
Innovation Strategy Formulation Supported by ISO 56000: Public Organization Experiences

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Abstract: This paper addresses the innovation strategy formulation in public sector organizations. Specifically, it focuses on the innovation strategy formulation process, document output and the support ISO56000 innovation management standards provide for such a formulation process. Therefore, this paper presents a case study in a Swedish municipality formulating an innovation strategy. As a result, the paper describes the two main innovation strategy formulation phases: the experimental pre-phase and the emergent strategy phase with its sub-phases and the contributing actor-stakeholders. Furthermore, it reveals the areas where the innovation management standards supported the innovation strategy formulation process and its output. Moreover, the paper illustrates the challenges the political-administrative nature of organizing in the public sector causes for innovation work. The paper contributes to the literature on strategic management, especially public sector innovation management literature regarding innovation strategy planning and innovation management standard use in a municipal context.

Keywords: innovation management; innovation strategy; strategy planning; strategy formulation; strategy support; public sector; municipality; ISO standards; ISO 56000; ISO 56002, Sweden

1 Introduction

In many countries, the public sector is under severe pressure from various new challenges and increased demands. Public sector is public revenue, i.e. tax-funded civil service and public administration (Potts and Kastle, 2010), and public sector organizations are state-owned, under contract to the state or regulated or subsidized in the public context (Flynn, 2012). Typically, public policy and administration problems are considered complex and wicked (e.g. Laihonon et al., 2023). The current public sector paradigm, The New Public Management (NPM), entails the idea of innovation as central to the public sector's ability

to deal with these challenges and demands (e.g. Buchheim et al., 2020; Demircioglu and Audretsch, 2017).

Public sector innovation with its vast, heterogeneous empirical field (Nählinder, 2013) is a rather novel, diverse and multidisciplinary research area with scattered and non-theoretical tendency, that has not been in the focus of mainstream innovation literature (e.g. De Vries et al., 2016; Nählinder, 2013; Nählinder and Eriksson, 2019; Potts and Kastle, 2010; Wihlman et al., 2016). Public sector innovation is not thoroughly studied, yet regarded as a different breed from innovation in industrial or commercial organizations (Nählinder, 2013; Potts and Kastle, 2010). Due to the political-administrative nature, the public sector organizations (Laihonen et al., 2023), have three conflicting steering principles of democracy, 'rechtsstaat' and the welfare state (Nählinder, 2013; Nählinder and Eriksson, 2019). Consequently, the public sector generates distinctive innovations such as governance, paradigm (Buchheim et al., 2020), policy, and democracy innovations, concepts that are considered compatible with the present innovation theory (Wihlman et al., 2016). Yet, the lack of conceptual congruity hinders the public sector innovation research (Varadarajan, 2018; Wihlman et al., 2016), and in municipalities, even the innovation concept is not understood neither at applied nor abstract levels (Nählinder, 2013; Nählinder and Eriksson, 2019). Furthermore, examples of successful public sector innovations are mainly yielded by lucky accidents, not as strategic outcomes of deliberate, generalizable plans (Potts and Kastle, 2010). Thus, NPM has not led to increased innovativeness (e.g. Wihlman et al., 2016), and organizations vary in their propensity to innovate systemically, although management and organizational strategies can influence the innovative activity (Demircioglu and Audretsch, 2017). Furthermore, the knowledge of the innovation strategy is an important management tool to foster innovative work behaviour in municipalities (Phil-Thingvad and Klausen, 2020). In other words, innovation is not strategically managed in public sector in general, although the importance of existing and implemented innovation strategy in all organization types has been emphasized by e.g. Hyland (2022). However, studies of innovation policies and strategies in public sector are scarce and carried out in different levels (e.g. Johanson, 2021; Sotarauta et al., 2022). Moreover, innovation research in municipalities, is rare (Nählinder, 2013; Nählinder and Eriksson, 2019), especially in relation to their innovation policies and strategies (Wihlman et al., 2016).

With the aim to support innovation work in organizations in all sectors, International Organization for Standardization (ISO) has recently started to publish a standard series in innovation management, namely the ISO56000 (ISO, 2020, 2019). So far, the research on how and to what extent organizations adopt or utilize the ISO innovation management standards is limited. Consequently, there is an apparent scarcity of validated research on the perceived support from the standards during the innovation strategy formulation in organizations, hence also in public sector organizations, such as municipalities. Thus, there is a need for more knowledge on how innovation strategy is formulated in public sector context and how ISO standards can support this work, through making leaders more confident and approach innovation strategy formulation.

The goal of this article is to describe and clarify the process and output of innovation strategy formulation and the perceived in-process support gained from ISO56000 standards, focusing on the context of a public sector organization, specifically a municipality. The case context of the study is a municipality in Sweden in a process of formulating their innovation strategy. Therefore, our research questions are as follows:

How does an innovation strategy formulation process come about in a municipality context?

How can innovation management standards support an innovation strategy formulation?

2 Innovation strategy in public sector organization

Public sector innovation

Mainstream innovation literature has not focused on innovation in the public sector (Nählinder, 2013). Although there is an interest towards public sector innovation (Demircioglu and Audretsch, 2017), the research in the field is considered scattered and non-theoretical (De Vries et al., 2016; Nählinder, 2013; Nählinder and Eriksson, 2019; Potts and Kastle, 2010; Wihlman et al., 2016). Particularly, the ways public sector can be innovative itself, public sector innovation processes (Wihlman et al., 2016), and innovation outcome have not been thoroughly addressed (Buchheim et al., 2020; De Vries et al., 2016; Nählinder and Eriksson, 2019). Furthermore, there is a notion, that public sector innovation differs considerably in character from innovation in general (Nählinder, 2013). One aspect that hinders the theoretical foundation building in the public sector innovation research is the lack of conceptual congruity (Wihlman et al., 2016), which starts with the basic term of innovation (Nählinder and Eriksson, 2019). The term innovation is sometimes used to describe different but related phenomena (De Vries et al., 2016), such as innovation as outcome, innovation process and innovation support (Nählinder and Eriksson, 2019). Furthermore, sometimes innovation in public sector is seen as a subset of innovation in private sector (Nählinder, 2013). However, the reasons for public sector's uniqueness as a domain arise, for example, from its guiding economic principle of efficiency with finite budget. Thus the public sector organizations do not compete through innovation, yet must create value, which requires innovation (Potts and Kastle, 2010). Nählinder and Eriksson (2019) emphasize that identifying innovations in a public organisation of private sector innovations, requires double translation: 1. the translation from producing products to delivering services, 2. the innovation from enterprise, market, or private sphere to more complex and heterogeneous government or public sphere. In public sector, the major innovation impacting issues are the three, conflicting steering principles of democracy, 'rechtsstaat' i.e. state of rights and the limitation of a government's power by law, and the welfare state (Nählinder, 2013; Nählinder and Eriksson, 2019). Thus, the public sector has adhered simultaneously to three different goals (Nählinder, 2013). Therefore, the value creation takes different forms in public sector, too (Nählinder and Eriksson, 2019). In addition, the different goals and value creation forms affect the innovation outputs. Public sector produces specific types of innovations of governance, paradigm (Buchheim et al., 2020), policy, and democracy innovations (Wihlman et al., 2016) alongside traditional product/service and process innovations (Buchheim et al., 2020). Particularly process innovations have been the output of public sector innovation research reports.

In the studies of public sector innovation enablers and barriers, support from the top, resources for innovation, encouraging staff to innovate, involvement of end-users, attention to the views of all stakeholders, and change and risk management have been discovered as enablers, whereas short-term budgets and planning horizons, inadequate skills in active

risk or change management, culture of risk aversion, delivery pressures, and administrative burdens have been detected as barriers (Wihlman et al., 2016).

Innovation Strategy research

Among seven strategy research discourses, Lamberg et al. (2022) situate innovation theories and models as part of the “*Resources and Capabilities*” -discourse together with Knowledge management theories and models. As other main discourses there are also “*Strategy Content*” and “*Strategy Process*” discourses.

Innovation in public sector is high on the policy agenda (Nählinder, 2013). Yet, the results of Demircioglu and Audretsch (2017) in public sector showed that organizations vary in their propensity to innovate systemically, however management and organizational strategies can influence the innovative activity. Furthermore, examples of successful public sector innovations are mainly yielded by lucky accidents, not as strategic outcomes of deliberate, generalizable plans (Potts and Kastle, 2010). That is, in general innovation is not strategically managed in public sector. However, more than two decades it has been known that “*Innovation strategy is critical in directing organisational attention*” (Lawson and Samson, 2001, p. 390). A multifaceted, heterogeneous environment, in which there are budget in addition to the political coalitions, which should not be provoked, makes the formation and implementation of an innovation strategy challenging (Potts and Kastle, 2010). For example, Hyland (2022) have highlighted the significance of existing and implemented innovation strategy in all organization types, thus also public sector organizations. Leadership is considered the consistent, integral, and focal factor in organizational innovation across different innovation types and phases with two main tasks (Alsolami et al., 2016; Carmeli et al., 2010; Denti and Hemlin, 2012). First, leaders lay the foundation for an organizational environment and culture that enables creativity, and thus promotes innovation (Alsolami et al., 2016; Carmeli et al., 2010; Denti and Hemlin, 2012). Second, leaders envision the innovation goals i.e., in an innovation strategy and put the innovation activities into practice, which includes the process of leading the company’s innovation portfolio strategically, too (Alsolami et al., 2016; Denti and Hemlin, 2012). Additionally, in public sector innovation studies the support from the top and encouraging staff to innovate are regarded as enablers (e.g. Wihlman et al., 2016).

Innovation studies in municipalities are scarce. Nählinder (2013) and Nählinder and Eriksson (2019) have studied Swedish municipalities and notice that managers perceived the concept of innovation in different ways. Especially practitioners experienced difficulties in relating to the concept both at applied and abstract levels. Therefore, the researchers emphasized that understanding the concept is crucial. Innovation policies and/or strategies in public sector are studied to some extent, and studies are detectible in different organization levels. For example, Sotarauta et al. (2022) have researched innovation strategy and policy in state level in Finland, e.g. Johanson (2021) the strategies of government agencies in Finland and Sweden, e.g. Wihlman et al. (2016) strategies and policies at municipal level in Sweden and Phil-Thingvad and Klausen (2020) in Denmark. Especially studies of innovation policies and strategies in municipalities are scarce and have not focused on strategy building processes and their support mechanisms or the strategy outcomes. Wihlman et al. (2016) have studied innovation policies in four Swedish municipalities and regarded as policies the strategies, policies, visions, and other such municipal innovation documents that were processed at the highest political and management level and draw the objective for management. Their focus of the study was

the implementation of innovation policies and the differences in attitudes between senior and middle management. Their results showed that senior management had more negative attitudes towards the innovative capacity of their organisation, whereas middle management saw possibilities. Extensive control systems were detected as barriers of innovation. Their suggestions were that generative leadership, opening communication especially between employees would be beneficial, and that a common understanding and definition of the innovation concept is needed. Phil-Thingvad and Klausen (2020) studied the effect of management strategies and behaviours on the innovative work behaviour in one large municipality. Their result highlighted e.g., that the knowledge of the innovation strategy is an important management tool to foster innovative work behaviour in municipalities.

ISO56000 and innovation strategy

In the innovation literature, there is a lack of unanimous definition of innovation strategy. Varadarajan (2018) suggests definition for Innovation strategy as “*a firm’s relative emphasis on different types of innovations and the associated pattern of resource allocation, in alignment with its strategy at the corporate, business unit and functional levels.*” (Varadarajan, 2018, p. 161) However, this definition lacks rigor conceptualization with extended innovation literature.

With its standards, ISO aims to provide a “*formula that describes the best way of doing something*” (ISO - Standards, 2023). Since 2019 ISO has published series of innovation management related standards, which in total will incorporate eight parts. ISO56000 standard defines innovation strategy as “*strategy with regard to innovation*” and strategy as “*plan to achieve objectives*” (ISO, 2020). Moreover, innovation objective is an “*objective regard to innovation*” (ISO, 2020) based on the organization’s innovation strategy and policy, and generally specified for relevant functions, levels, initiatives and processes. Furthermore, the standard’s notes emphasizes that innovation strategy should be consistent with organization’s general strategy and direction, as well as aligned with the innovation vision and policy. In fact, the alignment of strategies: the core technology to innovation and business strategies, has been mentioned in the literature for two decades (Lawson and Samson, 2001). Additionally, innovation strategy in standard is regarded to “*include descriptions*”, and should be ensured it “*is maintained as documented information*” (ISO, 2019), therefore innovation strategy can be interpreted as a descriptive document or documents, either tangible or digital. The descriptions in innovation strategy can cover in section 5.1.4.2. “*a) the context of the organization; b) innovation vision and policy; c) roles, responsibilities, and authorities; d) innovation objectives and the plans to achieve them; and/or e) organizational structures; e) support and processes, including allocation of resources.*” (ISO, 2019).

3 Methods

Innovation strategies is a novel concept particularly in municipal organizations. Thus the nature of this research is exploratory (Saunders et al., 2008). As the aim of this study is to clarify the innovation strategy formulation and its output in public sector organization, the philosophical program of this study is pragmatism (Morgan, 2014). The research strategy

of the study draws from an intensive case study approach (Eriksson and Kovalainen, 2008). The case organization (Siggelkow, 2007) was chosen due to its idiosyncrasy (van Maanen et al., 2007). The organization under research is a municipality in Sweden with an innovation strategy formulation process in 2021–2022, with a partly concurrent three-year innovation project 2019–2022 that aimed to develop the organization’s innovation culture. The municipality is a multi-disciplinary organization providing versatile services of e.g., social welfare, education, leisure time and culture, building and environment.

Regarding the innovation strategy formulation, the focus of this study, the research data collection has been a document study of the published innovation strategy and comparative analysis against especially ISO56002, the innovation management system guidance standard, and reflective interviews on the innovation strategy formulation of the period of October 2019–February 2022. The eight interviews have been conducted between late March early April 2023 with purposive selection of six organization members and two external consultants. The lengths of the interviews were ranging from 78–83 minutes (innovation manager and innovation leader), 52–68 minutes (four municipal managers) up to 81–87 minutes (consultants). In this study, we concentrated only on the strategy formulation. The descriptive case data analysis of the strategy formulation process and the strategy output of published innovation strategy document has been carried out in data and researcher triangulation (Langley and Abdallah, 2011). The principal researcher of this study also collected the secondary data of the innovation project with participatory action research, with both physical and virtual participation of project activities of workshops, intra-organizational participant interviews and interactive discussions during 2019–2022.

4 Results

The results of this study are two-fold. First, we present the innovation strategy formulation process with its pre- and sub-phases. Second, we present the innovation strategy document analysed against specifically ISO 56002 Innovation management system (ISO, 2019).

Innovation strategy formulation process: actors and phases

Multiple stakeholders impacted as actors in the innovation strategy formulation process in the case municipality (Table 1). We discovered eight actor groups: three official political municipal organs, two municipal administrative organs, and three temporary groups, which included both internal employees and external participants. All the actors were involved in the discourse needed for the strategy formulation in different phases of the process (Figure 1). The administrative organs and temporary groups were involved in the document formulation as informants and commentators. The political organs carried out the official municipal decision-making process, however, were also involved as informants in the document formulation dialogue.

The innovation strategy formulation of the case municipality (Figure 1) took place in 2021–2022 partly parallel with a three-year, semi-subsidized innovation project. The aim of the innovation project was to strengthen the innovation capacity of the municipality with activities of e.g., training and hackathons. During the innovation project, there was a joint understanding in the management, that the innovation work should continue after the project — in a more long-term format. However, there was no consensus regarding the

measures to achieve this. Halfway into the innovation project, an idea of municipal innovation document arise, which crystallized as innovation strategy with the guidance from ISO56000 innovation standards, particularly ISO56002 (ISO, 2020, 2019).

Table 1 Actors of the innovation strategy process

<i>Actors</i>	Roles of the stakeholder groups <i>Tasks of the stakeholder groups</i>
<i>Strategy writers' group</i>	Included the municipality's innovation manager (IM), and an innovation leader (IL), and two innovation consultants (IC). <i>IM: responsible for innovation management in the municipality, member of Municipal Directors Management Group MDMG, and carried out dialogue with all stakeholders; IL: responsible for innovation activities in the municipality, involved in the stakeholder dialogues; ICs: brought expertise to the process - one with long experience on strategy building, and the other was very informed about ISO innovation management standards. Members of Strategy writers' group were also involved in the innovation project.</i>
<i>Municipal Director's Management Group MDMG **)</i>	MDMG is the administrative organ with leaders of the nine municipal service areas, such as economy, education, social welfare work. The Municipality Director (MD) is the highest administrative director in the municipality with the responsibility of overall leadership. <i>MDMG: the first administrative organ that read and commented on the innovation strategy document draft, was also involved in the innovation project; MD: discussed with the strategy writing group throughout the strategy formulation process and influenced the choices in the process.</i>
<i>Digitalization strategy group</i>	Digitalization strategy was adopted by Municipal Council 2021-04-28. <i>Participated in the innovation strategy dialogue.</i>
<i>Innovation project participants</i>	Participants of the innovation project were approximately two hundred employees of municipality's 1100 that engaged in the three-year-long innovation project. <i>Voluntary participants commented on the innovation strategy document draft.</i>
<i>Municipal Board MB *)</i>	The MB is the highest executive body of the municipality. The MB is also responsible for preparing cases for the Municipal Council (MC). <i>MB gave its permission to proceed with the innovation strategy to the MC.</i>
<i>Municipal Board Presidium MBP *)</i>	Three chairpersons of the MB: chairperson, 1 st . and 2 nd vice chairpersons <i>MBP gave its comments on the innovation strategy document draft in 3-4 discussions. Had an ongoing dialog with IM.</i>
<i>Manager's meeting **)</i>	Meeting of managers representing all the municipal service areas <i>Manager's meeting 2021-09-16 gave its insights regarding the resource allocation of innovation strategy work and innovation strategy focus areas</i>
<i>Municipal Council MC*)</i>	MC is the highest decision-making body in the municipality. It has 31 members, elected every four years by the residents in general elections. <i>MC gave its decision of the innovation strategy's adoption in the municipality's innovation work</i>

*) Official political municipal organ, **) Municipal administrative organ

The ISO-guided strategy work started in the group of four strategy writer's with self-motivated seminar series, which entailed competence building by familiarizing with the Body of Knowledge (Innovationsledarna, 2020), i.e., documents and videos regarding innovation, and examining the ISO56000 and 56002 standards. Collateral with competence building, the municipality's steering documents, such as vision, were studied for reference. The competence building and knowledge seeking of the strategy writer's group laid foundation for the direction setting of the strategy work. The ISO-guided document formulation started with decisions of the focus areas that developed to the titles of the document, PDF as document format, and the involvement level of the political decision making. During the document formulation into its final form, multiple stakeholders were involved that contributed to the output. The involvement was carried out with both ongoing dialogue with MD, MDMG, and MBP, as well as targeted events such as Municipal Managers' meeting with over 50 municipal participants. The stakeholders' contribution was incorporated into the document with several referral rounds. Mainly the feedback from e.g., MBP was positive.

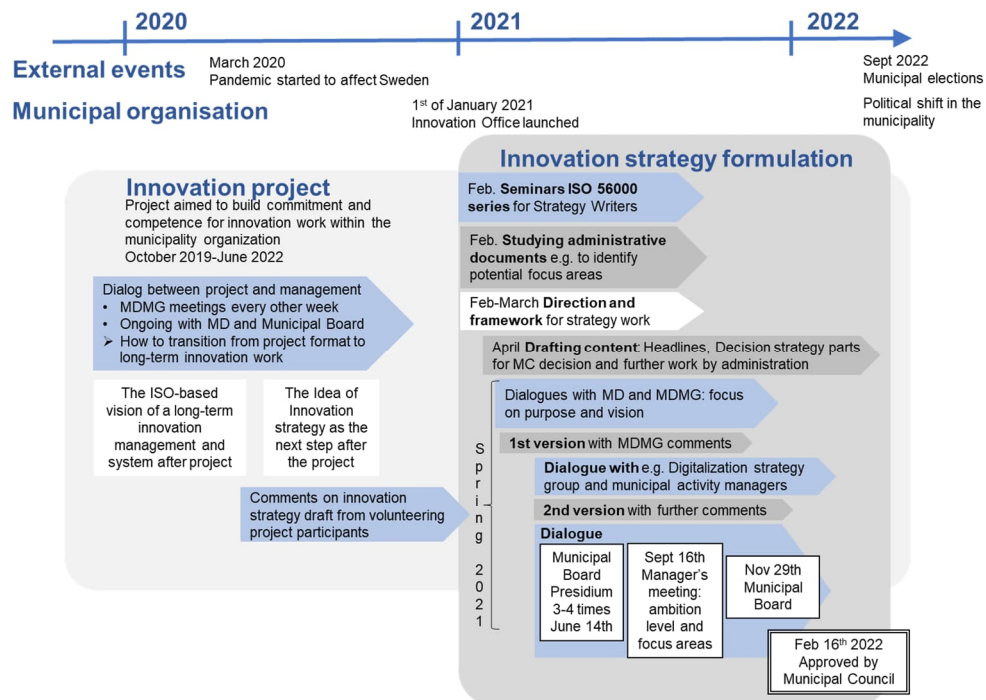


Figure 1 Innovation strategy formulation process including activities within the innovation project relevant for the innovation strategy formulation

After the innovation strategy document was finalized, it went through the municipal decision-making via MB to MC and was accepted in MC with some opposing remarks in the discussion. Therefore, from the innovation strategy formulation process it can be detected a pre-strategy phase prior to the strategy formulation phase, where the strategy emerged. The pre-strategy phase was project-based experimenting with organization-wide innovation work, which yielded a need for long-term management of innovation. Innovation is a cross-functional activity in a multifaceted municipality as political-administratively led public sector organization. The strategy formulation phase signifies

the strategy formulation process with competence building, knowledge seeking and dialogue-based creation of innovation strategy document, which ended with an official approval of the municipality's innovation strategy on February 16th, 2022. The final innovation strategy entails 10 pages and contains descriptions and definitions of core concepts, the aimed ambition level regarding resources, values, and value creation, focus areas for innovation and priority setting among others.

Challenges in the strategy formulation process

The challenges in the innovation strategy formulation were described in the interviews as e.g., “*Tension point of public organization and understanding of strategy in municipality*”. Furthermore, the complex hierarchy of both political and administrative organs were emphasized, i.e. the political-administrative nature of municipal decision making. That duality and complexity of public sector governance makes working with cross-functional issues difficult due to siloed responsibilities and budgets in multiple service areas. Previously the change and development work seem to have stagnated, which was perceived caused by the lack of both allocated innovation resources and prioritization of innovation work. Yet, setting resource allocation to a particular e.g. percentage, may raise another challenge: what to count as innovation work? Moreover, the multifaced supply of municipal services made defining both the value and innovation in municipal context necessary, yet complex. Values and the dialogue of organization's values were regarded as being in the core of the innovation work. It was commented that one form of innovativeness in municipalities is being more efficient, which the employees have grown accustomed to. Then again, in a constantly changing world, to meet the change, the municipalities and their employees must change, too.

Value of a politically approved innovation strategy

It was accentuated in the interviews that there was a value of having a politically approved innovation strategy as such. Even though some municipal employees do not even read steering documents due to the diversity of backgrounds and focus of the daily work, it was found beneficial to have a politically approved strategy document for innovation. This is due to the fact, that innovation is cross-organizational activity, which e.g., resources are jointly allocated. Without political approval the goal setting and resource allocation, for example, are challenging, even complex in a multi-disciplinary organization with both administrative and political governance. Having a politically approved steering document reinforces the mandate of innovation management and activities in all parts of the organization.

Experiences in using ISO 56002 in innovation strategy document formulation

The analysis of the case municipality's innovation strategy document was carried out as comparative study against the ISO innovation standards, especially ISO56000 Fundamentals and vocabulary (ISO, 2020), and ISO56002 Innovation management system guidance (ISO, 2019). The ISO56000 gives general definitions on innovation strategy, whereas ISO56002 gives guidelines of the descriptions a documented innovation strategy could entail. The municipality's innovation strategy includes the purpose of the innovation strategy and description that it should guide the organization's innovation initiatives, give

direction for the future, and guide important decision related to innovation work. The document's description also links it to the overall strategy goals and budget of the municipality, and their priority setting, thus the document is compatible with the ISO56000 definitions and notes of innovation strategy. The main points of the analysis against ISO56002 are found in Table 2.

Table 2 Comparison of content ISO 56002 and municipality's innovation strategy

<i>ISO56002</i> (ISO, 2019)*	Adopted Key elements and their extent <i>Examples from the innovation strategy document</i>
<i>Context of the organization</i> (4.1)	Both internal and external context, and needs of innovation Complex and changing demands in the surrounding world implies a need to handle such changes. Internally, innovation is considered to be relevant for all the municipality's service areas and employees. <i>... will follow developments in other municipalities, regions, organizations, and companies. ...both national and international trends.</i>
<i>Culture</i> (4.4.2)	A culture that supports innovation activities should be promoted Employees should be allowed to be creative, to experiment, and there should be a tolerance for failure. <i>...support from top management facilitates for employees and managers to contribute to a good innovation culture.</i>
<i>Focus on value realization</i> (5.1.2.)	Focus on creating value Value can be economic as well as non-economic <i>... focus the innovation work on creating value for users, residents, business, and civil society in the municipality</i>
<i>Innovation vision</i> (5.1.3)	Innovation vision An ambitious description of future state aimed for. <i>The municipality shall be a modern organization with an innovation culture where all employees have the conditions and willingness to participate with their skills and commitment - in systematic and value-oriented work with a focus on innovation - where the needs of both current and future residents as well as the knowledge-intensive business community are at the centre.</i>
<i>Innovation objectives</i> (6.2.1)	Ambitions and focus areas A number of statements describing ambitions and focus areas (as long-term direction for innovation work) <i>Focus areas until 2030: The welfare mission and welfare technology; Attractiveness for residents and businesses; Skills supply; Lifelong learning; Sustainable society</i>
<i>Support</i> (7)	Resources, competence, tools, and methods for innovation activities Statements on resources, continuous learning for competence building, including training and ability to use relevant tools. <i>Innovation work is a part of the core mission and thus to be prioritized the least 5% of the organization's financial and human resources</i>
<i>Performance evaluation</i> (9)	Long-term view including continuous evaluation and adaption Continuous evaluation and adaption a key activity for strengthening innovation capabilities. Evaluation to be done regarding: steering, competence, and innovation capabilities. <i>Long-term view: follow up, evaluate and learn from both mistakes and successes in order to create even more value.</i>

*) Clause 5.1.4 Innovation Strategy in ISO56002 excluded in analysis, due to being the focus of the entire paper.

It can be noted that elements such as Roles and responsibilities (clause 5.3), Operations (clause 8), and Organizational structures (clause 6.3) to achieve the ambitions did not surface in the analysis. It was due to that the innovation strategy did not specify those. Since the innovation strategy aimed at political approval, those elements were intentionally excluded from the document to enable the municipal organization the freedom to execute the innovation strategy in the suitable way for its service areas.

The interviews revealed that both the strategy writers and managers perceived that ISO-standards worked as a guideline and structure providing support for document formulation. Yet, using ISO innovation management standards demanded competence building for the strategy writers, as well as overall acceptance of the standard use in the municipal management. The managers reflected, that having a standard was a reliable source for support, instead of having something self-invented, in-house approach. The gain of ISO standards in innovation strategy formulation was that as a steering document, innovation strategy is just one part of the organization's innovation management system, thus the standards provided a broader and common framework for discussing different viewpoints for long-term development of the organization's innovation work. Furthermore, in practical level, the standard gave structure concerning the titles, i.e., strategy focus areas, yet not guidance what the document should look like. Together with the standards, the strategy writers used the Body of Knowledge document (Innovationsledarna, 2020), which facilitated the strategy formulation process. In turn, the structure of the Body of Knowledge text is aligned with the ISO standard.

5 Discussions and conclusions

The results of this article fill a prominent research gap in the intersection of strategic management, innovation management and public sector innovation. Drawing conclusions from a case study in a Swedish municipality, this paper makes several contributions.

The results to our first research question "*How does an innovation strategy formulation process come about in a municipality context?*" illustrate, that strategy formulation process had a pre-strategy phase with experimental innovation project prior to the formulation phase where the strategy emerged in the form of an innovation strategy document. We observed the pre-phase generating 'triggers' of needs for long-term innovation view and clarity of the direction, as well as understanding of these needs. Moreover, the strategy formulation phase had several sub-phases and multiple stakeholder groups as actors: official political municipal organs, municipal administrative organs, and temporary groups. Besides drafting the strategy document, the strategy formulation required competence building, knowledge seeking and dialogue between multiple actors prior to the political approval, thus revealing the political-administrative nature of public sector organizing (Laihonen et al., 2023). However, even if all municipal employees do not actively read steering documents, having an innovation strategy (c.f. Phil-Thingvad and Klausen, 2020), especially with a political approval, was perceived as a positive aspect, since it reinforces the mandate for e.g., the resource allocation, which is complex for innovation as a long-term cross-organisational activity in a multi-disciplinary public sector organization.

The results to our second research question "*How can innovation management standards support an innovation strategy formulation?*" show that especially ISO56002 standard supported the strategy formulation process as guidance applicable for public sector organization with context adaptations. The process output, i.e., the innovation

strategy document included most standard recommended descriptions. Yet, applying ISO innovation standards required competence building for the strategy writers. However, both the strategy writers and the administrative leaders found the standards beneficial for providing a structure to the document, instead of inventing an in-house approach. Of our results it can be concluded that strategy formulation process in municipal organization context may have a pre-phase that includes experimentation, followed up by the strategy formulation phase, where the strategy emerges, which can benefit from cross-organizational dialogue with both administrative and political organs as well as political approval. Moreover, an ISO56002 standard supports the innovation strategy formulation by serving as a structure providing guideline in a public sector organization.

Contribution of our results are manifold. First, contribution is to the literature of strategy planning (e.g. Lamberg et al., 2022), especially innovation strategy planning (Varadarajan, 2018), as it clarifies the different phases, actor groups among the stakeholders and contributors of innovation strategy formulation. Second, the contribution is to the public sector innovation, particularly in a municipality context with its case description, since innovation studies in municipal context are so far scarce (Nählinder, 2013; Nählinder and Eriksson, 2019; Phil-Thingvad and Klausen, 2020). Third, the contribution is to the innovation management literature in regards to the concept of innovation strategy (Hyland, 2022; Phil-Thingvad and Klausen, 2020; Varadarajan, 2018; Wihlman et al., 2016) by presenting a description of the innovation strategy content formulated with the support of ISO56000 standards (ISO, 2019) in practice. As practical implications, we want to encourage leaders to observe the status of their innovation work within their organization (e.g. Alsolami et al., 2016; Carmeli et al., 2010; Denti and Hemlin, 2012; Phil-Thingvad and Klausen, 2020). For example, the public sector organization may be in pre-strategy phase where it would be fruitful for leaders to initiate an innovation strategy formulation. Since, if leaders fail to plan, the organization plans to fail in innovation, as having an innovation strategy is a key to long-term innovation work, which can be supported by the available global innovation standards as guideline.

This is single case study, therefore it has limitations, which should be further researched regarding e.g., deployment, as well as by the gathering more cases and following more organizations over time.

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