process called **expansive learning**, which leads to the resolution of the present contradictions while also containing the unavoidable seeds of future ones (Engeström, 2015).

Expansive learning – also called "learning activity" – is therefore a different type of learning than the one usually described by traditional approaches to workplace learning where individuals are learning in order to adapt to changes *within* their original context. In contrast, expansive learning is a way of proactively transcending and changing this context (Engeström, 2015). It thus offers a solution in situations where the pace of change of the context is too fast for reactive forms of learning to be sufficient.

As an activity, expansive learning takes the central productive activity as its object and "expanded objects and new collective work practices, including practices of thinking and discourse" as its outcomes (Engeström & Kerosuo, 2007, p. 4) – expansive learning is thus an "activity-producing activity" (Engeström, 2015, p. 99). However, this object first needs to be discovered – initially it appears in the form of tasks and disturbances, i.e. in the actions making up the central productive activity and the manifestations of contradictions they lead to (ibid.). In other words, expansive learning begins by modeling the elements of the central activity and their interdependencies, and explicating the contradictions of the system. The main instruments of the learning activity are therefore models: representations of the central activity and its contradictions, but also of its historical and possible future development (ibid.). Importantly, as part of this modeling process, the objects and motives of the future form of the activity need to be expanded, i.e. "reconceptualized to embrace a radically wider horizon of possibilities than in the previous mode of the activity." (Engeström, 2001, p. 137) Through the development of these models and the implementation of the new, expanded ones, the central activity is gradually mastered and transformed.

The process of expansive learning can itself be modeled as an ideal-typical multiphasic cycle (Figure 2). Such an **expansive learning cycle** will start with (1) questioning some aspects of the extant practice, followed by (2) analyzing how it came about and/or what are its inner mechanisms and interrelations. Then comes a construction of an (3) explicit model of this situation that can be shared with others, followed by (4) experimentation on the model to validate it and fully grasp its implications. Next is (5) implementation of the model by designing practical applications and extensions. Finally, the whole process is first (6) reflected on and then evaluated and its outcomes are (7) adopted into new practice (Engeström, 2015).

According to Engeström (1999), the whole cycle typically spans a period ranging from several months to two or three years. These large scale cycles are made up of many micro-cycles, which can last as little as a few hours or even minutes. However, these micro-cycles are only potentially expansive, as their appearance doesn't itself guarantee that full-scale expansive learning is happening. Nevertheless, the concept of expansive learning micro-cycles is suitable for analyzing more dynamic, small scale manifestations of a learning activity.

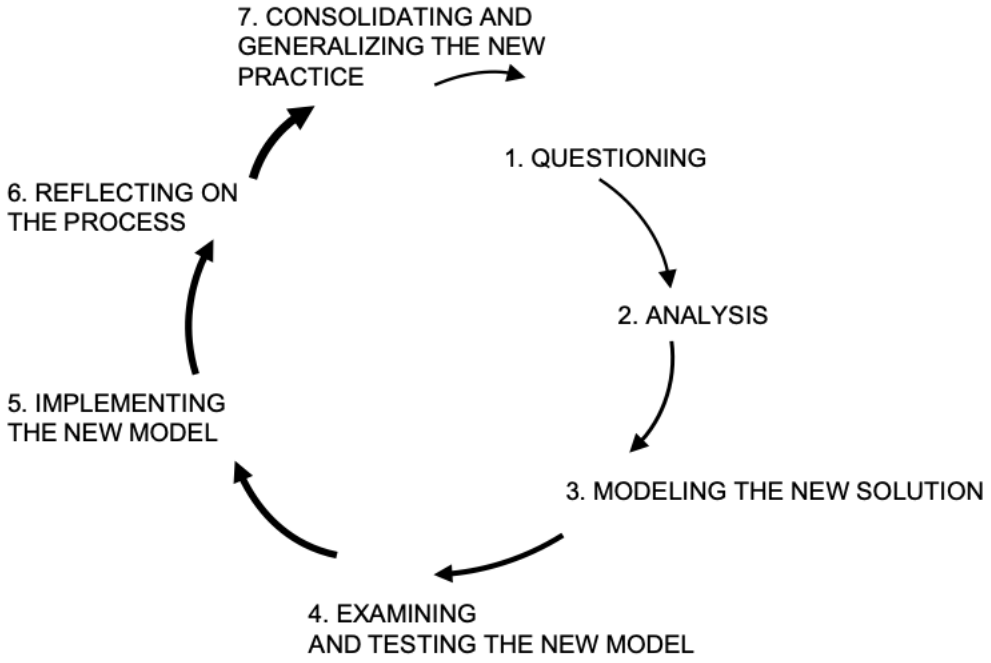

Figure 2. Sequence of learning actions in an expansive learning cycle (adopted from Engeström & Sannino, 2010, p. 8)

However, as implied by the collective nature of activities, a necessary precondition of learning activity is for the subject of learning to be transformed from an isolated individual to a collective (Engeström, 2016). This is required for entering a collective **zone of proximal development**, which is a concept deriving from Vygotsky's (1987) seminal work, and which Engeström (2015, p. 138) redefines to be applicable to collective activities as "the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions." Expansive learning can thus be seen as a cyclical movement through this collective zone that produces new forms of the activity that transcend the present contradictions.

Moreover, this requirement for a collective subject means that the process of expansive learning relies on commitment and initiative "from below", and as such cannot be predefined

nor constrained by any authorities (Engestrom, 2015). The theory of expansive learning therefore advocates for "an interventionist research methodology that aims at pushing forward, mediating, recording, and analyzing cycles of expansive learning in activity systems is needed." (ibid., p. xvi) The most important outcome of such interventions and of expansive learning in general is developing the participants' **transformative agency**, i.e. their "ability and will to shape their activity systems." (Engeström, 2016, p. 74) Such agency can also be understood as a group of people "breaking away from a given frame of action" and taking the initiative in transforming it (Virkkunen, 2006, p. 43). However, rather than studying traits or abilities directly, TEL analyzes transformative agency in terms of actions – according to Haapasaari et al. (2016), the 6 main categories of these are resisting the change, criticizing the current activity, explicating new possibilities, envisioning new patterns or models, committing to concrete transformative actions, and taking transformative actions.

Finally, the universal applicability and integrative character of TEL have led to it being used to analyze various types of organizations, from hospitals (Kerosuo et al., 2010) through banks (Toiviainen and Engeström, 2009) to entire industry networks (Hill et al., 2007). One of the concepts emerging from these varied applications that is relevant to the study of novel organizational forms is **knotworking**. It describes situations where "collaboration between the partners is of vital importance, yet it takes shape without rigid, predetermined rules or a fixed central authority." (Engeström, 2008, p. 20). Knotworking is a more dynamic form of collaboration than even self-managed teams, "characterized by a movement of tying, untying, and retying together seemingly separate threads of activity" (Engeström, 2008, p. 194). In other words, in work characterized by knotworking, temporary "knots" are formed by different agents coming together to solve a specific problem and then dissolved again – "the center does not hold." (ibid.). Knotworking also often involves flexible re-negotiation of rules and improvised creation of new instruments to keep up with a rapidly changing object and as such typically requires expansive learning (Engeström, 2015).

In summary, the theory of expansive learning, based on the principles of instrumental and social mediation, takes the object-oriented activity systems as its basic unit of analysis (Engeström, 2015). This allows it to consider all the elements of the activity and their interrelations together, thus transcending the divides between various micro- and macro-perspectives. Furthermore, the principles of historicity and contradictions highlight contradictions as the key drivers of disturbances and change in all activity systems and bring attention to their developmental origins (Engeström & Sannino, 2011). This enables the modeling of the past, present, and possible futures of the activity in question in cycles of expansive learning, which lead to gradual mastery and transformation of the activity

(Engeström, 2016). To facilitate these cycles, TEL advocates for an interventionist research methodology and emphasizes transformative agency as the most important outcome of expansive learning. TEL also develops concepts for analyzing novel work phenomena. Of these, the most important concept for this study is that of knotworking, which describes work characterized by dynamic collaboration in flexibly formed "knots" that rely on improvised rules and instruments to quickly solve a specific problem before dissolving again.

2.1.2 Positioning the theory of expansive learning between organizational learning and organization design

As mentioned in the previous section, TEL is a framework aiming at transcending the dichotomies between the micro- and macro- perspectives, between individual and collective, and cognitive and cultural (Engeström, 2000; Virkkunen & Kuutti, 2000; Engeström & Kerosuo, 2007; Engeström, 2015). The need for such an integrative perspective can be illustrated by tracing the deficiencies of the fields of organizational learning and organization design mentioned by researchers of these fields.

According to Basten and Haamann (2017) learning takes place in organizations all the time, but it doesn't always lead to improved performance of the organization. In order for learning to systematically lead to improvements in organizational performance, the learning itself has to become systematic. Achieving that, in other words creating structures that support systematic learning in the organization, is the main concern of organizational learning.

However, there is confusion about what exactly the concept of organizational learning means and what it concerns. This leads to a broad array of approaches, which are nonetheless limited in their scope and thus in their ability to produce the desired result of continuous improvement, and an integrative perspective of organizational learning is therefore needed (Virkkunen & Kuutti, 2000; Basten & Haaman, 2017).

Moreover, most of these approaches are only concerned with what the structures and processes of organizational learning should be doing, but not how they are created in the first place (Virkkunen & Kuutti, 2000; Basten & Haaman, 2017). To understand the latter problem, organizational learning has to be understood as part of the overall organizational structure and its transformations (Virkkunen & Kuutti, 2000; Puranam & Maciejovsky, 2017).

That said, the field of organization design – in whose purview organizational structure and its transformations are – is itself often unable to account for change (Romme, 2003; Puranam, 2017). This is because the traditional scientific research mode, based on the description and analysis of dependent and independent variables and their covariation, can

only explain already existing organizational phenomena (Romme, 2003; Langley et al., 2013). The key problem is that such variance research ignores time as a key variable and thus "abstracts away from the temporal flow of much of organizational life." (Langley et al., 2013, p. 4). This then leads to a relevance gap between academic research of organization design and the needs of practitioners, for whom the timeless propositions of variance research do not generally provide actionable insights (Romme, 2003; Dunbar & Starbuck, 2006; Langley et al., 2013).

To rectify this situation and understand how change in organizations happens, a true design mode based on the investigation of systems that do not yet exist is needed (Romme, 2003; Puranam, 2017). In other words, research needs to involve attempts to actually re-design organizations and study how they adapt to such efforts (Dunbar & Starbuck, 2006). Such design research needs to take into account how the present conditions came about, because these "earlier efforts alter design situations" (ibid., p. 176), thus making every situation unique and in need of a unique approach (Romme, 2003). However, since design is necessarily a continuous effort, design research needs to simultaneously study the goals and the process of design (Dunbar & Starbuck, 2006; Garud et al., 2008). The process view then needs to recognize "the central role of tension, contradiction, paradox, and dialectics in driving patterns of change" (Langley et al., 2013, p. 9). Furthermore, design research also needs to invite from the beginning the members of the organization to be re-designed into a dialogue (Romme, 2003). The members need to participate in the discourse aimed at assessing the present system and making decisions about changes to be made, because they are the ones who will be implementing the change, and their involvement throughout the whole process is the only way to assure that the proposed changes will be perceived as useful and that they will be committed to them (Romme, 2003; Dunbar & Starbuck, 2006).

In summary, for organizational learning to be useful and applicable, there is a need for a perspective that could integrate the various approaches, while also explaining the relationship of organizational learning to organizational structure and the requirements for changing this structure. In other words, there is a need to relate organizational learning to organization design. However, for organization design to explain change, it needs to employ actual design mode in research, based on a process view of change that takes into account the history and unique context of the conditions in the organization and the role of dialectics and contradictions in driving change. Furthermore, such a design-based research also needs to invite the members of the researched organization to participate in the design process to ensure that the design will be useful for them and that they will implement it with conviction.

As mentioned previously, such an integrative perspective is offered by the theory of expansive learning. The integration of various organizational learning approaches and their relation to organizational structure and its changes is afforded by the focus of TEL on object-oriented activity systems as a basic unit of analysis (Virkkunen & Kuutti, 2000; Engeström & Kerosuo, 2007). Furthermore, the principles of mediation, historicity, and contradictions as sources of change afford the synthesizing view between organizational learning and organization design, while also acknowledging the importance of the ontogenesis of present conditions in any change initiatives (Engeström, 2015; Engeström, 2016). Finally, the use of an interventionist research methodology and the corresponding recognition of transformative agency of individual members of the organization for the success of such change interventions fulfill the need for a participatory methodology in design-based research (Engeström, 2015; Haapasaari et al., 2016). Thus, TEL can be seen both as a theory of organizational learning and of organization design, and as such offers a valuable integrating perspective on the two fields.

The next section will now introduce the second theoretical grounding of the object of this study, i.e. research on self-managed organizations. Though the theory of expansive learning has been increasingly applied in studying work and organizations in different contexts and locations, it has not yet been applied to the study of this specific object. Therefore, the key concepts of organization design used in describing and analyzing organizational forms will first be explained. Then, the specific features of self-managed organizations will be presented.

2.2 Self-managed organizations as objects of research

Though self-managed organizations arguably represent novel forms of organizing, existing organizational theories are still well equipped to analyze them (Van de Ven et al., 2013; Puranam et al., 2014). Therefore, this section will first discuss the key concepts of the field of organization design used for conceptualizing and analyzing organizations and their design in general, before proceeding to discussing the defining characteristics of self-managed organizations in particular.

2.2.1 Key concepts of organization design

In organization design, organizations are usually defined as "(1) a multiagent system with (2) identifiable boundaries and (3) system-level goals (purpose) toward which (4) the constituent agent's efforts are expected to make a contribution" (Puranam et al., 2014, p. 163). These goals can be explicit or implicit, they don't have to be identical to the goals of the constituent agents – indeed, the agents need not even be aware of them – but the agents are better able to achieve them through collaboration. As such, these goals express the purpose of

the organization and coupled with membership jointly identify the organization (Puranam et al., 2014). Notably, this definition of an organization is applicable at various levels of analysis – what is formally regarded as an organization can in fact encompass many such organizations as defined above, ranging in scale from two members to tens of thousands (Puranam, 2017). In other words, the concept of organization covers many kinds of groups, from individual teams to networks of companies.

Furthemore, the human agents making up organizations are usually assumed to be boundedly rational, i.e. have limited capacity to access and process information, and self-interested, i.e. require some kind of compensation for their work. This implies that regardless of their specific goals, all organizations made up by such agents have to come up with solutions to certain universal problems of organizing – according to Puranam et al. (2014), these are **division of labor**, which can be further deconstructed into **task division** (identifying the tasks to be performed and dividing them into sub-tasks) and **task allocation** (deciding who should perform the identified tasks), and **integration of effort**, which can be further deconstructed into **information provision** (ensuring that everyone has access to the information they need to perform their work and coordinate with others effectively) and **reward provision** (making sure that everyone is incentivized to cooperate with other members of the organization). Martela (2019) also further differentiates information provision into **providing direction** and **ensuring coordination**, and reward provision into **rewarding desired behavior** and **punishing free-riding**.

Every organization is by definition making choices regarding these problems, because these problems are implicit in the definition of an organization and the two assumptions about human agents – not making an explicit choice still means choosing the default emergent solution. Moreover, solving the universal problems or organizing is precisely the mechanism through which organizations provide their members with the benefits of collaboration (Puranam et al., 2014).

However, organizations do not exist in a vacuum. In the perspective of contingency theory, it's the fit between an organization's internal arrangements and external environment that determines the organization's performance (Van de Ven et al., 2013). The environment can be viewed as a set of external factors affecting an organization (Burton et al., 2020). These factors usually include the behavior of the given organization's suppliers, buyers, competitors, and regulators (Harmon, 2019; Puranam et al., 2012). However, the environment is not an objective entity to which the organization is merely reacting – it is also determined by the organization's choice of goals and strategy (Burton et al., 2020).

The environment is commonly conceptualized as a complex system (Van de Ven et at., 2013). As such, it can be described using the dimensions of complexity, unpredictability, and dynamism. Burton et al. (2020, p. 51) define **complexity** as "the number of factors in an organization's environment and their interdependency", and **unpredictability** as the measure of the "lack of understanding or ignorance of the environment in terms of the nature of the factors and their variance" where greater variance of these factors leads to less predictability or higher uncertainty. Puranam et al. (2012) also highlight **dynamism** of the environment, which they define simply as the rate of change.

The way these environmental attributes influence organization design is well expressed in the information-processing perspective. According to this view, everything an organization does can be seen as information processing (Burton et al., 2020). Even material tools and products can be seen as embodied information (Grant, 1996). In this perspective, higher complexity, unpredictability, and dynamism of the environment increase the demand on information processing done by the organization. The goal of organization design is thus to match the organization's information processing capabilities with this demand, by either lowering the demand or increasing the capabilities (Puranam et al., 2012; Burton et al., 2020).

To lower the demand on information processing, organizational designers can attempt to architect the division of labor and structure of incentives in a way that minimizes the need for coordination (Grant, 1996; Burton et al., 2020; Puranam et al., 2012). They can also aim for standardization of processes to reduce the amount of information processing coordination requires (Grant, 1996; Garud et al., 2008; Fjeldstad et al., 2012) However, for this approach to be effective, the designer has to possess sufficient architectural knowledge, i.e., understand the interdependencies between the tasks, agents, and rewards in the organization. As such, the application of this approach is going to be difficult in environments characterized by high complexity, uncertainty, and dynamism, where the availability of accurate architectural knowledge is limited (Puranam et al., 2012).

An increase in information processing capacity, on the other hand, can generally be achieved by leveraging technology and various forms of organizational learning, and by finding a better fit between the organization's structure and environment (Burton et al., 2020). That said, all these options are inextricably interwoven – technology both enables new design options for organizational structure and supports organizational learning (e.g., Kolbjørnsrud, 2018; Fjeldstad et al., 2012), but both technology and forms of organizing can be seen as products of organizational learning (Grant, 1996; Virkkunen & Newnham, 2013), and organizational structure also has consequences for organizational learning (Puranam et al., 2012; Engeström, 2015; Puranam & Maciejovsky, 2017). Organization design can thus never

be "complete" – it is as much a process as a state (Garud et al., 2008). Especially in environments characterized by high complexity, uncertainty, and dynamism, the adaptability of the design becomes of prime importance (Fjeldstad et al., 2012).

Moreover, in the last several decades it has become a truism that these are precisely the attributes of the current environment (e.g., Engeström, 2015; Fjeldstad et al., 2012; Garud et al., 2008; Harmon, 2019; Virkkunen & Newnham, 2013;). This is in large part because of the transformation into a knowledge economy, since knowledge grows exponentially – the more knowledge we have, the better we're able to produce even more knowledge (Adler, 2001; Brynjolfsson & McAfee, 2014). Additionally, people are increasingly requiring their work to be a source of meaning (Lee & Edmondson, 2017). This is reflective of a broader "Meaning Crisis" experienced in the global West, caused chiefly by the loss of tenability of a religious worldview and its downstream effects of increased difficulty in finding one's life meaningful, a degradation in connection to others, and erosion of trust in public institutions (Vervaeke et al., 2017.)

In this environment, traditional organizational forms struggle to adapt with sufficient agility and to properly use and generate knowledge, because hierarchical forms suffer from the filtering of information and delay in decision-making, while market forms fail at optimal production and allocation of a good such as knowledge, i.e., one that's both difficult to appropriate and that is not consumed with use (Grant, 1996; Adler, 2001; Engeström, 2008; Fjeldstad et al., 2012). Furthermore, hierarchical forms with their reliance on managerial authority are less intrinsically motivating as a workplace, which in turn can lead to lower performance and innovativeness of their employees (Martela & Kostamo, 2017), as well as lower employee commitment (Adler, 2001).

2.2.2 Design elements of self-managed organizations

This leads organizations to search for alternative solutions to the universal problems of organizing (Puranam et al., 2014; Martela, 2019). Such novel solutions converge on decentralization of decision-making authority and high levels of trust among the involved agents (Adler, 2001; Fjeldstad et al., 2012; Puranam et al., 2014; Lee & Edmondson, 2017; Martela, 2019).

Looking at the problems of organizing one by one, these "actor-oriented schemes" (Fjeldstad et al., 2012) commonly divide tasks in a completely **decentralized** manner, or with a central authority providing only a high-level task architecture or strategy. In either case, it is then up to individual agents to identify the tasks that need to be accomplished to achieve the

broad organizational goals. The task allocation then happens through **self-selection**, with the agents themselves deciding what they will work on (Puranam et al., 2014; Martela, 2019).

To enable such decentralization of authority while maintaining coordination, actor-oriented organizations rely on **information commons** for allowing all their members to access the information on division of labor (i.e., which tasks need to be done, how are they interrelated, and who is working on them) as well as the knowledge generated by other agents (Fjeldstad et al., 2012). As there is no one to limit access, such information commons are usually fully **transparent** and accessible to all members of the organization. Furthermore, there are shared rules and protocols guiding the use of these commons and the division of labor (Grant, 1996; Fjeldstad et al., 2012; Puranam et al., 2014; Kolbjørnsrud, 2018). This approach to coordination is largely enabled by the use of ICT (e.g., Martela, 2019; Burton et al., 2020).

Finally, in terms of reward provision, actor-oriented organizations differ from traditional approaches in their greater emphasis on shared values and norms and intrinsic motivation to prevent free-riding and make the work rewarding in itself (Fjeldstad et al. 2012; Puranam et al., 2014). Some organizations even use peer-based mechanisms to punish free-riding and determine the rewards for their members (Martela, 2019).

The benefits of such "actor-oriented" (Fjeldstad et al., 2012) forms of organizing may include improved organizational flexibility, responsiveness, and organizational learning, as well as increases in employee autonomy, work relations, job satisfaction, motivation, and organizational commitment. All of these contribute to higher performance and effectiveness on all levels, from individual to team, and organizational (Lee & Edmondson, 2017). Additionally, more actor-oriented organizations can reduce their middle-management levels and either decrease labor costs (Trkman, 2010; Fjeldstad, 2012) or offer higher wages to attract the required talent (Martela, 2019).

In practice, organizations often combine elements from the actor-oriented scheme with either hierarchical or market elements (or both), resulting in a hybrid form (Fjeldstad et al., 2012; Kolbjørnsrud, 2018). To distinguish radical approaches to decentralization of authority from incremental ones, Lee and Edmondson (2017, p. 39) define self-managing organizations (SMOs) as those that "*radically decentralize authority in a formal and systematic way throughout the organization.*"

Radical decentralization means that the reporting relationship between managers and subordinates is completely eliminated. Thus, instead of managers sharing only a part of their power, the agents within the SMO gain full discretion over all internal matters, from division

of labor, through allocation of resources and rewards, to hiring and firing (Lee & Edmondson, 2017; Martela, 2019).

However, elements of managerial authority can still be vested into individuals or groups, but only on a peer-based basis, following explicitly defined rules or principles, codified in a formal system available to all members of the organization. This is the meaning of the requirement to decentralize authority in a formal and systematic way. Its purpose is to prevent the reversion of the decentralization by managers when they no longer favor it (Lee & Edmondson, 2017; Martela, 2019).

Finally, the requirement for the decentralization of authority throughout the organization means that the formal rules are not limited only to certain pockets (e.g., self-managed teams) or levels of the organization but apply to everyone (Lee & Edmondson, 2017; Martela, 2019).

The essential distinction implied by these three requirements relates to the way the rules are created and changed, and how exceptions are handled. In environments where the response for most situations can be programmed by stable rules, managerial authority is an appropriate mechanism for resolving the rare instances not covered by the rules, and hierarchical schemes can in fact have the best fit. However, in the modern environment described earlier, the exceptions become far too numerous and context-sensitive to be effectively handled by managers only (Adler, 2001; Engeström, 2008; Kolbjørnsrud, 2018). Self-managed organizations, therefore, rely on peer-based approaches to rules and exceptions. There are two main approaches found in the management literature:

- The **advice process**: In this approach, anyone in the organization can make any decision, under the condition that they first consult all relevant parties—those affected by the decision and those with relevant expertise. The initiator is not trying to achieve consensus, but rather, to uncover and consider all perspectives. After doing so, the initiator alone makes the decision (Laloux, 2014).
- Holacracy's structured **governance process**: In Holacracy, decision-making authority is granted to "roles", not individuals. Role descriptions cover areas of decision-making authority, consultation requirements, and responsibilities. One person commonly fills several roles, as they are usually narrowly defined. Both role descriptions and broader organizational rules can be adjusted during regular governance meetings, which involve groups of roles called "circles" (Robertson, 2015). The governance process in holacracies is essentially a more elaborate advice process (Laloux, 2014).

In summary, self-managed organizations are defined as radically decentralizing authority in a formal and systematic way throughout the organization. This means that it is typically up to each member of such an organization to identify the tasks the organization should work on, and choose what they will personally focus on. To facilitate coordination and cooperation, SMOs usually rely on transparent information commons and shared values, norms, and protocols. Since there are no managers to change the rules and make decisions concerning others, such decision-making relies on peer based approaches, with the two main approaches being the advice process and the governance process.

As such, self-managed organizations represent an object of study that could potentially bring interesting and valuable insights for the theory of expansive learning. First of all, the dependence of SMOs on the initiative of employees indicates that the employees should be exhibiting transformative agency, which is the most important outcome of expansive learning (Engeström, 2016). This, in addition with the radically decentralized authority and peer-based decision making, points to the possibility that evidence could be found of expansive learning happening in SMOs on an ongoing basis. Moreover, no studies of expansive learning in SMOs have been found during the literature search, indicating a significant research gap. Finally, as discussed in section 2.1.2, filling this research gap could also help bridge the relevance gap found in organization design research, by providing accounts of attempts to alter the design of an organization, inherently found in many activity-theoretical studies.

3 Methodology

3.1 Research setting

3.1.1 Oima's historical development

Oima was founded in the year 2011 under the name SuoraTyö (DirectWork), offering a platform for the management of employment relationships for households and micro-entrepreneurs. Over time, the company shifted its focus towards the facilitation of employment relationships in personal assistance, i.e. helping handle payments for nurses assisting clients in their homes. In 2020, partly as a response to the Covid-19 pandemic, a different kind of change occurred when SuoraTyö also decided to transform its organizational model from a traditional hierarchy based on the managerial authority and function-based teams to the so-called Teal model revolving around self-management. To reflect both of these changes in direction, SuoraTyö rebranded itself to Oima.

In January 2023 a reform in the organization of public healthcare, social welfare, and rescue services took place in Finland. With this reform, the responsibility for organizing such services was transferred from municipalities to self-governing administrative bodies called "wellbeing services counties" (or "wellbeing counties" as in this study). The key objective of the reform is to improve the availability and quality of basic public services throughout Finland (https://stm.fi/en/wellbeing-services-counties). In practice, for example, healthcare assistance for older people and people with disabilities is organized and paid for by the well-being counties. The well-being counties then hire nurses as independent contractors rather than as regular employees, with the nurses invoicing the counties based on services provided to the patients. The Oima platform helps handle these payments, and Oima's representatives participated in shaping the reform.

3.1.2 Oima's organizational design – Teal

The Teal model is based on the book Reinventing Organizations by Frederick Laloux (2014). Inspired by the work of the philosopher Ken Wilber, the book outlines several "developmental stages" of organizations, with Teal being the most advanced. The key features of Teal companies are **self-management** (everyone can make any decision related to their work, provided they follow the "advice process," i.e. first seeking input from those affected by or having expertise in the decision), **wholeness** (employees don't have to separate their "work" and "real" selves, they are invited to be fully authentic), and **evolutionary purpose** (instead of defining a top-down strategy, the direction of the organization can evolve through the applied collective intelligence of its members).

Oima's website states that "Teal stands for decentralization and transparency in decision-making." The company blog emphasizes trust as a key prerequisite for self-management, and "transparency from work, processes and individuals alike" as key enablers for trust, along with qualities like responsibility, discipline, honesty, courage, and openness to making mistakes and learning from them (both one's own and others'). In practice, these values are reflected not only in practicing self-management but also for example, in complete transparency in everyone's salaries and the ability to influence these salaries.

3.1.3 Current situation

Today, Oima's workforce contains 35 employees, most of which are full-time employees. Several of these joined the company in the last year, as Oima first prepared and then adapted to the reform in healthcare, social welfare and rescue services, which resulted in the quadrupling of the number of users of Oima's platform. Apart from this transitional yet demanding process of adaptation which requires most of the employees to work longer hours, the company is also still somewhat adapting to the profound transformation to the Teal model which it underwent almost three years ago.

3.2 Research questions

Following the abductive method (Timmermans & Tavory, 2012), no explicit hypotheses were initially formed, although studying the literature about the theory of expansive learning and about self-managed organizations naturally led to an implicit hypothesis of SMOs undergoing continuous expansive learning. The research questions evolved during the abductive process, finally settling on the following:

1. What features of a self-managed organization does the studied organization manifest?
2. What are the elements of the activity system of the studied self-managed organization?
3. What indications of expansive learning can be identified in this organization?

3.3 Research methods

3.3.1 Data and data collection

Based on the research questions, an interview guide was constructed. The aim of the introductory section of the interview guide was to understand the role the interviewee holds in the company, as well as how they conceptualize the purpose of the company. The latter aim was meant to elicit first reflections on the object of their activity. The main section of the

interview guide aimed to explore the elements of the organization's activity, as well as the learning processes occurring and the factors enabling it. To achieve this, the questions revolved around the interviewees' experience with the Teal model, the specific self-management practices in the company, the individual factors required for employees to successfully function in a self-managed organization, and the tools and processes supporting learning in the company.

During data collection, seven employees were interviewed. The interviewees were selected and contacted by the employee who served as a contact person for the author. The selection was guided by trying to arrange interviews with representatives of various functions within the company and constrained by the willingness of the employees to participate in the research study. As Oima is a small company, their roles will not be revealed so as to preserve anonymity, but together they cover all the main functional specializations in the company.

The interviews were semi-structured, with duration ranging from 55 to 83 minutes. The interviews were conducted using primarily open-ended questions aimed at answering the research questions and at exploring in detail the relevant topics that emerged during the interview process. Thus, a traveler metaphor well describes their nature, where "The interviewer–traveler, in line with the original Latin meaning of conversation as ‘wandering together with’, walks along with the local inhabitants, asks questions and encourages them to tell their own stories of their lived world." (Brinkmann et al., 2018, p. 20).

Audio recordings of all the interviews were created. After data collection, the recordings were transcribed using the WhisperAI speech-to-text tool to generate the first version of the transcript, which was subsequently checked against the recordings and corrected.

3.3.2 Proceeding of the data analysis

This thesis used abductive thematic analysis as its methodological approach. Abduction is based on a dialectic between broad theoretical background and the gathered data (Timmermans & Tavory, 2012). The initial background informs the data collection, but this data should be gathered in as much interpretation-free way as possible (i.e. doing one's best not to "contaminate" the data with conclusions). The better this neutrality of data can be achieved, the better they can be later used for "alternative casing", i.e. re-analyzing the data with a new theoretical lens (ibid.). In fact, deliberately "puzzling over" data with different frameworks, looking for connections and anomalies, is the essence of abduction. This implies that after collecting the data and the initial analysis, the researcher keeps expanding their theoretical toolkit to gain new lenses that can help explain especially the "surprising discoveries" (ibid.). Thus, even with a single round of data collection, several rounds of cycling between analyzing

the data and studying the relevant literature can occur. This was the case with this thesis drawing from the previous literature on SMOs and applying activity theory as a theoretical-methodological lens.

At the heart of abduction lies the "conceptual leap" which is a consciously realized and abstract theoretical idea in an empirical study that may or may not make its way to a theoretical contribution in its final form." (Klag & Langley, 2013, p.2). The conceptual leap thus represents the bridge between empirical data and theory. However, it is not a one-time event or action but rather emerges from a process of engaging in several dialectics: deliberation and serendipity, engagement and detachment, knowing and not knowing, self-expression and social connection. Neither pole is sufficient by itself, it's exactly the back-and-forth that leads to the magic of conceptual leaps. Therefore, Klag and Langley (2013, p. 3) propose that it is more appropriate to speak of "conceptual leaping". As mentioned, the specific method used for such conceptual leaping in this study was thematic analysis.

Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data." (Braun & Clarke, 2006, p. 79). It is well suited for the purposes of this study as it is a flexible method that can be used within various theoretical frameworks, and as a method, it is not dependent on any specific framework. It uses a series of steps to arrive at a set of key themes found within the data, with themes capturing "something important about the data in relation to the research question" that represents "some level of patterned response or meaning within the data set" (ibid., p. 82).

Thematic analysis can employ either an inductive or a theory-driven approach, the former being "a process of coding the data without trying to fit it into a preexisting coding frame, or the researcher's analytic preconceptions" (ibid., p. 83) and the latter relying on a selected framework or frameworks to guide the (usually more in-depth) analysis.

Thematic analysis can also study different levels of data: a semantic approach studies the explicit or surface-level meanings, while an interpretative approach seeks to identify the latent "underlying ideas, assumptions, and conceptualizations" that are shaping the data at the semantic level (ibid. p. 84).

In this study, the thematic analysis was conducted using the semantic approach, i.e. looking for explicit meanings expressed by the interviewees (Braun & Clarke, 2006). The analysis was done in four main stages – the preliminary analysis plus a separate stage for each research question. The initial implicit analysis occurred as a natural by-product of the interview process that also steered the interviews as they were conducted. A second

preliminary round of thematic analysis was done as a by-product of the transcript correction. The four key themes that emerged were:

- The advice process as a key practice for initiating change and making decisions
- „Swarming" as a practice of dynamically forming groups aimed at solving a specific problem and dissolving them once that is achieved
- Organization of work as part of the object of activity of the SMO, leading to continuous expansive learning
- The importance of certain personal characteristics to support both expansive learning and swarming in the SMO

Based on these, I returned to studying the literature, especially additional sources on the theory of expansive learning. Then, several additional rounds of thematic analysis followed, using a mix of inductive and theory-driven semantic approaches (Braun & Clarke, 2019). The theory-driven analysis employed several conceptual tools drawn from the literature, to answer the three research questions.

To answer the first research question, the main interpretative lens was that of Lee & Edmondson's (2017) defining characteristics of SMOs, i.e. looking for mentions of explicitly defined rules of self-management throughout the organization. The lens of universal problems of organizing (Puranam et al., 2014) was also used, especially to identify mentions of reward provision, as the remaining problems of task division, task allocation, and information provision overlap with the defining characteristics of SMOs.

To respond to the second research question, activity theoretical tools of the activity system model (see Figure 1) and the concept of contradiction and their typology (defined on page 10) were applied as analytical tools (Engeström, 2015).

Looking at the use of the model of human activity in detail, references of the object were identified by looking for mentions of the purpose or motive of work, or mentions of what work entails in Oima. References of division of labor were identified in mentions of how managerial authority is distributed, including the decisions about task selection and allocation, creation and adjustments in rules, and provision of rewards. Additionally, the concept of knotworking (defined on page 13) was used to analyze the practice of swarming as an instance of collaboration taking place without rigid, predetermined rules or a fixed central authority. Mentions of rules, guidelines, values and norms regulating the behavior of Oima's employees were identified as references of the rules element. Mentions of software tools, conceptual

representations of the elements of activity, and individual competencies were identified as references of instruments.

The search for contradictions proceeded in two steps. First, the data was searched for mentions of dilemmas, conflicts, critical conflicts, or double binds (Engeström & Sannino, 2011), as well as for the interviewees directly reflecting on contradictions. Then, these instances were classified according to the typology of contradictions (Engeström, 2015). If the contradiction manifested as an inner conflict within one element of the activity, it was classified as primary. If it appeared between two elements of the activity, it was classified as secondary. If the contradiction existed between the elements of an older form of activity and those of a newer, more advanced one, it was classified as tertiary. Lastly, contradictions manifesting between the elements of two or more interconnected activities were classified as quaternary.

Finally, to answer the third research question, the data was searched for various outcomes, correlates, and preconditions of expansive learning. This step proceeded in several loops of abductive analysis – the findings of the first two research questions were being compared to the literature on expansive learning throughout the work on this thesis, rather than looking for instances of specific phenomena in the data. That said, the concepts of the cycle of expansive learning (see Figure 2) and transformative agency (defined in page 13) proved particularly fruitful as tools of interpretation.

3.3.3 Research quality criteria

In this study, the following ways of fulfilling the criteria of quality in qualitative research (Tracy, 2010) were aimed for:

- **Worthy topic:** As discussed above, SMOs are a viable option for responding to the demands of the modern environment on organizations. As there is a dearth of activity-theoretical studies of SMOs, the combination of the theoretical lens and object of study of this thesis can contribute both to the field of activity theory and organization design.
- **Rich rigor** and **credibility**: the seven interviewees represent 20% of the company workforce together covering all the key functional specializations in the company, and are thus a representative sample. Furthermore, many rich data excerpts are used throughout the results section.
- **Sincerity**: a detailed account of the proceedings of the data gathering and analysis has been provided, along with the reflection of how were the criteria of quality in qualitative researched fulfilled, as presented in this section

- **Resonance** and **significant contribution**: due to the universal applicability of the theory of expansive learning and the increasing popularity of SMOs, the findings of this study could prove useful in many contexts. Due to the scope of a master thesis, the significance of contributions is limited, but hopefully not non-existent, given the worthiness of the topic.
- **Ethical**: the scope of the interviews and data privacy were agreed on before the interviews took place. As the interviews didn't delve into sensitive topics, no special measures were required to keep the process within the bounds of situational, relational, and exiting ethical, but special care was paid to make the interviewees feel at ease, for example explaining that the audio recordings will only be shared with members of the research group when an interviewee expressed shyness about being recorded.
- **Meaningful coherence**: as discussed, the theory of expansive learning is a viable lens for studying SMOs, and thematic abductive analysis is an appropriate method for the stated research questions.

4 Findings

Next, this findings section will proceed in the two following steps. The first section will provide answers to the first research question by giving an overview of Oima as a self-managed organization and depicts its key enabling factors. The second section will address the second and the third research questions by reporting an analysis of the elements of the activity system and expansive learning actions taken at Oima. The main findings will be illustrated by providing anonymized excerpts from the interviews.

4.1 Oima as a self-managed organization

Oima practices radical self-management as defined by Lee & Edmondson (2017) – the authority is distributed throughout the organization, with the rules being captured in the company "playbook". This means that everyone is able to make any kind of decision, provided they follow certain procedures and principles.

In terms of division of labor, this means that anyone can work on any task they want, as long as they are able to justify their allocation of time to others. There are no static job positions (though such titles are still used for simplicity's sake when communicating with customers), employees can choose what they want their work day to look like.

This enables Oima's foundational collaborative practice they call “swarming”: when one employee identifies a task where input from others is required, they will ask for help. Others who are interested in the task – either because it affects their own work or simply because they find it interesting in itself – can join and a temporary project group or "swarm" is formed. Additionally, the participation of employees with competences essential for the swarm's goal can be requested. This enables Oima to address problems faster and better, as anyone who recognizes the problem as sufficiently important can join, thus making more resources available for the swarm, both in terms of the number of individual participants and in terms of the variety of their perspectives and competences.

The ability to choose one's tasks represents in a sense a special class of decisions – one where each employee makes a decision only for themselves and their own resources (their time, energy, etc.). As such, these decisions are simpler and don't need to follow many principles. The rest of the decisions, those that in some way affect others than just the decision maker (e.g. use of company resources, shared rules and protocols, etc.), require more structure. This takes the form of the "advice process" practiced in other Teal organizations – when making a decision, key stakeholders need to be consulted and their perspective given a serious consideration. An important tool for this process is the Slack software, where all proposals for

collective decisions have to be announced, so that others can provide their feedback. Provided the proposer of the new decision meets these conditions, they "earn" the authority to make the decision without having to reach some quota for consensus. This is then announced in a separate Slack channel along with the reasoning behind the decision. The Slack channel thus serves both to notify everyone of newly passed decisions, and to document and archive these decisions and reasoning, so that they can be revisited and reviewed in the future.

This decentralization of authority in decisions about both individual and collective matters could naturally result in problems with integration of effort. In terms of choosing what to work on, necessary-but-unpopular tasks could remain undone. In terms of collective decisions, a decision could technically be passed that the majority of the stakeholders disagrees with. In practice, however, this never happens, because of several guiding principles and values that are in place in Oima.

The first one of these is doing what's best for the company and for the clients, and trusting others that they share this aim, even when they criticize one's proposals. An important factor for this is a purpose-driven mindset, i.e. wanting to do good and have a positive impact. Here, Oima benefits from its product, ultimately helping people with disabilities, which helps attract employees with such a mindset, because they are able to see how their work benefits society. Taken together, these values of wanting to do good and trusting others have two important effects. First, the employees take responsibility even for unpopular tasks, because they are intrinsically motivated to do what needs to be done. Second, there is an atmosphere of "radical openness" in Oima, where people are not afraid to ask questions when they don't understand and speak up when they don't agree.

Another key factor is the culture of experimenting and learning from mistakes that are being cultivated in the company. The CEO, for example, likes to say that "nobody has made such expensive bad decisions as me, so don't worry about it." This helps the employees avoid perfectionism and risk-avoidance, which drives learning and innovation and also further strengthens trust, as people accept that everyone makes mistakes.

Taken together, these factors help the company not to get stuck in a deadlock (as could happen if full consensus was required) and adjust rules quickly, without creating undesirable conflict – through the advice process, the proposer either realizes that the decision should better be dropped, or they are able to arrive to a "safe-to-try" version of the proposal.

4.2 The activity system of Oima

The previous section broadly describes Oima as a self-managed organization (Puranam et al., 2014; Martela, 2019): task division and task allocation happen through self-selection and self-allocation, provision of information relies on transparency and utilizes technology "infrastructure" (Fjeldstadt et al., 2012) in the form of Slack, and provision of rewards is largely based on shared norms and values and intrinsic motivation. This also starts to paint the picture visible from the activity-theoretical perspective, namely the elements of instruments, rules, community and division of labor. However, the essential element of every activity, its object, is still missing. This section will therefore start with describing the object of Oima's activity, making the case that it is multifaceted, containing the central productive activity itself. Then, the other elements of the activity system will be described. After that the challenges and contradictions hinted at by the interviewees will be reported. Finally, the expansive learning processes taking place in Oima will be introduced.

4.2.1 Object of activity

When asked about the purpose of Oima, all the interviewees talk about making life easier for people in some way – making payment processing easier, making it more transparent, and saving the time spent on administrative tasks. As illustrated in the following excerpt, while Oima's primary customers are the wellbeing counties, the employees also reflect on the role of the platform for the broader ecosystem:

> **Interviewee 1**: *"In Oima platform, these [counties] can pay the salaries for the nurses, so that they can take care of these handicapped people or children that are in foster care, for example, and stuff like that. So, it's a link between the [county] and the nurses and workers who are working for the people."*

Because of this broader role, the employees are able to see their work as contributing to the whole society:

> **Interviewee 7:** *"I think that because of Oima's customer basis, when we are talking about personal assistance and fostering formal care, I think that we're working on areas that are really important and we can actually make an impact on Finnish society through those things."*

Furthermore, aligned with this noble and societally important purpose, the interviewees make an important conceptual distinction – the purpose of Oima is not simply about helping their primary customers cut costs, but to enable all the stakeholders (especially the nurses) to spend time on more meaningful activities (i.e. helping the patients):

Interviewee 4: *"We don't do it for the customers to be able to reduce the workforce. We are doing it to reduce bureaucracy and to be able to use the available time for the actual work they should be doing. Which is social services and not payroll. I guess that's the distinction. It wouldn't be very meaningful for me at least if our main thing was cost-cutting. Which is the purpose for quite a lot of software products."*

The previous excerpt also shows the blurry distinction in who are actually Oima's customers – whether it's the patients, wellbeing counties or the nurses. This serves as a further highlight of an important aspect of how the object of Oima's activity is conceptualized – the employees are aware of the primary contradiction in the object, between its use value and exchange value, between the aim to "do good" and to "get paid". Yet, they are seemingly aware that their object is shared with the activity systems of the patients and wellbeing counties, and also with the activity systems of the nurses. As all the above presented excerpts show, in a sense the primary contradiction of the object shared by the counties and nurses is itself the object of Oima, which in turn helps the employees remain aware of the omnipresence of this contradiction. This is most beautifully expressed by:

Interviewee 5: *"Life has to be half good, half business. (...) if you don't do business, you have no means to do good. And if you don't do good, you won't be able to wake up in the morning in the long term"*

The conceptualization of the outward-facing aspect of the object, or the object of the central, productive aspect of the activity, is already more expansive than that of "quite a lot of software products". But what really seems to be setting Oima apart as a self-managed organization is the inward-facing aspect, the object of the learning activity aspect of the total activity, which the interviewee 6 mentioned explicitly when asked about the purpose of Oima, while also confirming the awareness of the dual nature of the outward-facing aspect:

Interviewee 6: *"Our purpose is to help our customers in their daily tasks, like free their time that they can use their time better (...) And of course, we want to make profit for our owners because we are a company. And we also like, we want to be like this good environment to work for us so that everybody enjoys what they are doing and treats everybody nicely and stuff like that. So it's a nice place to work also. And we use a lot of our time to like always improving like our workplace."*

Interestingly, when asked about whether the three competing aspects of the object create tensions, the interviewee doesn't feel there is a conflict:

Researcher: *"Do you ever find that there's some kind of tension between any of these (...) three main points, three main purposes (...)?*

Interviewee 6: *I think they are like supportive of one another because when we are happy, it's easier for us to help our customers if we are feeling okay and we like our jobs and all the tasks that are included. And when we are doing a good job, it shows in the revenue as well. So I think they are more, like, supportive than, like, in like conflict with each other.*

(...)

Researcher: *So you don't feel like there are ever... like you have to choose between more profit or, I don't know, better serving the customers or being a better place for work.*

Interviewee 6: *I think that the good workplace is like, for me, it's like the number one goal. And secondly, of course, that could like bringing value to our customers and the profits just like follow.*

The way to resolve the contradictions is by considering them together and focusing primarily on the use value aspect of the object for the employees, that is, on being a "good workplace". A similar hierarchical ordering is mentioned by Interviewee 5:

Interviewee 5: *"I think the management and the processes are the bottom and [they] should support and give space and create value to [Oima's employees] so they can be a creative to our customers and so on and on top of the pyramid is the society".*

While not even mentioning profit in this excerpt, Interviewee 5 is the one who talked about life being "half good, half business", so they are clearly aware of all three aspects of the object. In summary, the employees of Oima conceptualize the object of their activity to contain simultaneously the need of the patients to get the help they require and of the well-being counties to secure this help, the need of the nurses to get paid, the needs of all the parties to minimize the administrative overhead, but also their own need for an engaging and supportive workplace. As the next two excerpts show, this multifaceted conception of the object informs, and in fact enables self-management and the distributed decision making in the organization:

Interviewee 4: *"You should be able to choose your work and have some kind of ability to understand the bigger targets or vision where the company is going and based on that information... Because of what higher level targets we have and what we are trying to achieve as a company or as OIMA, you should be able to manage yourself towards the... so that your work aligns with those shared targets."*

Interviewee 7: *"You kind of need to make sure that when you do something that the whole company benefits from that decision. Even though it would consider only you but you have to kind of make sure that it's not against Oima's values or the bigger picture."*

In practice, this also means the employees are taking the responsibility for changing the organization of work and how things are done when the need for change arises, in other words for continuously transforming the entire activity system, as the following two excerpts illustrate:

Interviewee 2: *"If some way how we do things seems, like, how we've done things seems like it's not good, then we change it (...) 'We've done things like this for a while now, what do you think? Does it work or not?' And, you know, if it doesn't, then we try something else."*

Interviewee 7: *"I think that one of the biggest perks in Teal is that we are not stuck with the rules. So that if we notice that something doesn't fit us anymore or a certain occasion or something, we can always make it change."*

To summarize, the overall object of Oima's activity is multifaceted including at least four specific objects: the patients, the wellbeing counties and the nurses (i.e. the outward-facing aspects of the objet) and the central productive activity of Oima itself (i.e. the inward-facing aspect). The employees are also aware of the primary contradictions of this complex object and are critically reflecting them. The remaining elements of Oima's activity system will now be described, starting with the division of labor.

4.2.2 Division of labor

Since Oima is a self-managed organization, there is no formal hierarchy and managerial authority is eliminated. However, certain managerial responsibilities – for example reporting to the owners – remained and the former managers naturally have more expertise in handling these, so they are usually the ones in charge of these issues. Similarly, most other employees retained their primary responsibilities in the areas where they worked prior to the transformation to Teal. Of these, the two main groups are software development and customer support, together including around 80% of Oima's employees.

What defines the division of labor at Oima is that the employees are not rigidly bound to any specific set of responsibilities – they can take on any task or set of responsibilities they like, provided that they make sure that their previous tasks are taken care of. This also enables them to craft their work role to as they want:

Interviewee 7: *"I don't think that if I was in a hierarchy company, I would have been able to build my daily work as having such a variety of jobs. I think that I like it a lot that my day isn't the same from day to day. I like that it changes quite a lot. And I've been getting, because of Teal, I've been able to take responsibility for things that in a hierarchical company I would have not been able to do. And it would basically mean that I would apply for a new position or something like that if working somewhere else. That is one of the biggest perks of working in a Teal company, when you realize that there is something that you're actually interested in or want to work on, you can actually just make it happen. You just have to organize other things so that they support it."*

This kind of freedom to choose one's work manifests itself in practice at Oima in so-called "swarms", i.e. dynamically formed groups aimed at solving a particular problem, that dissolve once their goal has been achieved. Anyone can join any swarm, based either on their interests or expertise. The following data excerpt provides an example of how "swarming" is defined and what it means in Oima:

Interviewee 5: *"There is no framework [for swarms] because in certain issues some ways of working work better and then the swarm defines the methods, they work how they do, they decide the responsibilities, they decide the deadlines."*

Swarming may thus be recognized as Oima's own variation of "negotiated knotworking", defined as a "rapidly pulsating, distributed, and partially improvised orchestration of collaborative performance between otherwise loosely connected actors" (Engeström, 2008, p. 194), with negotiation among these actors playing a central role for this mode of collaboration (Engeström, 2007). As the following excerpt shows this type of negotiated knotworking is especially useful when facing large scale development challenges, such as the transfer of health care and related services from municipalities to wellbeing counties.

Interviewee 5: *"This change of well-being counties this was an excellent example of swarming because there was no managed way to handle these surprises and huge workloads and stuff like that just people: 'hey I have skills I can help', and they just went together and there was a lot of people working on some issues and when they were done people went to different work."*

At Oima, being able to successfully practice knotworking is enabled by the multifaceted and at the same time shared object (Engeström & Pyörälä, 2021). This is because the shared object allows employees with different expertise and responsibilities to "swarm together",

which both improves the quality of the products and other outcomes of the collective activity, and helps the participants learn from each other about different aspects of the activity:

> **Interviewee 4**: *"If you have people from customer service [in a software development swarm], they actually use the product. So they have insight that developers most certainly do not have. And if you have the business owner who actually thinks about what we are selling to the customer, the kind of decisions about what needs to be in and what can be scoped out are always much better."*

Naturally, there are also sets of stable tasks and responsibilities that need to be worked on. These encourage a more static division of labor, but Oima is aiming at, and progressing towards using the swarming model even in these cases:

> **Interviewee 4**: *"We have quite a bit of those long-term, ongoing swarms that are not really swarms in a way. Because they are more like teams if the same people belong to that swarm for years. But more and more things are done by a dynamic set of people."*

Finally, the employees can even influence their own salary level. Formerly, any employee could propose a revision of their salary level to the dedicated swarm that handled these matter. As this was a swarm, anyone could join and voice their opinion. Moreover, as of the time of data collection, an experiment with letting every employee decide their salary level themselves was launching.

In summary, the division of labor in Oima revolves around the decentralization of managerial authority, meaning that every employee is responsible for deciding what to work on and for coordinating their own work, collaborating with others, and even setting their . This practice is mutually supportive of Oima's variation of knotworking called swarming.

4.2.3 Rules

In concordance with the research on self-managing organizations, rules are the primary mechanism of coordination in Oima. In a sense, the rules are imbued with the authority previously held by managers. This created the need to explicitly articulate the rules, because there are no managers who could make case-by-case decisions. Because of this, there are more explicit rules than before. The key distinction, and a defining feature of a self-managed organization, is that the rules are created in a peer-based manner:

> **Interviewee 5**: *Self-organized organization needs more structures and rules than the traditional organization, the main difference is that they, the rules are made by people and they are dynamic*

This also means that the employees have to jointly, continuously, and critically reflect on the rules and change them when needed. That this is the case in Oima was shown when describing the inward-facing aspect of the object of Oima's activity. Therefore, the most important rule is the one stating how rules can be changed, also known as the advice process. The main steps of this advice process are largely the same as in other Teal organizations (Laloux, 2014):

- (1a) The employee considering the change (initiator) needs to consult or "get advice" from all the relevant stakeholders, i.e. those who would be affected by the decision and those with relevant expertise
- (1b) The initiator needs to announce the proposal for this decision on Slack and thus solicit feedback from others. This can happen after some preliminary discussion with colleagues, or it can be the start of the whole process.
- (2) The initiator duly investigates and considers all the perspectives. For simpler decisions, this can mean simply reading through the feedback received on Slack. For more complex ones, a swarm might be formed. The most complex decisions (such as when Oima was considering that employees would set their salary themselves) can even lead to a series of all-hands meetings where everyone is explicitly asked to give their opinion.
- (3) The initiator synthesizes the perspectives in a way they consider to be the best for the good of the company and all the affected colleagues.
- (4) The decision is announced on Slack, along with the reasoning behind it, and the playbook is updated.

However, at Oima, the rules refer to both "the explicit and implicit regulations, norms and conventions that constrain actions and interactions within the activity system." (Engeström, 1993, p. 67). The implicit regulations can also include trust as a coordinating mechanism Adler (2001). For the advice process to be a viable means of making decisions, high levels of trust are essential, as demonstrated in the two following excerpt:

> **Interviewee 6**: *"You have to trust [your coworkers] because we don't have managers who are like constantly checking on us. Like 'What have you done today?' 'What did you do last week?' You have to be able to trust that if I'm doing my work, so will my coworker do as well."*

> **Interviewee 5**: *"You need to let's say have a kind of trust in people they are professionals (...) if you have the trust mindset that 'The person next to me is professional, he or she can deal with this issue as well as i could', then it's easier to share the load"*

Finally, there are many rules with a narrower scope that guide the employees in their work and facilitate coordination. These include for example the obligation of new employees to familiarize themselves with the playbook, the obligation of everyone to improve dysfunctional rules, or the joint responsibility of everyone for everyone's wellbeing. In addition, several of these are guiding specifically how swarming is supposed to be done, specifying for example the responsibility of swarms to communicate their goals and provide monthly progress reports, the prohibition on non-constructively criticizing what a swarm is doing without actively contributing (constructive criticism is fine), or the responsibility of swarms to reflect on their work once their targets have been met, and to officially disband afterward.

In summary, rules have a central role in coordination in Oima. The most important rules are the advice process and the norm that all activities should be based on trust. The advice process describes how decisions are made in Oima, including decisions about creating or changing the rules. Trust is a norm regulating all interactions and a necessary prerequisite for the use of the advice process. Other rules address the responsibilities of employees and the functioning of the swarms.

4.2.4 Instruments

Regarding instruments, Oima uses Slack software as its primary communication tool. This is an instant messaging platform that enables easy creation of separate "channels", into which communication about different topics can be sorted. Thus, every swarm has its own channel and there are also separate channels for announcing change proposals and soliciting feedback, for announcing the finalized decisions, and even for simply complaining about anything that an employee feels frustrated with. Because all the communication is automatically saved, Slack also has a documentation function. Crucially, all the channels are available to all the employees, turning Slack into the infrastructure for truly transparent information commons. As such, Slack is also the medium through which the employees often learn about new swarms and new decisions.

Additionally, the development team uses the Jira software for organizing tasks and "sprints" as the main framework for prioritization. The sprints revolve around a weekly prioritization meeting, where every developer as well as anyone else from the organization who joins the meeting can voice their opinion about which main tasks, called "epics" should have priority for the next week. The epics are then broken down into sub-tasks called "stories", and developers self-assign based on the priority and on which tasks they find the most interesting. Though such a framework might appear too loose, it was explicated in the interviews that it works well, both without enforcement and without losing sight of priorities:

Interviewee 3: *"There almost always is something that is high priority, but it is big enough of a basically pool that there is something for everyone. So we have at least five big, you call them epics that we are doing at the same time. So in some of them, there is always something that you can do. And I don't think I have been required to do something that I really didn't want in a long, long time."*

After the prioritization meeting, the identified tasks, their priority level, and responsible developers are captured in Jira. The software also enables the developers to monitor the status of the tasks, i.e. whether a task is waiting to be started, being worked on, or being reviewed. Together, these features help the developers keep track of what to work on next, allowing for example those who finish their weekly tasks earlier to help those who are still working on theirs. As such, for the developers, Jira is another important piece of transparency-enabling infrastructure.

Oima also has its own "playbook". This is a living, continuously updated digital document describing how Oima is implementing the Teal approach to organizing, including both the fundamental values and principles as well as the rules and agreements that come out of the advice process.

Interviewee 4: *"We have a playbook that actually tells you how to function in OIMA. It includes the introduction to Teal and how we actually follow Teal and information about benefits and salary and tools and kind of working conditions. How many days of sick pay you get. All of that is related to how we work in OIMA. (...) If something changes or something new comes up, we just update the playbook at that time."*

As such, the playbook also serves as the formal representation of the rules of self-management that Lee & Edmondson (2017) identify as one of the key features of an SMO. Additionally, the playbook serves as an important learning resource for new employees and even as a tool for resolving conflicts more smoothly:

Interviewee 5: *"[The playbook is] also a tool to give feedback to people, that if somebody's is acting against playbook you don't need to be the kind of nasty person, giving the 'hey we have agreed that we work this way and and you did this do you want to adjust the playbook or is there some reason behind it?' "*

In organizations, instruments can also refer to the skills and knowledge that individuals use to transform the object (Engeström, 2000). As mentioned before, instruments can additionally have the form of signs, i.e. "psychological tools that people use to control their own psychological processes, behaviors, and social interactions" (Virkkunen & Newnham,

2013, p. 39). Of these types of instruments, the competencies seen by the participants as important for successful functioning in a self-managed organization include:

- "a purpose-driven mindset", i.e. wanting to "achieve great things with a great team" (Participant 5)
- self-directedness, initiative, and responsibility
- courage to voice disagreement, to ask questions, and also to protect one's boundaries and ask for help
- openness to experiment and make mistakes, and the ability to reflect on them and learn from them
- discipline and self-organization

Finally, representations of the aspects of the division of labor, rules, and instruments described can also function as instruments. As Engeström (2015, p. 99) writes "The essential instruments of learning activity are models." However, they only take on this function when they are "transformed into an instrumental concept, critically reflected, molded, and applied" (Engeström, 2015, p. 185) in the process of re-creating these representations. That such reflection and molding is happening with the elements of Oima's activity system is evidenced both by the dynamic nature of the documentation done in Slack and in the playbook, and by regularly discussing the key values and principles:

> **Interviewee 5:** *"We have actually this kind of monthly sessions it's everybody's invited and we try to handle all these difficult things (...) and we start that discussion always with saying that we need to remember that we are trying to do good and if somebody's frustrated we need to understand that this is the framework behind, we are trying to find more experiments to try."*

To summarize, the main instruments in Oima include digital tools, and competencies of the employees required for self-management, and representations of the elements of the activity system. The first of the key digital tools is Slack, which is used for communication and for proposing new decisions, gathering feedback, announcing the decisions, and archiving them. The developers also use Jira to support coordination. The third key digital tool is the company playbook, a living document with the rules and values of Oima. The individual competencies include a purpose-driven mindset, self-directedness, courage, openness to learning from mistakes, and self-organization. The employees also create representations of other elements of the activity system to facilitate critically reflecting on the elements and change them if needed.

4.2.5 Subject and Community

The subject represents simply the individual or group who's perspective is considered, while the community represents other individuals or groups sharing the same object. Since the analysis of this thesis focused on Oima as a whole, and for the sake of keeping the anonymity of the research subjects, the subject-related issues are not revealed. Thus, the community involves everyone in the Oima organization, and any member of this community can be taken as the subject. A graphical representation of Oima's activity system can now be depicted in Figure 3.

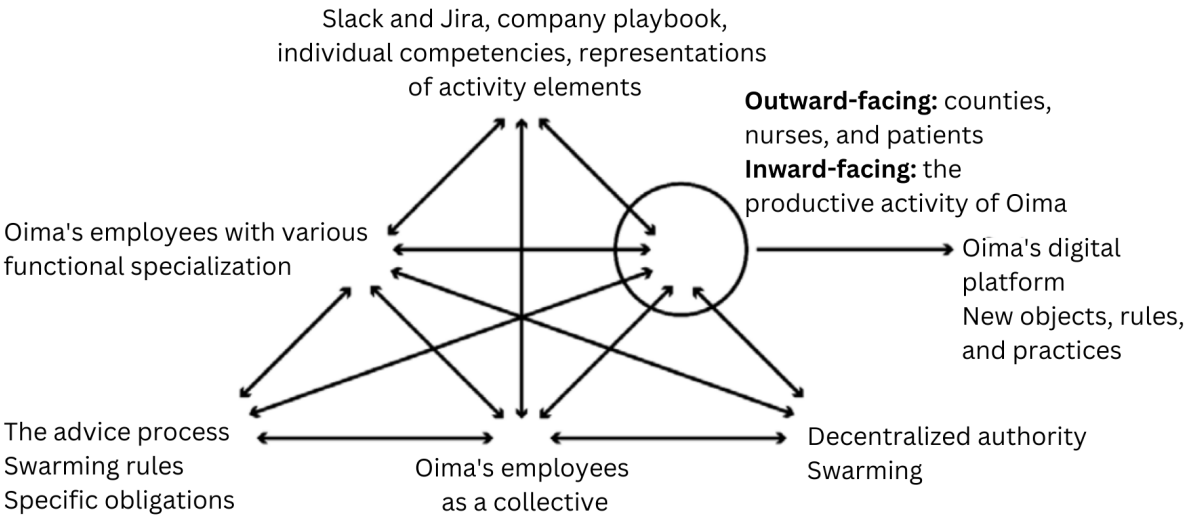

Figure 3: The model of Oima's activity system

4.2.6 Contradictions of the activity system

It is important to note that Oima's transformation to a self-managed organization has not taken place without tensions. Despite the fact that Oima underwent the transformation to a self-managed organization only two years ago, the contradictions depicted in the interviewees' talk are historically evolved (see Engeström & Sannino, 2011). The contradictions manifested primarily as dilemmas, i.e. expressions of "incompatible evaluations, either between people or within the discourse of a single person", and conflicts, i.e. "resistance, disagreement, argument and criticism" (Engeström & Sannino, 2011, p. 373). Additionally, some interviewees reflected directly on the primary contradictions within the object, as described in the section on the object of Oima's activity.

The most prominent contradictions in the activity system of Oima seem to be tertiary, i.e. stemming from the requirements of the old and new ways of working, between the limited old

object and the expanded new object which includes the activity system itself. In the old form of the activity, managers were responsible for dividing and coordinating work, the community was functionally divided into teams, and domain expertise was the main required instrument. In the new activity system, everyone is responsible for choosing their work and for creating rules to coordinate with others, the community is one unified substrate from which swarms are dynamically formed, and domain expertise needs to be supplemented abilities like initiative and courage. This is a significantly demanding transformation which the company is still adjusting to, and that some employees are struggling with:

> **Interviewee 4:** *"Well, at least not everybody is so into Teal yet, and I think there's even a small part of resistance that they don't want to be that Teal. That's of course not the best of things for OIMA and probably also not the best of things for those people, but you can also kind of get around if you have a couple of guys that are not that into the whole self-management thing."*

> **Interviewee 7:** *"I think that safety is a big part and kind of that [the employees not on board with Teal] might not want to take the responsibility that comes within decisions. So they feel better that someone else presents the ideas or makes the final decision."*

Additionally, contradictions are manifesting in the more advanced, self-managed form of activity as well. The first one of these can be depicted between the division of labor and instruments, specifically between the self-allocation of employees to tasks, and the tools enabling transparency in who is working on what. Among the developers, this transparency is achieved by the use of Jira, but the rest of the company doesn't use any such system. This contradiction is also mirrored in the inherent tension between trust and control in the norms for collaboration. The consequences of this are situations where some employees are getting overwhelmed by work, while others are contributing less than would be desirable:

> **Interviewee 4:** *"Some people do everything they are required of and work way too much extra time. And some people just, those work items that don't fit into their week, they just push back. Even though somebody might be waiting for those outcomes. (...) [There is] not too much visibility on what different people have on their table already."*

Furthermore, there is a contradiction in the division of labor between the use of dynamic and static swarms. This stems from the fact that on the one hand, dynamic swarms are the preferred approach to work which enables fast problem-solving by a group of employees with diverse expertise, while also facilitating learning among them and increasing their

understanding of the overall activity in the longer term. In the short-term, however, static swarms with stable members are a more efficient means of addressing recurrent tasks, for example reporting to the owners. The following excerpt was already shown to illustrate the progression of division of labor from static groups to dynamic swarms. However, it also highlights that some of the recurrent tasks incline the responsible swarms to remain unchanging:

> **Interviewee 4:** *"We have quite a bit of those long-term, ongoing swarms that are not really swarms in a way. Because they are more like teams. If the same people belong to that swarm for years. But more and more things are done by a dynamic set of people."*

In fact, this contradiction seems to be compounded by the concept of swarms being used both for the stable groups and the dynamically-formed groups, i.e. by a secondary contradiction between a conceptual instrument and a practice of division of labor. It's important to note that only the latter type of swarms represents a form of knotworking. However, stable groups seem to also have their proper use, as certain areas of responsibility cannot define sensible deadlines or final outcomes. But when these are treated as swarms and aimed at reaching a final outcome instead of building processes, such groups can lose all momentum and "die":

> **Interviewee 4:** *"We have lots of swarms that are kind of long-standing like employee welfare has been going on for a long time. I think actually it might be dead because I haven't heard anything in at least half a year or so. I don't know if there are any active people there anymore. But in a way that might be another reason why even that swarm should have a kind of deadline. But on the other hand, you cannot solve employee welfare and just stop doing it."*

Finally, a quaternary contradiction can be depicted between the objects of the central activity and the learning activity. As mentioned above, these are united in Oima's multifaceted object, with employees seeing their activities and objects as mutually supportive. This shared understanding of the object is also supported by the rules that link the central and learning aspects of the total activity together, and by the instruments (especially Slack) that make this link easily accessible for the employees. Nevertheless, this quaternary contradiction manifests as the employees sometimes not following the rules that are aimed for mastering the activity, because these can sometimes be seen as extra burdens. These disturbances can also be thought of as a contradiction between the objects of swarms and the rules about swarming. As

previously mentioned, swarms are officially required to set and communicate their goals and deadlines, to reflect on their work once these are reached, and to disband afterward. As the following excerpt reveals, in practice, the rules are not always followed:

> **Interviewee 4:** *"The kind of planning for the swarm to disband because it's not needed anymore, that's missing a bit at the moment. It kind of dissolves without actually making a decision that it's not needed anymore. I think it would be beneficial to actually have a closure and maybe also take a look back at whether everything went well and take some notes or best practices for next time."*

This might be compounded by contradictions in the objects of individual employees, specifically between the exchange value of protecting one's (self-)image and the use value of admitting mistakes and learning from them:

> **Interviewee 5:** *[A reflection] should be list of learnings rather than list of excuses and that's something we need to still learn. Let's say there's too often too many excuses and too little amount of learnings.*

In summary, the most prominent seem to be the tertiary contradictions stemming from the ongoing adjustment to self-management. Additionally, there are secondary contradictions between certain practices of self-management and the instruments used to support them, and between the rules and objects of swarms. The latter can also be seen as a minor manifestation of the quaternary contradiction between the central and the learning activity of Oima. Finally, primary contradictions can be identified in rules between trust and control, in division of labor between stable groups and dynamic swarms, and in the objects of individuals between protecting their image and denying their mistakes, and striving for growth and learning from the mistakes.

With the description of contradictions, the description of Oima's activity system has been concluded. The following section will address expansive learning in the organization.

4.3 Expansive learning at Oima

As mentioned before, expansive learning happens on both the micro and macro levels. In Oima’s case, multiple micro-cycles of expansive learning may be perceived from the interview data. Micro-cycles, however, do not necessarily lead to expansive learning but involve the

potential for it (Engeström, 1999). That said, the description of the activity system of Oima already hinted at the possibility of at least the expansive learning micro-cycles taking place in the organization, and at it happening on an ongoing basis. All the elements of the activity system influence expansive learning, so indications of expansive learning were visible in the description of all of these. This section will therefore summarize these indications and connect them to expansive learning explicitly.

The key to expansive learning is the reconceptualization and expansion of the object of collective activity. Such an object is simultaneously a product and prerequisite of expansive learning. The previous section demonstrated that Oima holds a strong potential for expansive learning as, for example, the employees see every rule and practice in Oima as open for questioning, development and change, and view themselves as being responsible for and empowered to make such a change happen.

The division of labor points to expansive learning in several ways. First, as a self-managed organization, Oima's activity is characterized by high complexity and low centralization of decision-making, which is indicative of mastery of expansive learning (Engeström, 1993). Moreover, self-management affords progressive mastery of the activity by both allowing and requiring the employees to take on more responsibility – when they notice an aspect of the activity is neglected or simply interesting to them, they can start engaging with it. Through that, they understand the aspect better, and thus become better able to transform this specific aspect and its surrounding context. A previous excerpt with Interviewee 7 talking about crafting their daily work is one illustration of this progressive mastery, a similar illustration is also the following:

> **Interviewee 2:** *As I work, you know, people teach me more and more, 'Hey, do you know how to do this, for example?' (...) And then they just show me and (...) I feel like I've learned, so much about, like, what's happened, so much about how things happen. And, you know, I still learn, like, new things on a daily basis.*

Furthermore, expansive learning revolves around the transformation of the subject of learning "from isolated individuals to collectives and networks" until "a new model of the activity encompasses all members and elements of the collective activity system." (Engeström, 2016, p. 44). Leveraging knotworking is one way of achieving such an inclusive transformation of the subject, and as has been shown, the swarming practice used in Oima is a version of this. The following excerpt illustrates how swarming seamlessly and dynamically transforms the individual subject into a collective one:

Interviewee 4: *"Mostly [a swarm] starts with one person who has a problem or need a party to make happen. Anything that needs more people than what you can do yourself. I think the most common way is to cry for help. 'I have a problem and I need people, any volunteers.' Sometimes there are decisions that the person is "you are coming, even though you are not volunteering, but we need you". So I guess it's kind of a call of action happens first."*

In regards to rules and expansive learning, the very structure of the advice process as practiced in Oima essentially mirrors the ideal-typical form of the expansive learning cycle. As the advice process demands the transformation of the subject from an individual employee to a group, it sets the conditions for the collective journey through the zone of proximal development. The steps of the advice process are recapitulated below, supplemented with steps (0) and (5) to capture the full expansive learning cycle as it typically happens in Oima. The corresponding stages of the expansive learning (micro-)cycle are in parentheses at the end of each step:

- (0) An employee realizes that some aspect of the organization of work is not working (questioning).
- (1a, 1b) They start discussing this aspect with colleagues – this can happen either during normal interactions, during meetings, or via Slack. Based on the discussions a proposal is submitted in Slack (analyzing, modeling).
- (2) Colleagues give additional feedback. In certain cases, a dedicated swarm might be formed to investigate the issue in depth (experimentation).
- (3, 4) The initiator considers all the feedback and makes the decision – this might involve setting a certain deadline and metrics for the experiment, but usually only for bigger decisions. With this step, the change becomes effective (implementation).
- (5) After some time has passed, the effects of the change might be reflected on and evaluated. Formally, this only happens with bigger experiments that had the deadline and metrics. Informally, this often happens simply by the change being accepted as the new standard, until some further adjustment is proposed (reflection, evaluation, and adoption)

What the advice process thus achieves is so crucial it bears repeating – the very implementation of the decentralization of decision-making requires the subject to be transformed into a collective one and guides it through the structure of the expansive learning cycle. As such, the advice process seeds every decision with the potential for expansive learning. The following excerpts summarize the process:

Interviewee 1: *"[The initiator] says in his first argument, like, 'I have this and this issue. I think it's like this and that, but I'm still hesitating and would like to discuss this and this topic. Could you please advise me? What should we do?' And then when he has had all the comments, he says, ' I'm very thankful for your answers and I'm summing up them and I'm preparing the final statement about this.' And then she or he makes the final statement, like, 'We are making this decision from this and because of this and this question.' So then everyone who wants to say and participate in this question has had their, like, ability to do that. And that makes this company, I think, very transparent and equal."*

Interviewee 3: *"Basically, you can ask for consultation and people can tell you what they think about it. And if there is enough of basically positive feedback you can do a trial so you can basically try for a month or two to see how it would work. It's your way and if it's good then it will be incorporated in our system. So it's a few paces and it might be pretty fast."*

As for instruments, the individual competencies described can be linked to expansive learning through the concept of transformative agency. As Engeström (2016, p. 74) writes "The most important outcome of expansive learning is agency – participants' ability and will to shape their activity systems." Though within the activity theoretical framework, transformative agency cannot be defined as a primary characteristic of an individual because it is analyzed in terms of actions rather than traits or abilities (Haapasaari et al., 2016), the competencies mentioned indicate that such expansive learning actions are taking place:

- The courage to voice disagreement and ask questions indicates the actions of criticizing and explicating
- The initiative, responsibility, and openness to experimenting, indicate the actions of envisioning, committing to actions, and taking actions

Furthermore, the presence of transformative agency can be seen in the fact that employees of Oima are aware of their agency in making decisions and initiating change, and they exercise it regularly:

Interviewee 1: *"I am very aware that I can question everyone from the company if I have questions, so I don't have to hesitate, that like 'can I write a message to CEO or is this is this too small question or...' I think that kind of barriers are away with the system."*

Interviewee 2: *"I can affect stuff that happens here in this job. I can affect, you know, things so much more than in a normal company. (...) I feel like you can be a part of the firm, like, much more."*

Interviewee 7: *"You have the responsibility, if something bothers you a lot, you are the person that can change it. (...) you kind of cannot complain about things that don't work, because you are the person that should be making the changes if you feel that something is not working."*

Additionally, the use of Slack helps resolve the quaternary contradiction between the central and learning activities by making engagement in the potentially expansive decision-making easy and transparent. As such, the very way Slack is used is an embodiment of the rules and values of Oima and of the transformative agency of its employees. It was also already shown that representations of the elements of Oima's activity are being actively reflected, molded, and applied. This being the case is a requirement for these representations to play the role of instruments of production rather than mere objects of consumption. Such an active process of creating shared representations is also a part of expansive learning (Engeström, 2015).

Finally, the whole transformation from a traditionally managed to a self-managed organization seems to itself be a case of expansive learning, as it has led to the expansion of the object that now includes the inward-facing aspect, as well as to many new work practices and instruments. Additionally, self-management is a response to the historically newer type of production of co-configuration which couldn't have been reached otherwise (Engeström, 2008). The company is still learning to deal with the challenges brought with this transformation through simultaneously mastering expansive learning:

Interviewee 5: "*If there's a disagreement sometimes, some decision could be changed or let's say adjusted (...) I really like actually this kind of disagreements because if there's a playbook adjustment or decision and there's an argument it's not actually between the people it's about the issue (...) but if these kind of small disagreements and tensions they are brought on the table and discussed, there's a lot of energy and when this discussion and this energy is kind of turned the same direction it actually sometimes gives you a big learning leap when you utilize this energy well, because if everybody agrees you never learn anything".*

To summarize, all the elements of Oima's activity system support expansive learning. The multifaceted object means that the total object includes the inward-facing aspect aimed at the central productive activity itself – in other words, the total activity includes both the central and learning activity. This in itself implies that expansive learning is taking place. Moreover, the object simultaneously requires and enables the decentralized division of labor, which leads to the transformation of the subject of learning from individuals to collectives through knotworking, and to a continuously progressing mastery of the activity by the subjects. These

can be seen as factors that prevent discontinuities in expansive learning. Furthermore, the rules for how decisions are made also invite the transformation of the subject, guiding them through what are essentially expansive learning micro-cycles (Engeström, 1999). While the division of labor can be seen as preventing discontinuities, the rules provide the impulse for expansive learning any time a decision is being made. In addition, the individual competencies described imply and support the actions of transformative agency. Slack and the company playbook then make the process of expansive learning easy to engage with, thus also serving as embodiments and representations of the transformative agency. They thus assist in assuring that all the elements of the activity are being constantly reflected, shaped, and recreated through the process of expansion, resulting in new practices and instruments. As such, Oima seems to demonstrate that in self-managed organizations, many prerequisites and correlates of expansive learning are in place, thus indicating the possibility that expansive learning is in SMOs happening on an ongoing basis.

5 Discussion

The discussion section will proceed in three sections. First, I will reflect the findings in terms of the three research questions posed and also discuss the interdependencies between the elements of Oima's activity system. Second, theoretical contribution of the thesis to the theory of expansive learning will be discussed. Finally, limitations of this study and opportunities for further research will be addressed.

The Findings section described the elements of the activity system of Oima including the main contradictions, as well as the aspects of expansive learning taking place in the organization, making the case that it is happening continuously. As was described, the foundation of the activity is the multifaceted shared object, which includes both the central productive activity revolving around Oima's digital platform and the expansive learning activity revolving around re-creating the central activity itself. In terms of the central activity the employees are actively reflecting the inherent primary contradictions of the object between its exchange value of making money and saving time and the use value of doing good and helping the nurses focus on the more meaningful aspects of their work and helping the clients receive better care. In terms of the learning activity, they are reflecting the tertiary contradictions between the object of the previous form of activity and the multifaceted object of self-management.

However, the object and all the other elements of the activity system are mutually interdependent – activity theory takes the entire activity as its basic unit of analysis, which means that all the elements have to be perceived as a unified whole (Engeström, 2015). Not only are all the elements simultaneously mutually enabling and constraining each other, they also always contain the seeds of future movement and changes in the form of contradictions. The activity system has to be seen as complex and dynamic. In a sense, the elements of Oima's activity make the grasping of its multifaceted object possible, while the object provides the elements with legitimacy and meaning.

The division of labor was shown to be characterized by decentralized managerial authority and knotworking can work on anything they want, and make any decision they want. This is what helps establish the shared expanded object. If the employees were "assigned" the object by management, the agency required for entering the collective zone of proximal development would likely be short-lived – the employees might either not feel much commitment to the assignment, or they might lose the commitment if they saw the managers lose theirs, as is often the case during crises (Foss, 2003; Engeström, 2016). The decentralized authority and knotworking thus help prevent such discontinuities in expansive learning. On the other hand,

without the object directing the attention towards the learning activity, self-management might only remain focused on the object of the central productive activity as is the case with some open-source communities (Puranam et al., 2014), without resulting in expansive learning.

Furthermore, both the object and the division of labor rely on several critical instruments that were discussed. First, as with other self-managed or actor-oriented organizations, a key enabling factor for Oima is that of technological infrastructure enabling transparent communication and coordination. The tools playing this role are Slack and the digital playbook, with Jira as an additional tool used by the developers. On the other hand, the object and division of labor shape how these tools are used, with for example separate channels in Slack existing for the stages of the decision-making process (the proposal and decision channels) and for all the active swarms.

It is difficult to overstate the importance of especially Slack for Oima. First, it makes participation in decision-making easy and transparent. This helps bridge the quaternary contradiction between the central and learning activities. Second, the way Slack is used embodies and signals the culture of Oima, especially the value it places on trust, responsibility, courage, and initiative – Slack affords the behavior characterized by these traits and every employee can observe when others demonstrate it and the agency it gives them. Third, Slack also helps unify and represent the object of the learning activity – it is not some nebulous notion of improving the workplace, but rather engagement in the discussions on Slack, guided by clear rules. In Oima, this aspect is perhaps not as important since the company is quite small, so it is easy for the employees to engage anyone else in a discussion about a certain decision in other means like meetings and spontaneous conversation. In larger organizations, however, having such a direct pathway to engaging in the advice process even with members one doesn't otherwise interact with and knowing that this is how decisions are made would likely be essential.

Additionally, the object and division of labor rely on the instruments in the form of individual competencies like courage and initiative, while simultaneously constituting the zone of proximal development that facilitates the development of these competencies. And last, the conceptual instruments of actively reflected and molded representations of all the elements of the activity enable expansive learning that transforms these elements, which then requires additional reflection and molding of the representations. In other words, thinking about the tools, rules, practices, goals, and values and articulating this thinking is what helps the employees change these elements, which then prompts more thinking and articulation.

Finally, all the elements are also mutually dependent on the rules and norms in Oima, with the two foundational regulations being the advice process and trust. The advice process guides how the decentralized authority is applied. Moreover, it does this through binding the collective reflection and re-shaping of the conceptual instruments with the exercise of the authority. In this way, the advice process seeds every decision with the potential for expansive learning. Trust is a key prerequisite for the decentralization of authority – without trust, there would be immense resistance to many decisions, or the employees would be getting overwhelmed because of their inability to share their work with others, or the managers wouldn't have opted for the transformation to self-management in the first place. On the other hand, it's the explication of the rules and norms in the company playbook and other instruments that protects them from gradual erosion, and it is the pro-social object and the experience with how the decentralized authority is used that help build trust.

Thus, the preceding section has recapitulated the findings about the elements of Oima's activity system and discussed their interdependencies. With this, the first research question has been answered.

Since activity theory studies the activity through studying its elements, the analysis of expansive learning going on in Oima, i.e. the analysis of the learning activity, was in essence a discussion of the results of the first research question. As such, the second research question was already answered earlier, making the case that expansive learning is indeed happening continuously.

This thesis has made a case for expansive learning in self-managed organizations like Oima happening on an ongoing basis. As such, its main theoretical contribution to the theory of expansive learning revolves around the topic of discontinuity. According to Engeström (2016), discontinuities in organizational transformation can be divided into two main categories. "Mundane discontinuities" are simple stoppages or cessations of a process, which can be rather difficult to spot and reflect on, because of their non-event nature – rather than intentional action, mundane discontinuities are a case of actions not happening anymore. This is a common occurrence especially with project-based transformations and learning efforts – once the project is finished, a discontinuity might appear until there is a sufficiently strong impulse for a new project. Such discontinuities can make it difficult for one project to build on the learnings and achievements of previous ones, and the overall transformation might thus come to a halt. Therefore, bridging these discontinuities – spanning "breaks and gaps in time and social space, between discrete projects or local efforts that have happened in the past or that may be taking place elsewhere in the organization" (Engeström, 2016, p. 175) – is a major challenge for the organization.

The second type of discontinuities is "directional" – these represent significant departures from the original aims of the change effort, changing its trajectory toward a historically different form of activity (ibid.). An example might be a transformation towards more autonomous, decentralized organization units being abandoned and the organization returning to the principles of a hierarchical bureacracy, or vice versa. Such discontinuities cannot be resolved with simple bridging actions – collaborative interventions of different stakeholders within the organization based on the analysis of cultural-historical context of the organization and modelling new possible directions are needed (ibid.).

Based on this distinction, expansive learning can be seen as both continuous and discontinuous (ibid.). Large cycles of expansion to a historically newer form of activity can span several years, and as such have to consist of several expansive cycles of smaller scope and shorter duration. Mundane discontinuities between the smaller cycles are to be expected and as long as bridging is done successfully, the larger cycle remains intact. As Engeström (2016, p. 187) writes "The theory of expansive learning embraces this discontinuity and at the same time wants to overcome it." The directional discontinuities, on the other hand, represent a break in the overall cycle and as such constitute a challenge that might only be overcome with radical (in the sense of addressing the cultural-historical roots of the problem) interventions (ibid.). Thus, successful expansive learning requires effective means of bridging the mundane discontinuities while avoiding the directional ones. The case of Oima as a self-managed organization presents several means of addressing this.

First of all, affording bridging actions to take place largely happens through the decentralization of managerial authority. As mentioned above, a problem with mundane discontinuities is the need for a sufficiently strong impulse for bridging to happen. However, in Oima anyone is empowered to initiate such action. Instead of relying on a handful of individuals – managers – to authorize new initiatives, employees can and are encouraged to start working on a problem as soon as they notice it and decide it's a good use of their time. Moreover, it was shown that through the advice process a swarm can spontaneously form around the initial investigation, instantly turning the questioning actions of one individual into a potentially expansive cycle. Thus, the threshold for the strength of the impulse required for bridging to happen is lowered to a minimum.

Additionally, Oima's use of Slack and the company playbook serve as a kind of organizational memory that helps individual change initiatives build on the outcomes of the previous ones. This is because Oima requires new decisions to include the summary of the perspectives considered and the reasoning that led to the final form of the decision. This elaboration is then posted and automatically saved in Slack, and if the decision adjusts some

aspect of how work is organized, the playbook is updated. Thus, Oima establishes a design trace, i.e. a documentation of "knowledge on who contributed what, when and why" to a design (Garud et al., 2008, p. 365), in this case the design of the organization. Such a design trace "serves as a locus of coordination as well as a point of departure" for future designs (ibid., p. 366), thus helping the decisions and change initiatives in Oima to build on their predecessors.

Oima also has several ways of preventing directional discontinuities. These are concrete instantiations of more general characteristics of self-managed organizations. The first of these is Oima's use of the company playbook as a formal representation of the explicit rules of self-management that Lee & Edmondson (2017) see as a defining feature of self-managed organizations. Though Oima is by law still required to have a CEO, who could thus in principle decide to return the company to a traditional hierarchical form, the explication of the rules in the playbook means this cannot happen insidiously, for example as a temporary response to a crisis that everyone "forgot" to reverse because there was insufficient support for doing so. The playbook serves as such a support – it signals commitment to self-management and the values underlying it (especially the trust in Oima's employees being competent professionals striving to do good for the company and society) and abolishing it would thus require a very convincing explanation if the trust of the employees was to be maintained. As such an explanation is hard to imagine, the playbook represents a key "ratchet" guarding against directional discontinuities.

The second ratchet is Oima's use of Slack, which represents the infrastructure that enables the employees to communicate with each other as well as access and contribute to the information commons of the organization (Fjeldstad et al., 2012). As was argued, such a transparent infrastructure serves as an additional embodiment of the values and principles of self-management. In Oima's case, it also lets the employees constantly witness and experience their own agency, thus constantly reinforcing self-management as the status quo and making it resistant to disruption. According to Engeström (2016, p. 198) "bridging must be done seriously, probably in successive waves that include the stabilization of the new model in material forms, such as buildings." Though neither Slack nor the playbook are as permanent and expansive as buildings, they nonetheless represent stabilizations of the model of self-management that couldn't be easily reversed.

In summary, this thesis contributes to the theory of expansive learning primarily through the findings related to bridging mundane discontinuities in expansive learning and preventing directional ones, making the case that in Oima and similar self-managed organizations, expansive learning is continuous. This is done by lowering the threshold for bridging actions through the use of self-management and knotworking, along with the use of the advice process as the approach to decision-making that turns every decision into a potentially expansive cycle,

and the use of Slack for keeping a design trace. Furthermore, this form of activity is guarded against directional discontinuities by the use of explicit rules of self-management (the company playbook) and transparent infrastructure (Slack). Both of these instruments serve as embodiments of the principles and values of self-management and thus as ratchets that prevent a significant departure from Oima's present form of activity.

5.1 Limitations and ethical considerations

The main limitations of the study relate to the limited amount of data collected. Only seven employees were interviewed – while these represent 20% of the company workforce of diverse specialization, more participants could provide even richer perspective. Especially lacking was the perspective of employees who are allegedly not "on board" with the self-management model. Though the contact person invited them to provide their account, they all refused. Furthermore, interviews are only one of a broad spectrum of data collection methods usually used in a fully expansive learning study. Additionally, the interviews were conducted in a period of one month (as schedules of the interviewees allowed), thus loosing the longitudinal perspective usually used in expansive learning research, with interventions spaced out over periods spanning up to several years. Together, these limitations are the main obstacle for drawing stronger conclusions about expansive learning happening in the organization on an ongoing basis. In addition, Oima is only one self-managed organization – to substantiate any claims made about self-managed organizations in general, more research grounded in the theory of expansive learning is needed. A minor limitation was also the need to conduct the interviews in english, with some of the interviewees remarking after the fact that their english was a bit rusty. It is therefore possible that a native Finnish spearer would have been able to collect richer data (though likely not by much).

My study strictly follows the ethical standards of scientific research set forth by the Finnish Advisory Board on Research Integrity, such as respecting research subjects' autonomy and doing no harm to them, as well as privacy and data protection principles. Before conducting the interviews I was given permissions to conduct this study from all the interviewees. The informants of this study are adults. I ensured that interviewees understood the voluntary nature of the interview process and that they had the right to withdraw from the interviews at any time.

The anonymity of participants was guaranteed by using participant numbers instead of names and changing other recognizable features of the participants during the reporting of the results.

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