Abstract

Motivated by the need to strengthen the logical and empirical adequacy of the theory of dynamic managerial capabilities, this study employed the theory elaboration approach to investigate how the largely unexplored phenomenon of dynamic managerial capabilities of front-line managers affects two organizations operating in a moderately dynamic context of the Norwegian municipal sector. By focusing on the entrepreneurial function embedded in the dynamic managerial capabilities of front-line managers, our findings revealed three additional dimensions of the established procedural typologies. Moreover, we also found that the identified capabilities and their underpinnings endowed the front-line managers with the attributes of entrepreneurship and leadership. These attributes led to high entrepreneurial performance at the bottom of the organization and allowed it to be more innovative and adaptable.
DO THE LOWER-LEVEL MANAGERS REALLY MATTER? A STUDY OF
DYNAMIC MANAGERIAL CAPABILITIES OF FRONT-LINE MANAGERS IN A
MODERATELY DYNAMIC CONTEXT

ABSTRACT
Motivated by the need to strengthen the logical and empirical adequacy of the theory of dynamic managerial capabilities, this study employed the theory elaboration approach to investigate how the largely unexplored phenomenon of dynamic managerial capabilities of front-line managers affects two organizations operating in a moderately dynamic context of the Norwegian municipal sector. By focusing on the entrepreneurial function embedded in the dynamic managerial capabilities of front-line managers, our findings revealed three additional dimensions of the established procedural typologies. Moreover, we also found that the identified capabilities and their underpinnings endowed the front-line managers with the attributes of entrepreneurship and leadership. These attributes led to high entrepreneurial performance at the bottom of the organization and allowed it to be more innovative and adaptable.

INTRODUCTION
The popular catchphrase of David J. Teece: “dynamic capabilities are about doing the right things, at the right time” (Teece, 2016: 210) illustrates well the importance of strong dynamic capabilities for organizations. It appears, however, that such a truism is even more apt for the related concept of dynamic managerial capabilities (Adner and Helfat, 2003), which focuses on how managers influence the strategic change and organizational performance through creating, extending, and modifying the resource base of the organization (Helfat and Martin, 2015). Since every organization and its external environment changes continuously (although with different pace), the managers are ceaselessly exposed to new, emerging opportunities and threats (Teece, 2016). As to create and capture value for the organization, the managers cannot wait and
passively respond to the encountered changes. They have to act, and timing is critical—some entrepreneurial opportunities, for example, may be worth exploiting only during a short period after their emergence. Therefore, the managers need to be able to actively sense the emerging opportunities, seize them using the appropriate business model, and transform the organization in such a manner that enables the exploitation of the identified opportunities (Teece, 2007; 2016).

To date, the literature on dynamic managerial capabilities has predominantly devoted its attention to clarifying the general concept of dynamic managerial capabilities and exploring its three core underpinnings, i.e., managerial cognition, managerial social capital, and managerial human capital (Helfat and Martin, 2015). Moreover, apart from few studies involving middle management (e.g., Eggers, 2012; Salvato, 2009), the vast majority of the conducted theoretical and empirical research has focused on dynamic managerial capabilities of the top managers and top management teams in businesses operating in rapidly changing environments (e.g., Helfat and Peteraf, 2015). Although, it is acknowledged that strong dynamic capabilities are vital for organizations operating in moderately dynamic environments to strategically change and adapt to the evolving environment (e.g., Pablo et al., 2007), hardly any study examined dynamic managerial capabilities in such contexts. In addition, despite the growing evidences that front-line managers are equally important for organizations to generate and implement entrepreneurial activities and entrepreneurial change as top and middle-level managers (e.g., Anzengruber et al., 2017; Teece, 2016), the extant literature has so far not offered any profound insights into the role and impact of dynamic managerial capabilities of front-line managers on organizational performance and strategic change.

Therefore, as to strengthen the logical and empirical adequacy of the theory of dynamic managerial capabilities, this study explores the nature, role, and impact of the dynamic managerial capabilities of front-line managers on organizations operating in a moderately
dynamic environment of the public sector. In doing so, we are guided by the following research question: “What are the dynamic managerial capabilities of front-line managers and how do they affect the strategic change and performance of the organizations operating in a moderately dynamic context?” We investigate this question employing the research approach of theory elaboration (Fisher and Aguinis, 2017), carrying out detailed case studies of 13 entrepreneurial projects from two Norwegian municipalities.

The contribution of this research is threefold. First, by focusing on the entrepreneurial function embedded in the dynamic managerial capabilities (Protogerou, Caloghirou, and Lioukas, 2012: 641) and by providing in-depth accounts of how the scarcely investigated dynamic managerial capabilities of front-line managers operate at the bottom of the organization and in a new setting of a moderately dynamic environment of the public sector, we revealed additional dimensions of the established procedural typologies of sensing, seizing, and reconfiguring (Helfat and Martin, 2015; Teece, 2007). We found that in the process of entrepreneurial opportunities’ exploitation, these typologies take the form of the interconnected capabilities to recognize opportunities (sensing), to develop and initially implement opportunities (seizing), and to perform organizational reconfigurations to exploit opportunities (reconfiguring). Such insights enrich our understanding of how the established procedural dimensions work in practice and to what extent they are interconnected (Schilke, Hu, and Helfat, 2018: 416).

Second, this study responds to increasingly voiced calls in recent literature for exploring the role and impact of dynamic managerial capabilities of front-line managers on strategic change and performance of the organization (e.g., Helfat and Peteraf, 2015; Teece, 2016). We found that the dynamic managerial capabilities of front-line managers are critical for the organizational strategic change and performance because they endow the front-line managers with the attributes of entrepreneurship and leadership, which lead to high entrepreneurial
performance at the lower echelons of the organization and allow the organization to be more innovative and adaptable. Our findings demonstrated that the possession of the identified in this study dynamic managerial capabilities enabled the front-line managers to recognize and exploit numerous promising entrepreneurial opportunities, which resulted in many relatively incremental organizational improvements. They also allowed the front-line managers to entrepreneurially respond to the ideas and problems, which were initially recognized by their superiors (Teece, 2016)

Third and related, this study adds to the conversation above by shedding some light on the multilevel nature of dynamic managerial capabilities of front-line managers (Helfat and Martin, 2015). We found that the front-line managers draw on the combination of the cognition and social capital underpinnings when they employ the identified dynamic managerial capabilities. Hence, the obtained findings further enrich our understanding of how and why the managers below the top executive level may affect strategic change (Helfat and Peteraf, 2015: 846).

THEORETICAL BACKGROUND

Dynamic Managerial Capabilities and Their Influence on the Organization

Since the early 2000s, the extant literature has acknowledged that dynamic capabilities are not solely the organizational level phenomenon, but also that they can reside with individual managers and teams of managers (Schilke et al., 2018; Teece, 2016). The seminal work of Adner and Helfat (2003: 1012) coined the term of “dynamic managerial capabilities” and emphasized that the managerial capabilities have a major impact on strategic change in the organization because they enable managers to “build, integrate, and reconfigure organizational resources and competences”.

These functions of dynamic managerial capabilities are closely related to Teece’s (2007: 1319) microfoundations of dynamic capabilities, which comprise three capacities, i.e., to sense
and shape opportunities, to seize these opportunities, and to reconfigure the organization’s resources. Although these three procedural dimensions were built at the organizational level of analysis, for the general concept of dynamic capabilities, the extant literature has shown that they can also be usefully applied to investigate dynamic managerial capabilities (Helfat and Martin, 2015). To date, a large number of studies have built on the established procedural typologies and argued that they enable managers to orchestrate the organizational assets in such a manner that leads to the successful adaptation of the organization to the changing environment, innovation, evolutionary fitness, and superior performance (e.g., Martin, 2011). Although, the relationship between the procedural dimensions of dynamic managerial capabilities and strategic change is well established, we still know relatively little about the established procedural dimensions themselves. Therefore, the extant literature has called for more research into how these dimensions work on the ground, how they are interconnected, and whether these dimensions may be refined or extended (Schilke et al., 2018: 416).

Our current understanding of processes related to sensing, seizing, and reconfiguring links the concept of dynamic managerial capabilities closely to entrepreneurship (Helfat and Martin, 2015). Evidence indicates that managers obtain these three capabilities when they take the role of an entrepreneur in the organization (Zahra, Sapienza, and Davidsson, 2006) and become entrepreneurial managers (Teece, 2007). Entrepreneurial managers develop the entrepreneurial and leadership skills as to be able to mobilize the necessary resources to pursue promising entrepreneurial opportunities and to convince the employees that the pursued opportunity is worth exploiting (Teece, 2016). By continuously doing so, they are not only able to improve or create new routines, they can also transform the organization and shape its environment (Teece, 2012). Thus, the extant literature indicates that because of the entrepreneurial character of dynamic managerial capabilities, managers can strategically change the organization and improve its performance.
Prior studies have documented some empirical evidences supporting the apparent importance of entrepreneurial management for strategic renewal (Teece, 2016). However, to date, their scope was almost exclusively restricted to investigating the role and impact of dynamic managerial capabilities of top managers on the organization (Helfat and Peteraf, 2015), particularly in rapidly changing environments (e.g., Peteraf and Reed, 2007). Numerous studies have demonstrated that dynamic managerial capabilities of top managers have a major impact (either positive or negative) on strategic change and renewal in the organization (e.g., Eggers and Kaplan, 2009), the process of asset orchestration (e.g., Martin, 2011), and the response to external changes (e.g., Adner and Helfat, 2003; Morrow et al., 2007). Moreover, there exists some evidences that dynamic managerial capabilities of middle managers play an important role in the processes of strategic change and performance improvement (e.g., Eggers, 2012; Salvato, 2009).

However, the literature on strategic management is yet to provide strong empirical evidences linking dynamic managerial capabilities with front-line managers (e.g., Helfat and Peteraf, 2015; Teece, 2016). Although in recent literature an increasing number of studies have found that front-line managers engage in strategic change-oriented activities (Ma and Seidl, 2018), in entrepreneurial behavior (Teece, 2016), and that their relations-oriented and change-oriented capabilities are equally important as task-oriented capabilities (Anzengruber et al., 2017), our understanding of the nature, role, and impact of dynamic managerial capabilities of front-line managers on the organization is still limited and requires further elaboration.

**Core Underpinnings of Dynamic Managerial Capabilities**

In their seminal article, Adner and Helfat (2003: 1013, 1020) demonstrated that dynamic managerial capabilities are rooted in three underlying factors: managerial cognition, social, and human capital. Managerial cognition comprises managerial beliefs, mental models, processes, and emotions (Helfat and Martin, 2015). Managerial social capital, in turn, refers to goodwill
originating from the fabric of formal and informal social relations, which managers possess, and which they can employ to obtain information, influence, and resources (Adler and Kwon, 2002). Lastly, managerial human capital consists of knowledge and skills that individuals develop over time and apply when they perform a task (Dimov, 2010).

The extant literature has documented that the core underpinnings of dynamic managerial capabilities (separately and all together) enable managers to influence strategic change (Helfat and Martin, 2015). For example, Eggers and Kaplan (2009) show that managerial beliefs, mental models, and/or processes may have both positive and negative affect on the organizational performance and strategic change. Acquaah (2007) and Geletkanycz and Boyd (2011), in turn, showed that, respectively, social capital of senior managers as well as their human capital, in the form of education and work experience, have significant positive impact on strategic change and outcomes. As noted earlier, several studies also acknowledged the interrelated character of the core underpinnings and their combined effect on the organization (e.g., Dimov, 2010).

Nevertheless, apart from few studies of core underpinnings of dynamic managerial capabilities of middle managers (e.g., Balogun, 2003), the extant literature is dominated by research, which inquires into the role and nature of these three underpinnings of dynamic managerial capabilities based on the evidences from the upper echelon in the organization (Helfat and Peteraf, 2015). It, in turn, indicates that the investigation of underlying factors of dynamic managerial capabilities of front-line managers can be an interesting avenue for further research and theory elaboration.

METHODS

Research Design and Setting

To study the dynamic managerial capabilities of front-line managers in a moderately dynamic context, we used the research approach of theory elaboration (Fisher and Aguinis, 2017).
Theory elaboration is an approach to conducting empirical studies, which applies preexisting conceptual ideas to develop new theoretical insights through contrasting, specifying, or structuring constructs, relations, and processes “to account for and explain empirical observations” (Fisher and Aguinis, 2017: 441).

The adoption of such a perspective to theorizing is most beneficial when an existing theory offers little insight into the phenomenon of interest, lacks sufficient logical and empirical validity, and is underdeveloped and still emerging (Fisher and Aguinis, 2017). Since this study elaborates and adopts the emerging theory of dynamic managerial capabilities to an unexplored moderately dynamic lower organizational level context and, based on the observed empirical insights, attempts to specify and refine the theory’s underlying constructs of sensing, seizing, and reconfiguring, we find this research strategy particularly useful.

The unit of analysis in this study is a dynamic managerial capability of front-line managers. We decided to investigate the dynamic managerial capabilities of front-line managers by exploring the processes of the development and implementation of entrepreneurial projects in organizations operating in a moderately dynamic context. We found such an approach appropriate because the abovementioned processes require from managers strong entrepreneurial and leadership skills, which are the core of dynamic managerial capabilities (Teece, 2016).

The chosen moderately dynamic context and research setting of this study is the public sector, notably the Norwegian municipal sector. The public sector is acknowledged by the extant literature as both a research field of dynamic capabilities and as a moderately dynamic environment (e.g., Pablo et al., 2007). The Norwegian municipalities, in turn, are known for their emphasis on a broadly understood entrepreneurial activity of they employees at all organizational levels, are highly innovative, decentralized, and possess dynamic capabilities (see e.g., Askim, Johnsen, and Christophersen, 2008; Gullmark, 2018; Rønning, Enquist, and
Fuglsang, 2014). These features make the Norwegian municipal sector a well-suited and interesting moderately dynamic context for studying the dynamic managerial capabilities of front-line managers and thus for elaborating the theory of dynamic managerial capabilities.

The used research method is an embedded multiple case study approach (Yin, 2011), which according to De Massis and Kotlar (2014) is the most appropriate research method to study project-level case studies. Multiple case studies allow for building a stronger base for the theory elaboration than a single case study, because they enable more accurate delineation of theoretical constructs and relationships. Moreover, multiple cases generate a theory, which is more generalizable because the obtained findings are replicated by several cases and better grounded in varied empirical evidence (Eisenhardt and Graebner, 2007: 27).

The chosen embedded cases were selected from two Norwegian municipalities, i.e., Arendal and Asker. We selected these municipalities because we predicted that the obtained from these cases findings would arrive at similar results, allowing for direct replication (Yin, 2011: 17) and robust elaboration of the theory of dynamic managerial capabilities (Fisher and Aguinis, 2017). Our prediction was based on the following criterion—only these two organizations won or were nominated to the Norwegian Innovation Award for the Municipal Sector (Government.no, 2014) more than once between 2014 and 2017 and each of these nominations was for different type of innovative work. Repeated nomination to the award for a development of various innovations, indicates that the presence of entrepreneurial activity (and thus dynamic managerial capabilities) in these organizations is not limited to one department or operating area and that it is continuing.

The project-level case selection process took several steps. First, we contacted the abovementioned municipalities and asked about a list of projects, which they perceived as entrepreneurial, and which were being implemented in the municipality at the time of our inquiry. Subsequently, we focused only on the entrepreneurial projects, which we perceived as
new for the implementing organization and that had some potential to create value by developing new or improving existing activities. In addition, the selected projects had to come from various municipal sub-sectors as to increase the generalizability of the findings. Finally, they also had to be ongoing at the time of data collection. By doing so, we secured access to all the relevant informants and reduced the retrospective bias concerning the development and implementation of these projects. The outcome of this search was a list of 13 pertinent projects, which we selected to scrutinize in this study.

**Data Collection**

We used three sources to collect the data, i.e., (1) semi-structured interviews with managers and workers of entrepreneurial projects as well as with the top and middle municipal managers; (2) follow-up emails; and (3) archival data, comprising information about the selected projects from the project and municipality websites, local press articles, and from other internal municipal documents. An overview of the collected data is presented in Table 1.

The main source of data was 23 semi-structured interviews, which were carried out with the abovementioned informants over the two months period. We perceived our informants as knowledgeable agents (Gioia, Corley, and Hamilton, 2013). Therefore, we conducted the interviews in such a manner that allowed us to get deep understanding of their views and experiences. The interviews followed a semi-structured interview guide, which comprised a list of questions concerning the processes of projects’ development and implementation. However, during the interviews, we also preserved flexibility by giving the voice to the informants, so that they could express their emerging thoughts, and by asking additional questions based on informant responses. The questions covered such issues as the idea emergence process, changes in the original ideas, supporting key actors, challenges and drivers of the project implementation, or the changes that the project required from and led to in the organization. To assure the accuracy and validity of the obtained findings, in each case we sought insights from
at least three informants from various organizational levels. The length of interviews varied and depended on the knowledge and personal characteristics of an interviewee. The longest interviews exceeded one hour, the shortest were about 20 minutes long. The total length of interview data exceeded 14 hours. We recorded and transcribed all interviews.

The secondary data comprised a variety of documents and sources such as internal project-related documents, leaflets, PowerPoint presentations, project websites, or the media coverage of the entrepreneurial projects. In total, the gathered archival data exceeded 1300 of pages and slides and over 40 minutes of video recording. The secondary sources comprised core characteristics and information about the projects, their nature, structure, and the formulated goals and to date achieved results. They also provided additional data about the opportunity recognition and its further development and implementation. Finally, the archival data enabled us to follow the opportunity development process in “real-time”, supplementing and triangulating the accounts of the same process, which were provided by the interviewees. A complete overview of the collected data and a short description of the selected cases is depicted in Table 1.

**Data Analysis**

Following Gioia *et al.* (2013), we began the analysis of the collected data by developing first-order categories, which extracted the essence from the conducted interviews. In doing so, we tried to retain the informant terms and adhere faithfully to their experiences and interpretations. Since such an approach resulted in a large number of first-order categories, we began to seek similarities and differences among the identified categories as to attain a more manageable number of first-order concepts. For example, we found that one of the reasons why the projects “3D modelling for urban development”, “Cycling on familiar paths”, “Daily life rehabilitation”, “Exemplary math education”, “Integration on two wheels”, and “Welfare lab” were developed
was dissatisfaction of employees and/or front-line managers with the way they performed their tasks and work. Therefore, we grouped all of the codes, which referred to issue of broadly understood dissatisfaction, under one category entitled “Dissatisfaction at the workplace with the service delivery and tasks performance”. The outcome of such a categories’ reduction process was the development of 23 first-order concepts, which are depicted in Figure 1.

The second-order analysis started by taking the developed first-order concepts to a more abstract and theoretical realm. Following Gioia et al. (2013), we tried to develop theoretical themes that could facilitate describing and explaining the events, relations, and processes, which we observed in the collected data. In this stage of analysis, we started to iteratively compare the emerging second-order themes with the theoretical constructs, themes, and dimensions, which exist in the literature on dynamic managerial capabilities and entrepreneurship. For instance, we linked the first-order concepts of “monitoring of changes in legislation”, “staying attentive to the needs of residents”, and “inspiration”, which described the mechanisms used to recognize external sources of opportunities, with the originating from the entrepreneurship literature concept of “alertness” as to develop the second-order theme of “alertness to external stimuli”. The outcome of such an iterative process was the emergence of nine second-order themes, which are depicted in Figure 1.

Finally, the attempt to distill the emergent second-order themes even further into a more abstract level of analysis, resulted in the development of second-order aggregate dimensions (Gioia et al., 2013). We found that the three emergent dimensions i.e., capability to recognize opportunities, capability to develop and initially implement opportunities, and capability to perform organizational reconfigurations to exploit opportunity allowed us to specify and refine the theoretical constructs of sensing, seizing, and reconfiguring as well as showed the relevance of these constructs to a new domain of moderately dynamic lower organizational level context.
Figure 1 illustrates graphically how we progressed from the collected data to the theoretical themes and dimensions in conducting the analysis.

**FINDINGS**

The obtained findings demonstrate that the dynamic managerial capabilities of front-line managers were manifested in the form of the capabilities to recognize, develop and initially implement entrepreneurial opportunities, as well as the capability to perform organizational reconfigurations to exploit them. The following paragraphs will discuss in detail the processes that underlie these capabilities and their effect on the scrutinized organizations.

**Capability to Recognize Entrepreneurial Opportunities**

The obtained findings revealed that the front-line managers in the examined cases developed the capability to recognize entrepreneurial opportunities. It comprised the ability to actively and continuously search for ideas, knowledge, and experiences, which were aimed at improving the organizational performance and adopting the organization to the changing environment. We found that the sources of identified opportunities emerged both from within the organization and from its external environment (see Table 2). Furthermore, we observed that to recognize these sources the front-line managers employed a variety of mechanisms (see Table 3).

**Sources of Opportunities**

Internal sources of entrepreneurial opportunities in the examined organizations had their origins both at the bottom and at the top of the organization (see Table 2). The former comprised the dissatisfaction at the workplace with the then method of delivery of services and performing tasks. For instance, the main source of the opportunity for “Daily life rehabilitation” project
was the dissatisfaction of the rehabilitation professionals in the municipality of Arendal with the then provided rehabilitation offer to the residents.

“It all started because of our proficient rehabilitation professionals. They were not satisfied with the provided rehabilitation offer to the elderly residents in our municipality. Their idea was that it would be better to work with the rehabilitation at home, where the patient feels much more comfortable” (Project manager, “Daily life rehabilitation”).

The latter sources, however, constituted the political agenda-setting (see Table 2). For example, a direct source of the opportunity for “Community development program” was the decision of politicians to develop the district of Borgen and to more closely integrate the local community.

“In May 2013, the politicians responded to the letter from the worried parents’ committee in a local school. They took the decision that the municipality needs to address the segregation of the residents of Borgen and that this district needs to be revitalized” (Project manager, “Community development program”).

The observed external environment sources of entrepreneurial opportunities, in turn, were classified into four categories (see Table 2). First, in several cases the opportunities emerged from changes in the local society. The example of such a change is the last European migrant crisis, which resulted in a sudden increase in the number of immigrants in the local society and gave rise to the entrepreneurial opportunity addressed by the project “Integration on two wheels”.

“…There was a discussion among us teachers what we can do to better integrate our students, who came to us to learn Norwegian. We knew that a lot of them did not have a driving license, that they were not particularly mobile, and that they lacked the knowledge about the traffic safety. So, we came up with the idea of using bikes to help them better integrate here” (Project manager, “Integration on two wheels”).

Second, we found that some entrepreneurial opportunities also aroused from changes in resident needs (see Table 2). The case of “Long-open library” illustrates well how changes in the needs of residents may stimulate entrepreneurial behavior of a front-line manager.

“As I said, the user behavior in the library has changed a lot recently. Before, we got quite advanced questions about the references that a user needed. Now it is usually:
where is the toilet? So, I started thinking how we can change the library as to accommodate it to the changing user needs” (Project manager, “Long-open library”).

In addition, entrepreneurial opportunities in some projects resulted from the existence of successful projects in other organizations, which were interesting, relevant, and easily adaptable for the front-line managers (see Table 2). For instance, the original idea for the project “Fire prevention teddy bear” was developed in a fire department in another Norwegian municipality.

“We got an invitation to Kristiansand, where the fire department from Larvik presented this teddy bear and their project. They told us what they had done with it and they said that they want the other municipalities to further develop this idea in their own local context. I personally thought that this was a really good idea” (Project manager, “Fire prevention teddy bear”).

Finally, in several cases (see Table 2), entrepreneurial opportunities emerged from the existence of deteriorated areas in the examined municipalities. The example of a project, where the need to renovate an area of urban decay was the main source of opportunity is “The dream bank”.

“We decided to create ‘The dream bank’ in the area of Moltemyr in Arendal, around the Moltemyr school. Why Moltemyr? Because in this area there lives a lot of residents with multicultural background, who are not members of any association. We also thought that this area of Arendal urgently need further development” (Project manager, “The dream bank”).

Recognition Mechanisms

Front-line managers in the investigated organizations used various mechanisms to stay alert to internal organizational and external environment stimuli (see Table 3). As to stay alert to internal organizational stimuli, they monitored changes and developments in the internal processes and routines and responded to internal political agenda-setting. The former mechanism was closely associated with the alertness to sources of opportunities emerging from the dissatisfaction at the workplace with the then method of delivery of services and performing tasks (see Tables 2 and 3). For instance, monitoring of the effectiveness of internal rehabilitation routines by the manager of the “Cycling on familiar paths” project contributed to the recognition
of the dissatisfaction of the workers with the then provided rehabilitation offer to the elderly
patients at the nursing home.

“… The reason why I was interested in this idea was also because I observed how our
patients responded to the then provided rehabilitation offer. During our internal
meetings a lot of workers expressed their concern when it comes to the response of our
patients to the delivered day care services. They struggled a lot to motivate some patients
to participate in any of the provided programs, especially those that required physical
activity” (Project manager, “Cycling on familiar paths”).

The latter involved the alertness to the sources stemming from the political agenda-
setting. Although we classified the sources of entrepreneurial opportunities emerging from the
political agenda-setting as internal, it should be emphasized that they are in fact the result of
initial recognition of a need or problem by the politicians, which had its source in the external
environment of the organization, and which created an opportunity for an entrepreneurial
project (see Tables 2 and 3). In all cases, where this type of mechanism was found, the front-
line managers responded to the political agenda-setting by applying for a project manager
position with the aim to come up with a solution to the identified by the politicians need or
problem. The example below illustrates well how the process of recognition of the political
agenda-setting source of entrepreneurial opportunity may look like.

“The project that I am working on now was announced in 2012. The announcement
stated that the municipality was looking for a project manager who would build a
swimming pool facility. I decided to make an offer in public procurement process
because I have had a consulting company, in addition to my work here in the
municipality. When I won the tender in February 2013, I started to work with the further
development of the idea for the project” (Project manager, “Eco-friendly swimming
pool”).

Furthermore, we found that front-line managers used three mechanisms to recognize the
external environment stimuli. First, in two of the investigated entrepreneurial projects, i.e., “Fire
prevention teddy bear” and “Safer daily life”, front-line managers recognized the sources of
opportunities in the external environment through monitoring of changes in the legal
environment.
“The Norwegian Health Directorate came with the recommendation to digitalize security services for elderly, who needs our help to continue living at their homes. When I found out about this new regulation, I felt it was my job to do something to implement it in our municipality” (Project manager, “Safer daily life”).

In addition, the capacity of front-line managers to stay attentive to the needs of municipal residents was used to recognize the source of opportunities emerging from changes in resident needs (see Tables 2 and 3). In the case of the “Welfare Lab” project, for example, the front-line manager conducted some interviews with residents to determine the areas of public services and tasks, which they think require improvement.

“We were selected to test this new user-oriented service design approach. Since we didn’t know precisely what kind of challenges we should address using this method, we decided to ask our residents, using interviews, about what is important to them, how they experience the quality and scope of the municipal services, and what they think we should improve. (Project manager, “Welfare lab”).

Finally, we found that the inspiration by successful projects in another organization (see Tables 2 and 3) was an important mechanism to recognize the sources of opportunity emerging from. The accidental exposition (e.g., while reading a newspaper or watching tv) to interesting projects in other organizations inspired some of the front-line managers to pursue the recognized opportunity in their own context.

“Six-seven years ago, I read in a newspaper about a similar project in Denmark. I knew immediately that such a project would fit well our needs and challenges, which we had experienced in Arendal” (Project manager, “Long-open library”).

Thus, this section has shown that in the vast majority of cases, the recognized entrepreneurial opportunity emerged from several internal and/or external sources. Therefore, front-line managers usually needed to simultaneously employ a variety of mechanisms to recognize these sources. Regardless of the used configuration of sources and recognition mechanisms, however, the outcome of opportunity recognition process was the development of an initial understanding by the front-line managers of what constitutes the entrepreneurial opportunity for their individual project.

**Capability to Develop and Implement Entrepreneurial Opportunities**
The analysis of the examined entrepreneurial projects also revealed that, the front-line managers used two resource mobilization mechanisms—knowledge mobilization and mobilization of financial and non-financial resources (see Table 4)—to develop, specify, and initially implement the previously recognized entrepreneurial opportunities.

**Knowledge Mobilization**

Front-line managers in all of the examined entrepreneurial projects further developed and concretized their initial understanding of opportunity by mobilizing knowledge from various external and internal actors and sources (see Table 4). First, front-line managers, who were developing and implementing the entrepreneurial opportunities based on successful projects from other organizations (see Table 2), sought knowledge and experiences from those who previously implemented similar projects in their respective organizations.

“When we started thinking about implementing this idea we tried to collect some experiences from places where similar projects were implemented. We were on a study tour to Sweden and we learned about an interesting way of stimulating business activity in the municipality. We also travelled a bit around Norway” (Project manage, “Knowledge harbor”).

Moreover, in several cases (see Table 4), knowledge transferred from the universities and research institutions enabled further development and implementation of the respective entrepreneurial opportunities. For example, the cooperation with a local university allowed the manager of the project “3D modelling for urban development” to get the access to the technology and skills, which enabled further development and implementation of the recognized entrepreneurial opportunity.

“To implement our idea, we needed the appropriate type of touch technology. The problem was that we hadn’t been able to find it. Therefore, I contacted the local university. I wondered if they could help us. It turned out that they had something and were very keen on this, sort of, multidisciplinary cooperation” (Project manager, “3D modelling for urban development”).

In addition, some front-line managers in our cases cooperated with professional consultants as to gain knowledge required to refine their initial understanding of the...
entrepreneurial opportunity (see Table 4). The support of consultants was particularly vital in the entrepreneurial projects requiring advanced technical and technological skills, such as the projects “Eco-friendly swimming pool” or “Safer daily life”.

“We started our work in spring 2013. First, we had to figure out how we should develop and implement this project. That’s why we decided to get some external help. In August 2013—we hired two Icelandic firms. So from August 2013 to December 2013, we worked together on how we should design and build this swimming pool facility” (Project manager, “Eco-friendly swimming pool”).

Finally, we observed that some front-line managers developed their entrepreneurial opportunities using knowledge and experiences resulting from the participation in larger projects (see Table 4). For example, the front-line manager of the “Exemplary math education” project developed the structure and teaching methods for her project drawing on her experiences from a larger project, in which she had been participating.

“Since 2009, we have been implementing a big project in social competence. Back then we had a plan to first learn children good social competencies, and based on it, create a general approach to learning of various subjects. Therefore, in this mathematics project, we have used the same structure and model, and similar teaching methods as in the social competence project” (Project manager, “Exemplary math education”).

**Mobilization of Financial and Non-financial Resources**

The obtained findings also demonstrated that the capability of front-line managers to mobilize the financial and non-financial resources had a considerable influence on the ultimate shape of the pursued entrepreneurial opportunities and the manner they were implemented.

We found that front-line managers in our cases mobilized the necessary financial and non-financial resources both from the within and outside of the organization (see Table 4). The external financial and non-financial resources’ mobilization involved such activities as obtaining external funding from public and private actors (e.g., “Eco-friendly swimming pool”), seeking volunteers to help with the delivery of the designed services (e.g., “Cycling on familiar paths”), or securing appropriate physical resources (“Integration on two wheels”) and technology (“3D modelling for urban development”). For example, the manager of
“Community development program” argued that the funds given by the County Governor were vital for the implementation of her entrepreneurial opportunity.

“Yes, we applied for funds from various external actors. In 2014, for example, we got a considerable financial support from the County Governor. These funds were critical for our project. We have applied for money from both public and private organizations and our application record kind of resembles the process of project idea development” (Project manager, “Community development program”).

Finally, none of the investigated projects could have been implemented if the front-line managers did not mobilize sufficient internal financial and non-financial resources, such as internal funding or physical organizational resources in the form of premises or vehicles. Notably, the most critical challenge for all of the examined front-line managers was to secure the sufficient internal funding for their project. The case of “Eco-friendly swimming pool”, for instance, illustrates well how salient the ability of front-line managers to negotiate the additional internal funds is, in the process of entrepreneurial opportunity implementation.

“We began with a budget of NOK 180 million. But, quickly we realized that it was not enough to build the swimming pool facility in the desired way. We had quite tough discussions with the politicians. We presented our ideas to them and when they saw them, they eventually gave us the ‘thumbs up’. The final idea became NOK 24 million more expensive than planned because of various innovative solutions, which we decided to use” (Project manager, “Eco-friendly swimming pool”).

Thus, this section has demonstrated that as to develop and initially implement the recognized entrepreneurial opportunities, the front-line managers used two complementary activities of knowledge and financial and non-financial resources mobilization. We found that the front-line managers mobilized some knowledge as to further concretize and develop their entrepreneurial opportunities. Further development of the opportunity, however, usually involved new resource demands. Therefore, the front-line managers in our cases had to mobilize additional internal and/or external financial or non-financial resources. Nonetheless, as the following paragraphs will illustrate, they were not able to fully implement the developed entrepreneurial opportunities until they made the required reconfigurations in the organization.
Capability to Perform Organizational Reconfigurations as to Exploit the Developed Entrepreneurial Opportunities

The obtained findings demonstrated that the reconfiguration mechanisms used by the front-line managers were aimed at transforming the attitudes of individuals in the organization and transforming the organizations themselves in such manner that allows for full implementation and exploitation of the developed entrepreneurial opportunities. These mechanisms comprised overcoming the resistance to change by building the sufficient legitimacy for and commitment to the project on different organizational levels, the departure from and redesign of various organizational routines, processes and/or structures, and the acquisition and the appropriate management of new knowledge and experiences in the organization (see also Table 5).

**INSERT TABLE 5 ABOUT HERE**

*Overcoming the Resistance to Change in the Organization*

One of the main challenges of the front-line managers in the process of exploiting the developed entrepreneurial opportunities was to overcome the resistance to change on different organizational levels. We found that in all, but two cases (i.e., “Knowledge harbor” and “Eco-friendly swimming pool”), which were to a large extent the construction projects, the implementation of the developed entrepreneurial opportunities led to some resistance of municipal employees (see Table 5). As to overcome such resistance, the front-line managers used such approaches as encouraging active and democratic participation of employees in the opportunity exploitation process and creating commonly agreed rules and values to guide such a process.

“When the idea was fully developed, we did not start the implementation of the project right away. We had to change ourselves first. That’s why we made these interaction rules. These are the basic values that have affected us during the implementation of this project and will continue to influence us. We agreed on these rules together and everyone has to follow them. They helped us a lot to create a commitment in the organization to change” (Project manager, “Long-open library”).
Moreover, an equally essential task for all front-line managers was to build sufficient legitimacy and support for their project among the top managers, politicians, and residents (see Table 5). Getting the approval for the project from the top level of the organization and the residents helped them to overcome the resistance to change among employees and enabled them to secure the necessary resources to exploit the developed entrepreneurial opportunities (see the previous section). In the examined cases, various techniques were used to assure the stakeholders that the pursued opportunity is worth exploiting. For example, the manager of the “Knowledge harbor” project had given a number of PowerPoint presentations and initiated the pilot project to convince all the interested parties to the developed entrepreneurial opportunity.

“I think that the key to success of this project was that we convinced all stakeholders to our idea. I remember I had given many PowerPoint presentations to the administration, politicians, residents, and private firms and tried to explain why this project is important. But we also made some actions, not just talking—by launching a pilot project we showed that this idea can deliver some good results in practice as well” (Project manager, “Knowledge harbor”).

Rearrangement of Organizational Systems

Securing the sufficient support in the whole organization, the front-line managers were able to make necessary reconfigurations in the organization systems as to fully implement the developed entrepreneurial opportunities. Such a rearrangement involved the redesign of organizational routines and processes and, in two cases (i.e., “Daily life rehabilitation and “Welfare lab”), the redesign of organizational structure (see Table 5). The example of the former is the initiated and advocated by the manager of the “Community development program” change of the organizational approach to the development of public services and tasks from internally-developed to more user co-created.

“In order to fully implement this project we had to change the view of the whole municipality on the residents’ involvement in the development of public services and tasks. And that’s what we did. I was glad, because that’s what I advocated for in a long time in our organization. Now, we are more user-oriented” (Project manager, “Community development program”).
The example of the latter is the redesign of the structure in the municipal health care department as to fully implement the entrepreneurial opportunity exploited by the “Daily life rehabilitation” project.

“The further development of this project led to quite radical changes in the organizational structure. In December 2011, following my suggestion, the Municipal Council took a decision to create a totally new organization of health care department in the municipality, with the central role of our project. In early 2012, the whole process of changing the structure began and I became responsible, as a leader, for this process” (Project manager, “Daily life rehabilitation”).

Managing New Knowledge and Experiences in the Organization

Finally, in order to fully implement the developed entrepreneurial opportunity, the front-line managers had to manage the new knowledge and experiences in the organization, which emerged from the opportunity exploitation process. We found that they used two approaches to ensure the successful exploitation of the pursued opportunities, i.e., they provided training programs for employees and they built in the gained knowledge and experiences in the organizations by supporting related entrepreneurial projects (see Table 5). The purpose with the former was to secure and sustain the gained support of employees for the organizational change.

“We want all of our employees to be involved in the project. Therefore, we also provided the nursing staff with some training on how to use this cycles and how to support our patients during the exercises” (Project manager, “Cycling on familiar paths”).

The objective of the latter was to strengthen the newly changed routines, processes, and structures by implementing or supporting complementary projects in the organization. For example, as to complement and strengthen the legitimacy of the project “Integration of two wheels”, a similar swimming project was developed.

“We used the experiences, which we have gained from this cycle project, to develop a swimming project, so that we have a cycle project in spring and a swimming project in autumn. Our colleagues, who work on the swimming project, have used many of our experiences and solutions, which we came up with in our work on the project, to develop and implement their idea” (Project manager, “Integration on two wheels”).

Hence, this section has shown that the full implementation of the developed entrepreneurial opportunities required from the front-line managers to exercise a great deal of leadership as to overcome the organizational resistance and to build sufficient commitment to
and legitimacy for the project. Given the adequate support, the front-line managers were able to fully exploit the developed entrepreneurial opportunities by making the necessary organizational reconfigurations and by appropriately managing the new knowledge and experiences in the organization.

**DISCUSSION**

Motivated by the need to strengthen the logical and empirical adequacy of the theory of dynamic managerial capabilities, this study provided new insights into the scarcely investigated nature, role, and impact of dynamic managerial capabilities of front-line managers on the organizations operating in a moderately dynamic context of the public sector. The identified dynamic managerial capabilities of front-line managers comprised the capabilities to recognize, develop and initially implement entrepreneurial opportunities, and the capability to perform the organizational reconfigurations to exploit them. Our findings showed that these capabilities had a major impact on strategic change and organizational performance because they endowed the front-line managers with the attributes of entrepreneurship and leadership, which led to high entrepreneurial performance at the lower echelons of the organization and allowed it to be more innovative and adaptable. Figure 2 summarizes these findings.

**INSERT FIGURE 2 ABOUT HERE**

To the best of our knowledge, prior research has not explicitly examined dynamic managerial capabilities of front-line managers, particularly in moderately dynamic environments. To date, the empirical evidences have solely indicated that although the front-line managers perform standard tasks and procedures such as motivating and disciplining subordinates, monitoring performance, or individual productivity (Kraut et al., 2005: 123), they also may engage in strategic change-oriented activities (Ma and Seidl, 2018), in entrepreneurial behavior (Teece, 2016), and their relations-oriented and change-oriented capabilities are equally important as task-oriented capabilities (Anzengruber et al., 2017). The lack of any
profound insights into the phenomenon of dynamic managerial capabilities of front-line managers in the extant literature raises the question whether the front-line managers have dynamic managerial capabilities, and if so, what their impact on the organization is. To solve this puzzle, this study focused exclusively on the nature, role, and impact of dynamic managerial capabilities of front-line managers on the organizational change and performance.

In order to investigate the nature of dynamic managerial capabilities of front-line managers, we explored how front-line managers exploit entrepreneurial opportunities in a new setting of moderately dynamic context of the public sector. In doing so, we followed Protogerou et al. (2012: 641), who argued that focusing on the entrepreneurial function embedded in dynamic managerial capabilities, can reveal new dimensions of the established procedural typologies. Our inquiry into the nature of dynamic managerial capabilities of front-line managers indeed revealed three additional dimensions of the established procedural typologies, i.e., the capabilities to recognize opportunities, to develop and initially implement opportunities, and to perform organizational reconfigurations to exploit the developed opportunities.

The identification of such capabilities is an important contribution to the theory of dynamic managerial capabilities due to several reasons. First, our findings refine the established procedural typologies of dynamic managerial capabilities of sensing, seizing, and reconfiguring (Helfat and Martin, 2015; Teece, 2007), by enriching them with additional entrepreneurship-derived dimensions. Moreover, by providing in-depth accounts of how the scarcely investigated dynamic managerial capabilities of front-line managers operate at the bottom of the organization and in a new setting of a moderately dynamic environment of the public sector, we deepen our understanding of how procedural distinctions of dynamic managerial capabilities operate on the ground and in the other context than rapidly changing environments (Schilke et al., 2018: 415–416). Lastly, we found that the exploitation of entrepreneurial opportunities
requires the sequential use of the identified dynamic managerial capabilities of front-line managers. Such a finding provides supporting empirical evidences to Schilke’s et al. (2018) theoretical arguments, such that there might exist interconnections and overlaps among the procedural distinctions of dynamic managerial capabilities.

Furthermore, this study provided empirical evidences related to the impact of dynamic managerial capabilities of front-line managers on the strategic change and organizational performance. We found that the observed dynamic managerial capabilities of front-line managers, contrary to the impact of the dynamic managerial capabilities of top managers, did not lead to any radical turnarounds or redirections of organizational strategies (e.g., Eggers and Kaplan, 2009). They “solely” endowed the front-line managers with the attributes of entrepreneurship and leadership, which generated vigorous entrepreneurial activity at the bottom of the examined organizations, and which resulted in the development of numerous, largely incremental improvements.

The resulting from the possession of dynamic managerial capabilities, entrepreneurial attitude of the front-line managers is central to the organization in several senses. First, exploitation of entrepreneurial opportunities by the front-line managers lead to frequent incremental changes in the organization, which may over time radically transform it and considerably affect its overall performance (see e.g., McKendrick and Wade, 2010).

Second, the entrepreneurial and leadership skills enable the front-line managers to find creative and suitable solutions to the problems, which they encountered in their everyday work. Moreover, they allow them to align and realign the organizational resources in such a manner that ensures timely and effective response to changes in the external environment. Because of this, the whole organization improves its performance and becomes more innovative and adaptable (Teece, 2016).
Finally, the entrepreneurial attitude of front-line managers is indispensable as to appropriately respond to the ideas and problems formulated by the top level managers and politicians. Although, the extant literature frequently perceives front-line managers “as the ‘recipients’ of initiatives from middle and senior-level managers” (Hornsby et al., 2009: 245), the cases of “Community development program”, “Eco-friendly swimming pool”, and “Knowledge harbor” showed that the responses to top-down initiatives required from the front-line managers a great deal of entrepreneurialism and leadership. It, in turn, suggests that front-line managers play a vital, complementary role in the organization in the process of developing and implementing promising entrepreneurial opportunities, which were initially recognized by their superiors (Teece, 2016).

The last contribution of this study adds to the conversation above by shedding some light on the multilevel nature of dynamic managerial capabilities of front-line managers (Helfat and Martin, 2015). By focusing on the role and effect of two of the core underpinnings—managerial cognition and social capital—on the dynamic managerial capabilities of front-line managers, the obtained findings further enrich our understanding of how and why the managers below the top executive level may affect strategic change (Helfat and Peteraf, 2015: 846). We found that the front-line managers draw on the combination of the cognition and social capital underpinnings when they employ the identified capabilities to recognize, develop and initially implement entrepreneurial opportunities, and perform organizational reconfigurations to exploit them.

Consistent with the extant literature (Helfat and Martin, 2015; Helfat and Peteraf, 2015), we found that the managerial cognitive capabilities of attention and perception, reasoning and problem-solving, and social cognition underpinned the observed dynamic managerial capabilities of front-line managers. The obtained findings demonstrated that the cognitive capabilities of front-line managers to pay attention to and accurately perceive the changes and
developments inside the organization and in its external environment constituted the central elements of the identified recognition mechanisms, which enabled the front-line managers to sense superior entrepreneurial opportunities. Moreover, the reasoning and problem-solving capabilities allowed the front-line managers to assess where they should acquire the relevant knowledge and resources to implement the recognized opportunity as well as how to design their entrepreneurial project so that all the required elements would fit together. Finally, the social cognitive capabilities in the form of the capacities to foster cooperation, manage power relations, and provide sufficient incentives for change (Helfat and Peteraf, 2015: 844) were particularly important when the front-line managers sought to overcome the resistance to change in the organization, both among the employees and their superiors, but also when they took measures to rearrange organizational systems, and to appropriately manage new knowledge and experiences in the organization.

Furthermore, managerial social capital, similarly to managerial cognitive capabilities, underpinned all of the identified dynamic managerial capabilities of front-line managers. The front-line managers used their informal and formal relationships within the organization and in the external environment to obtain knowledge and information about promising entrepreneurial opportunities (Adler and Kwon, 2002). For instance, the manager of “Fire prevention teddy bear” project recognized the entrepreneurial opportunity when he visited another fire department. In addition, the front-line managers used their internal and external networks to get the access to the required knowledge and resources (see also Acquaah, 2007). For example, the manager of “Cycling on familiar paths” project used the network of former employees and pensioners to recruit volunteers for a project. Lastly, the internal position and influence, which the front line managers got in the organization from the possession of the abovementioned social cognitive capabilities, enabled them to perform the required reconfigurations to exploit the developed opportunities (Helfat and Martin, 2015). The efforts made by the manager of
“Daily life rehabilitation” project to use its advantageous position to change the organizational structure, serve as a good example of such managerial activities.

Hence, our analysis indicates that dynamic managerial capabilities of front-line managers and their underpinnings are an essential element of strategic change and performance improvement in the organization. Therefore, we suggest, supporting Teece (2016: 208), that the extant literature should pay more attention to the issue of entrepreneurialism and leadership in other levels of the organization than the CEO or the top management team.

CONCLUSION
This study has found that dynamic managerial capabilities of front-line managers, which were identified in a new context of a moderately dynamic Norwegian municipal sector, comprised the capabilities to recognize opportunities, to develop and initially implement opportunities, and to perform organizational reconfigurations to exploit the developed opportunities. The identification of three additional entrepreneurship-derived dimensions refined the established procedural typologies of sensing, seizing, and reconfiguring (Helfat and Martin, 2015; Teece, 2007) and demonstrated that these dimensions and their underpinnings have a major impact on strategic change and organizational performance. We found that they endowed the front-line managers with the attributes of entrepreneurship and leadership, which led to high entrepreneurial performance at the lower echelons of the organization and allowed it to be more innovative and adaptable.

Our research is one of the first attempts to explore the nature and impact of dynamic managerial capabilities of front-line managers on the organization operating in a moderately dynamic context. Therefore, our study has some limitations and unanswered questions, which require further investigation. First, since this study was based on a relatively small number of qualitative cases from one sector and country, additional quantitative studies could test whether
the obtained findings can be replicated in other contexts, particularly in rapidly changing environments.

Moreover, in this study we focused on how dynamic managerial capabilities of individual front-line managers influence strategic change and organizational performance. Therefore future research might explore the magnitude of the aggregate effect of the dynamic managerial capabilities of front-line managers as well as the effects of teams of front-line managers on the organization. The comparison of the strength of the impact of top, middle, and front-line managers on the strategic change and organizational performance is also a promising avenue for further research.

Finally, we have shown that the front-line managers drew on the combination of the cognition and social capital underpinnings when they employed their dynamic managerial capabilities to strategically change the organization and improve its performance. Nevertheless, the collected data provided limited insights into how the third underpinning—managerial human capital (Adner and Helfat, 2003)—contributes to such efforts. This suggests that the investigation of the impact of front-line managers’ human capital and all three underpinnings together (Helfat and Martin, 2015) on strategic change constitutes an important terrain for additional studies.

REFERENCES


TABLES AND FIGURES

Table 1. Overview of the Collected Data

<table>
<thead>
<tr>
<th>Munici-pality</th>
<th>Entrepreneurial project</th>
<th>Informants</th>
<th>Secondary data</th>
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<tbody>
<tr>
<td>Arendal</td>
<td>3D modelling for urban development</td>
<td>Project manager, Municipal department manager, Chief administrative officer</td>
<td>Internal reports and documents</td>
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<tr>
<td></td>
<td>Cycling on familiar paths</td>
<td>Project manager, Project worker, Municipal department manager, Chief administrative officer</td>
<td>Internal documents, Newspaper article</td>
</tr>
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<td></td>
<td>Daily life rehabilitation</td>
<td>Project manager, Municipal department manager, Chief administrative officer, Manager of a municipal umbrella project</td>
<td>Internal reports, PowerPoint presentation</td>
</tr>
<tr>
<td></td>
<td>Exemplary math education</td>
<td>Project manager, Municipal department manager, Chief administrative officer</td>
<td>Internal documents</td>
</tr>
<tr>
<td></td>
<td>Fire prevention teddy bear</td>
<td>Project manager, Municipal department manager, Chief administrative officer</td>
<td>Internal reports, PowerPoint presentation, Excel file</td>
</tr>
<tr>
<td></td>
<td>Integration on two wheels</td>
<td>Project manager, Municipal department manager, Chief administrative officer, Manager of a municipal umbrella project</td>
<td>Internal reports</td>
</tr>
<tr>
<td></td>
<td>Knowledge harbor</td>
<td>Project manager, Municipal department manager, Chief administrative officer</td>
<td>PowerPoint presentations, Internal and external documents, Project website</td>
</tr>
<tr>
<td></td>
<td>Long-open library</td>
<td>Project manager, Municipal department manager, Chief administrative officer</td>
<td>PowerPoint presentations, Poster, Internal documents</td>
</tr>
<tr>
<td>Project</td>
<td>Description</td>
<td>Roles</td>
<td>Additional Resources</td>
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<tr>
<td>The dream bank</td>
<td>Project manager&lt;br&gt;Municipal department manager&lt;br&gt;Chief administrative officer&lt;br&gt;Manager of a municipal umbrella project</td>
<td>Internal reports&lt;br&gt;PowerPoint presentation&lt;br&gt;Project website</td>
<td></td>
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<tr>
<td>Community development program</td>
<td>Project manager&lt;br&gt;Project worker&lt;br&gt;Municipal department manager&lt;br&gt;Top municipal manager</td>
<td>Internal documents&lt;br&gt;Project website&lt;br&gt;Video about the project</td>
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<tr>
<td>Eco-friendly swimming pool</td>
<td>Project manager&lt;br&gt;Project worker&lt;br&gt;Municipal department manager&lt;br&gt;Top municipal manager</td>
<td>Internal documents&lt;br&gt;PowerPoint presentation&lt;br&gt;Project website</td>
<td></td>
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<tr>
<td>Safer daily life</td>
<td>Project manager&lt;br&gt;Project worker&lt;br&gt;Municipal department manager&lt;br&gt;Top municipal manager</td>
<td>Internal reports&lt;br&gt;Project website</td>
<td></td>
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<tr>
<td>Welfare lab</td>
<td>Project manager&lt;br&gt;Project worker&lt;br&gt;Municipal department manager&lt;br&gt;Top municipal manager</td>
<td>Internal documents&lt;br&gt;Video about the project&lt;br&gt;Project website</td>
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</table>
Table 2. Sources of Entrepreneurial Opportunities

<table>
<thead>
<tr>
<th>Source location</th>
<th>Source of opportunity</th>
<th>Entrepreneurial project</th>
<th>Illustrative example</th>
</tr>
</thead>
</table>
| Internal        | Dissatisfaction at the workplace with the service delivery and tasks performance | “3D modelling for urban development”  
“Cycling on familiar paths”  
“Daily life rehabilitation”  
“Exemplary math education”  
“Integration on two wheels”  
“Welfare lab”               | “The idea for the project came from a live long frustration. I found it very frustrating to talk about the development and the challenges for urban development using a Power Point presentation, which takes approximately 45 minutes. That is not good enough” (Project manager, “3D modelling for urban development”). |
|                 | Political agenda-setting              | “Community development program”  
“Eco-friendly swimming pool”  
“Knowledge harbor”                                        | “The politicians wanted the new facility, instead of enlarging the existing swimming pool, because they wanted to build it in an environmental friendly and innovative way” (Project manager, “Eco-friendly swimming pool”). |
|                 | Changes in the local society          | “Community development program”  
“Integration on two wheels”                                    | “The percentage of foreigners who live in Hagaløkka has significantly increased in the last decade. In some classes at the local school the majority of pupils wasn’t Norwegian. Therefore, the parents’ committee felt that politicians have to do something to increase integration” (Project manager, “Community development program”). |
|                 | Changes in resident needs             | “Community development program”  
“Exemplary math education”  
“Integration on two wheels”  
“Long-open library”  
“Welfare lab”               | “We conducted six interviews with different residents in the second half of 2015. Our residents indicated that they expect from us to create a comprehensive service system, which will ensure a long-term sustainable housing and living conditions in the municipality” (Project manager, “Welfare lab”). |
| External        | Successful projects in other organizations | “Cycling on familiar paths”  
“Daily life rehabilitation”  
“Fire prevention teddy bear”  
“Knowledge harbor”  
“Long-open library”  
“The dream bank”            | “Simultaneously, I think it was around 2011, the top management in the municipality took a study trip to the municipality of Fredericia in Denmark, where a similar project was implemented. When they came back, they were really enthusiastic about what they had seen and heard” (Project manager, “Daily life rehabilitation”). |
|                 | Existence of a deteriorated area      | “Eco-friendly swimming pool”  
“Knowledge harbor”  
“The dream bank”                                                  | “… Also, in the area where the harbor is located now, there were many old buildings. We wanted to develop this place somehow (Project manager, “Knowledge harbor”). |
<table>
<thead>
<tr>
<th>Recognition mechanism</th>
<th>Type of recognition mechanism</th>
<th>Entrepreneurial project</th>
<th>Illustrative example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alertness to internal stimuli</td>
<td>Monitoring of changes and developments in internal processes and routines</td>
<td>“3D modelling for urban development” “Cycling on familiar paths” “Daily life rehabilitation” “Exemplary math education” “Integration on two wheels” “Welfare lab”</td>
<td>“…we felt that we used too fragmented structure and that we didn’t emphasize interdisciplinarity in our organization. We felt that the current approach to public service delivery in our municipality is not sufficiently focused on the residents. The internal survey, which was conducted by the top management in our municipality confirmed our beliefs” (Project manager, “Welfare lab”).</td>
</tr>
<tr>
<td>Responding to the political agenda-setting</td>
<td>Monitoring of changes in legislation</td>
<td>“Community development program” “Eco-friendly swimming pool” “Knowledge harbor”</td>
<td>“In May 2014, I was employed and my job was precisely to figure out how to integrate the divided community at Borgen and how to develop the whole district so that it will be a nice and attractive place to live” (Project manager, “Community development program”).</td>
</tr>
<tr>
<td>Alertness to external stimuli</td>
<td>Monitoring of changes in legislation</td>
<td>“Fire prevention teddy bear” “Safer daily life”</td>
<td>“I also found that the Norwegian Directorate for Civil Protection came with a recommendation for all fire departments to put more focus on fire safety in private properties. I thought that this ‘teddy bear’ project would fit the recommendation perfectly” (Project manager, “Fire prevention teddy bear”).</td>
</tr>
<tr>
<td>Staying attentive to the needs of residents</td>
<td>“Community development program” “Exemplary math education” “Integration on two wheels” “Long-open library” “Welfare lab”</td>
<td>“We, teachers, heard constantly that the pupils hate mathematics and that they think it’s boring. That was not the case with other subjects. There was an agreement among us—teachers, parents, and pupils that some changes in the way we teach mathematics must be made. Therefore, I decided to help our students and make them interested in mathematics” (Project manager, “Exemplary math education”).</td>
<td></td>
</tr>
<tr>
<td>Inspiration</td>
<td>“Cycling on familiar paths” “Daily life rehabilitation” “Fire prevention teddy bear” “Knowledge harbor” “Long-open library” “The dream bank”</td>
<td>“Well, the very beginning of this project was actually a report of a similar project in the municipality of Bergen, which I had seen on the TV news long time ago. I thought it looked really wonderful and thought that it would be great to get such cycles here” (Project manager, “Cycling on familiar paths”).</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Resource Mobilization Mechanisms Used to Develop and Initially Implement the Entrepreneurial Opportunities

<table>
<thead>
<tr>
<th>Mobilization mechanism</th>
<th>Type of mobilization mechanism</th>
<th>Entrepreneurial project</th>
<th>Illustrative example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge mobilization</td>
<td>Seeking knowledge and experiences from similar projects</td>
<td>“Cycling on familiar paths” “Daily life rehabilitation” “Fire prevention teddy bear” “Knowledge harbor” “Long-open library” “The dream bank”</td>
<td>“The first projects of this type were implemented in Denmark. There was also one attempt in Sweden and several in Norway. To create our model we contacted other libraries and ask them about their experiences with such projects, you know, challenges and thing that worked well.” (Project manager, “Long-open library”).</td>
</tr>
<tr>
<td>Knowledge mobilization</td>
<td>Seeking knowledge from the cooperation with universities and research institutions</td>
<td>“3D modelling for urban development” “Eco-friendly swimming pool” “Exemplary math education” “Knowledge harbor”</td>
<td>“…We also got some help from Agder Research Institute to develop and implement our idea. They prepared some future scenarios for the project and came up with different suggestions and solutions. Their help mobilized us to further work with the presented alternatives” (Project manager, “Knowledge harbor”).</td>
</tr>
<tr>
<td>Knowledge mobilization</td>
<td>Seeking knowledge from the cooperation with professional consultants</td>
<td>“Cycling on familiar paths” “Eco-friendly swimming pool” “Integration on two wheels” “Safer daily life” “Welfare lab”</td>
<td>“We also hired a consulting company to further develop my idea and to help us with the needs assessment, right at the beginning, in summer 2015. They, for example, organized the whole ‘needs assessment day’, where we invited all the interested parties” (Project manager, “Safer daily life”).</td>
</tr>
<tr>
<td>Knowledge mobilization</td>
<td>Seeking knowledge and experiences from the participation in larger projects</td>
<td>“Community development program” “Cycling on familiar paths” “Exemplary math education” “Long-open library”</td>
<td>“From the beginning, we wanted to connect this project to a larger one. That’s why it became a part of a large restructuration and automatization project. As a result, we got access to the readily available administrative structure and technical knowledge and solutions” (Project manager, “Long-open library”).</td>
</tr>
<tr>
<td>Mobilization of financial and non-financial resources</td>
<td>Seeking external financial and non-financial resources</td>
<td>All projects</td>
<td>“Volunteers have been an important resource in this project. We recruited them because we don’t have enough employees. Volunteers here are the so-called ‘cycle host’. They are mainly our former employees and pensioners who worked in the health care before” (Project manager, “Cycling on familiar paths”).</td>
</tr>
<tr>
<td>Mobilization of financial and non-financial resources</td>
<td>Seeking internal financial and non-financial resources</td>
<td>All projects</td>
<td>“First, I got NOK 20,000 from the municipality to use on this project. I used it to buy teddy bears and develop the workbook. When the pilot project started giving good results, I was given another NOK 10,000 to further develop my project” (Project manager, “Fire prevention teddy bear”).</td>
</tr>
<tr>
<td>Reconfiguration mechanism</td>
<td>Type of mechanism</td>
<td>Entrepreneurial project</td>
<td>Illustrative example</td>
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<tr>
<td>Overcoming the resistance to change in the organization</td>
<td>Creation of commitment among employees to the organizational change</td>
<td>All projects apart from: “Knowledge harbor” “Eco-friendly swimming pool”</td>
<td>“I announced the project to all employees at the school. We discussed its implementation with our colleagues because we wanted to do that in a democratic way (Project manager, “Exemplary math education”).”</td>
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<td></td>
<td>Building legitimacy for the project among the top management, politicians, and residents</td>
<td>All projects</td>
<td>“In order to get the support for the project from the top, we submitted a political case to the healthcare committee for a hearing. The politicians and the top managers were positive. They understood that it was a vital project for the whole municipality” (Project manager, “Safer daily life”).</td>
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<tr>
<td>Rearrangement of organizational systems</td>
<td>Redesign of organizational routines and processes</td>
<td>All projects</td>
<td>“To implement this idea we had to change our methods of teaching. We decided to emphasize cooperation, games, and giving ‘positive’ comments in the classroom” (Project manager, “Exemplary math education”).</td>
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<tr>
<td></td>
<td>Redesign of organizational structure</td>
<td>“Daily life rehabilitation” “Welfare lab”</td>
<td>“Municipalities usually work in a kind of traditional silos. This project drilled some holes in these silos and changed the organizational structure. Now our structure shows interdisciplinarity” (Project manager, “Welfare lab”).</td>
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<tr>
<td>Managing new knowledge and experiences in the organization</td>
<td>Provision of training programs for employees</td>
<td>“Community development program” “Cycling on familiar paths” “Exemplary math education” “Long-open library” “Safer daily life”</td>
<td>“To have the sufficient support for the project implementation, we had to ensure that all the employees would be given enough training and understanding of what this project is about. That’s why, the provision of training was vital” (Project manager, “Safer daily life”).</td>
</tr>
</tbody>
</table>
|                                           | Building in the gained knowledge and experiences in the organization by supporting related entrepreneurial projects | “3D modelling for urban development” “Daily life rehabilitation” “Eco-friendly swimming pool” “Fire prevention teddy bear” “Integration on two wheels” “Knowledge harbor” “Welfare lab” “The dream bank” | “Our project revolutionized the municipal approach to building public infrastructure. That was also, kind of, our intention. For example, in February 2014, the politicians decided that a local kindergarten would also be built in a similar, sustainable way. One of my workers, who has worked on this project, became the manager of the kindergarten project. Guess what? He has used the same design and solutions as we did in this project.” (Project manager, “Eco-friendly swimming pool”)


- Dissatisfaction at the workplace with the service delivery and tasks performance
- Political agenda setting

- Changes in the local society
- Changes in resident needs
- Successful projects in other organizations
- Existence of a deteriorated area

- Monitoring of changes and developments in internal processes and routines
- Responding to the political agenda-setting

- Monitoring of changes in legislation
- Staying attentive to the needs of residents
- Inspiration

- Seeking knowledge and experiences from similar projects
- Seeking knowledge from the cooperation with universities and research institutions
- Seeking knowledge from the cooperation with professional consultants
- Seeking knowledge and experiences from the participation in larger projects

- Seeking external financial and non-financial resources
- Seeking internal financial and non-financial resources

- Creation of commitment among employees to the organizational change
- Building legitimacy for the project among the top management, politicians, and residents

- Redesign of organizational routines and processes
- Redesign of organizational structure

- Provision of training programs for employees
- Building in the gained knowledge and experiences in the organization by supporting related entrepreneurial projects

Figure 1. Data structure
Sources of opportunities:

**Internal:**
- Dissatisfaction at the workplace with the service delivery and tasks performance
- Political agenda-setting

**External:**
- Changes in the local society
- Changes in resident needs
- Successful projects in other organizations
- Existence of a deteriorated area

Recognition mechanisms:
- Alertness to internal stimuli:
  - Monitoring of changes and developments in internal processes and routines
  - Responding to the political agenda-setting

- Alertness to external stimuli:
  - Monitoring of changes in legislation
  - Staying attentive to the needs of residents
  - Inspiration

Resource mobilization mechanisms:
- Knowledge mobilization

Opportunity recognition

Opportunity development and initial implementation
- Mobilization of financial and non-financial resources

Reconfiguration mechanisms:
- Overcoming the resistance to change in the organization
- Rearrangement of organizational systems
- Managing new knowledge and experiences in the organization

Opportunity exploitation

Figure 2. Dynamic Managerial Capabilities of Front-line Managers