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Inter-Agency Task Force on
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Cooperative Associations: Frameworks of Distributed Leadership for Collective Digital Innovation

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COOPERATIVE ASSOCIATIONS: FRAMEWORKS OF DISTRIBUTED LEADERSHIP FOR COLLECTIVE DIGITAL INNOVATION

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Abstract:

Digital innovation and transformation have been mainly studied at the level of a single organization: in the cooperative movement, platform cooperative have triggered a lot of attention, with exciting studies about the potentials and limitations about how a digital platform can integrate into a cooperative governance. However, digital innovation at the level of a group of cooperatives, such as automated data-sharing systems, has remained (to our knowledge) unexplored, leaving scholars and practitioners with poor knowledge and material to support a large-scale digital transition of the cooperative movement. This paper aims at contributing to fill this gap by studying how a group of cooperatives or social economy organizations can collectively take leadership over a digital project within the framework of a meta- organization – more commonly known as a cooperative association or umbrella organization. To do so, we shaped a theoretical model mobilizing the emerging theory of meta-organizations (Ahrne & Brunsson, 2005) together with concept of distributed leadership (Huxham & Vangen, 2000), and conducted a preliminary qualitative study based on two cases in Quebec. This enables us to identify configurations preventing or supporting the emergence of collective digital projects, by taking into account characteristics of both the meta-organization and its members. We believe that such findings could open a new stream of research on cooperatives adopting inter-organizational collaboration as a unit of analysis, and help cooperative practitioners in conducting complex data-sharing innovations.

Keywords: *Digital Innovation; Distributed Leadership; Meta-Organization; Cooperative Association; Social Economy*

1. Introduction and context

Cooperative associations can be characterized as meta-organizations: their members are themselves organizations, rather than individuals (Ahrne & Brunsson, 2005). They assume a dual function of stabilization and change (Harter & Krone, 2001). Firstly, a cooperative association is established to organize and stabilize relationships among its members (e.g.: principle of inter-cooperation), but also between its members and their external environment (e.g.: public relations and advocacy) (Valente & Oliver, 2018). A cooperative association's second function consists of fostering adaptation to external environment's mutations, by stimulating change and innovation among its field (e.g.: programs of cooperative entrepreneurship) (Berkowitz, 2018; Steinfield et al., 2005).

Since cooperative associations don't have a hierarchical relationship with their members, conducting a strategy for change entails mechanisms which fundamentally differ from primary organizations (Gulati et al., 2012). Typically, conceiving change as driven by an individualistic,

heroic, and visionary leader is hardly applicable to a cooperative association. Cooperative associations may rather be viewed as frameworks of distributed leadership. Distributed leadership refers to a change process distributed among several organizations and across their respective boundaries, to reach a common goal (Denis et al., 2012).

Although apparently relevant to study change within the framework of a meta-organization, we noted that, to our knowledge, current studies in distributed leadership are yet to integrate meta-organizations in their conceptual frameworks. Conversely, meta-organizations' leadership capabilities are yet to be theorized (Berkowitz et al., 2022).

Our research aims to address this knowledge gap by proposing a theoretical model to identify mechanisms allowing and preventing the emergence of a collective digital project within the framework of a cooperative association. The theoretical model will be founded upon three key theoretical bricks. First, the concept of distributed leadership, as proposed by Denis et al. (2012) and Huxham and Vangen (2000). Second, the concept of meta-organization, as proposed by Ahrne and Brunsson (2005) and which is being extensively mobilized by researchers such as Berkowitz to study innovation governance frameworks (Berkowitz, 2018; Berkowitz et al., 2022). Third, the perspective of situated change applied to inter-organizational information systems (IOIS), as proposed by Reimers et al. (2014) and which focuses on inter-organizational practices of collaboration.

The theoretical model is empirically tested and improved through exploratory qualitative research consisting of a comparative case study. Studied cases will be two social economy meta-organizations in Quebec which have conducted a digital strategy involving their members. One meta-organization is a cooperative association, and the other will be a federation representing non-profit organizations (*organismes à but non-lucratif*).

Our paper contributes to the study of distributed leadership, meta-organizations, and inter-organizational information systems. It proposes a theoretical model to identify the mechanisms enabling the emergence of a collective digital innovation within the framework of a cooperative association. Empirically, we demonstrate how the principle of cooperation among cooperatives can be operationalized through the collaborative framework offered by cooperative associations. Finally, our research offers practical insights for managers of cooperative associations looking to design and implement change strategies that engage their members in a collective digital project, while maintaining their cooperative identity and values.

2. Theoretical background

The paper is based on three theoretical bricks: the emerging theory on meta-organizations (a), the literature on inter-organizational information systems (IOIS) (b), and the concept of distributed leadership (c).

a. Meta-organizations: collective governance for stability and change

The sixth cooperative principle focuses on the structures enabling the cooperative movement to develop and strive. "Co-operatives serve their members most effectively and strengthen the

co-operative movement by working together through local, national, regional and international structures” (International Co-operative Alliance, 2015, p. 71), especially through “[n]ational co-operative federations and national apex organizations” (p. 74), as well as “[s]econdary co-operatives, which are co-operatives whose members are primary co-operatives in a particular business sector” (p. 75) and transnational networks such as the International Co-operative Alliance and its regional offices.

All such entities fall under the concept of *meta-organization*, which describe an organization whose members are themselves organizations, rather than individuals (Ahrne & Brunsson, 2005). If the cooperative movement is characterized by a vast network of apex organizations, meta-organizations are present well beyond this specific family of organizations – actually, in virtually all sectors. Famous examples of meta-organizations include the United Nations, FIFA, and the banking system SWIFT. In Belgium, Brussels presents a particularly rich ecosystem of meta-organizations, federating national (e.g.: European Council) and local governments (e.g.: European Committee of the Regions) and parliaments, as well as private sector (e.g.: BusinessEurope) and civil society organizations (e.g.: CONCORD), but also local organizations (e.g.: Fédération des Entreprises Belges, Fédération Francophone des Cercles d'Escrime de Belgique, etc.).

While diverse in their scope and structures, meta-organizations present some common characteristics which make them fundamentally different from individual-based organizations. Their main function is to organize their members’ environment (and hereby decrease uncertainty), by regulating interactions among their members (organizing cooperation and competition); organizing collective action towards the society at large (lobbying and advocacy to decision-makers, public representation and education to the general public); and definition of an organizational field around a collective identity (setting boundaries) (Berkowitz, 2018; Spillman, 2018).

Such a function entails a dual – and somewhat paradoxical – strategic action: ensuring stability, and fostering change (Harter & Krone, 2001). Stability is essential for mitigating environmental pressure: by defining “who we are as an organizational field” (König et al., 2012), ensuring that such a field be recognized by governments, citizens and business partners, and defining rules of interactions among field actors, meta-organizations allow their members to benefit from a predictable environment supporting collaboration and long-term development strategies (Harter & Krone, 2001; Spillman, 2018). On the other hand, meta-organizations also ensure that their field at large be responsive to deeper and non-paradigmatic mutations of their environment, such as the emergence of technological innovations (König et al., 2012). To do so, they support their members in understanding and analysing such mutations, and responding to them through collective action and innovation (Berkowitz, 2018; Berkowitz et al., 2017).

b. IOIS: when digital change is inter-organizational

Meta-organizations’ frameworks of collective action may particularly be relevant to build inter-organizational information systems (IOIS) out of emerging digital technologies. An IOIS can be defined as a set of shared information technologies automating data exchange and processing among a group of organizations, to facilitate collaboration among such organizations (Robey et al., 2008). Famous IOISs include SWIFT, automating financial

transactions worldwide, and web platforms such as Deliveroo and Coopcycle, automating order processing among distributed networks of providers (restaurants and deliverers).

Firstly, envisioning an IOIS requires a paradigm shift. While organizations are used to benchmark and select solutions according to their cost and expected benefits, an IOIS project entails adopting an approach aimed at addressing needs and opportunities which are common to their organizational field (“how could a common IT solution help us gain collective efficiency?”) (Reimers et al., 2014; Steinfield et al., 2005). Secondly, since the very purpose of an IOIS is to circulate information among organizations, its IT solution is useful for individual organizations only if it is already adopted by their partner organizations (network externalities) (Garud & Kumaraswamy, 1993). At the stage of conception and definition, an IOIS is yet to have any participant: organizations must thus believe in collective benefits, and be confident that their partners will eventually adopt the same IT solution, to make necessary investments for the development, adoption and implementation of the said solution (Tassey, 2000).

Reimers et al. (2014) developed a practice-based theoretical framework aimed at uncovering mechanisms of IOIS evolution which, in our view, could offer some interesting elements to understand how a meta-organization’s structure of collaboration can integrate IT and evolve into an IOIS. The authors apprehend an IOIS as a digitally-enabled framework of inter-organizational collaboration. They identify three components of this framework: material (e.g., in this case: the IT solution), normative (e.g.: common rules of collaboration), and ideational (e.g.: visions and objectives shared by individuals and organizations).

Meta-organizations’ attributes make them relevant frameworks for organizing collaboration among communities of practice (Berkowitz, 2018). Although such frameworks of collaboration can be traditionally analogical, some meta-organizations demonstrated their capacity to digitize such collaborations through an IOIS. Typically, cooperative banks such as Desjardins (Québec, Canada) and Crédit Agricole (France) are federations of local cooperatives: they equipped themselves with common IT solutions (i.e.: IOISs) allowing their members to share and exchange information (e.g.: customer information, personal accounts, money transfers) at the level of their federation. Thus, as cultural and sensemaking actors (Spillman, 2018), meta-organizations have assets allowing them to build a collective vision around an emerging technology, and conduct strategic activities aimed at fostering and supporting its diffusion, hereby favouring their field’s adaptation to environmental mutations (Harter & Krone, 2001) and collective gain of efficiency (Steinfield et al., 2005).

c. Distributed leadership: inter-organizational change-making

Meta-organizations’ actions are not limited to identifying innovations and diffusing them: they also offer frameworks where innovations can emerge and expand. Berkowitz (2018) listed meta-organizations’ attributes to act as a device for innovation meta-governance. Such capabilities include, among others: offering a multi-organizational platform for collective learning, knowledge transfer and information pooling (especially on rare events); providing information production and workshops; and organizing heterarchical, consensus-based multi-stakeholder groups associating both their members and external actors. Such attributes can be verified in empirical studies: for instance, Steinfield et al. (2005) noted that heterarchical

workshops were key to ensure members' trust and mobilization around an IOIS project in the US mortgage industry; while Rodon and Sesé (2010) found that an IOIS project could fail due to actors' concerns towards an overconcentration of power from one player.

While frameworks of collective action are a key prerequisite for inter-organizational innovation, they need to be used by actors who envision the innovation, and allocate resources for such innovation to emerge and come to reality. Meta-organizations usually have little capacity to conduct field-level changes on their own (Ahrne & Brunsson, 2005): thus, digital change projects tend to be conducted by one or several members within the meta-organization's framework. Existing literature suggests that when the meta-organization counts one dominant member, the latter may be in a good position to lead digital leadership: Megali's (2022) study explained how Google transformed the online advertisement standards by working within the Coalition for Better Ads. Yet, when no dominant player emerges or takes action, interested members may need to form alliances and drive collectively the innovation.

Denis et al. (2012) use the concept of *distributed leadership* to refer to "the dispersion of leadership roles across organizations, and even beyond their boundaries, as a variety of people relay leadership responsibilities over time to achieve important outcomes" (p. 241). Distributed leadership allows a group of people and organizations to mobilize resources (perspectives, knowledge, power, money) to solve complex and collective needs, which could hardly be solved and dealt with if approached by a single organization.

Huxham and Vangen's (2000) grounded theory proposes to apprehend distributed leadership through two dimensions. The first dimension, called the "leadership media", refers to the framework of leadership, such as governance models and leadership participants, which we just described above. The second dimension is the "leadership activities", which refers to actions taken by participants to mobilize other organizations: it includes power relations, mobilization and representation strategies, and empowerment of organizations and individuals able to deliver resources in favor of the collective project.

3. Research gap

Many collective and distributed leadership studies underline that "leadership concepts that attribute leadership to individuals create heroic definitions of leadership", and "aim to move away from such heroic view (hence the oft-used label 'post-heroic leadership')" (Denis et al., 2012, p. 254). We argue that the theory of meta-organizations risks falling into a heroic definition of leadership paradigm, by focusing on cases where leadership is assumed by a strong, dominant member. Such a perspective is however hardly applicable to multi-organizational and collectively led projects, such as the IOIS SWIFT project which resisted an alternative, US-centered international electronic banking system (Scott & Zachariadis, 2012).

In addition, we argue that the current focus on large and dominant organizations is hardly compatible with some fundamental characteristics of the cooperative movement. Driven by the principles of autonomy and independence (principle 4) and cooperation among cooperatives (principle 6), cooperative enterprises tend to favor decentralized, heterarchical models of collaboration, rather than centralized and powerful structures of domination (International Co-operative Alliance, 2015). Yet, the cooperative movement has still been able to equip itself

with IOISs (e.g.: banking IT systems, agri-food IT systems, retailing IT systems, etc.). Theoretical models as well as empirical studies are thus needed to understand the mechanisms enabling – and preventing – such leadership practices to emerge, grow and sustain in the long run.

4. Research question

Our research was conducted around the following question: What are the mechanisms of distributed leadership allowing the emergence of an inter-organizational information system (IOIS) project within a meta-organization? This question encompasses three types of sub-questions. First, we wondered who would take the lead over an IOIS project, and why they decided to conduct such a project within the framework of a meta-organization. Second, we examined the collaborative practices used by these actors to lead the IOIS project and how they differ from pre-existing ones. Third, we analyzed how this collective leadership integrates into the meta-organization structure and which characteristics facilitate or hinder the change process.

5. Theoretical model

We developed a theoretical model based on three pillars presented above: meta-organizations as decided social orders (Ahrne & Brunsson, 2005; Berkowitz et al., 2022), practice-based approach of IOISs (Reimers et al., 2014), and distributed leadership (Denis et al., 2012; Huxham & Vangen, 2000).

Our theoretical model is illustrated in figure 1 hereafter. The meta-organization, our unit of analysis, provides its members with a structure of collaboration including the three elements identified by Reimers et al. (2014): material, normative, and ideational. In line with Berkowitz's (2018) framework, we take into account external innovation communities which meta-organizations may engage to foster the emergence of innovations. We assume that collaboration practices happen among member organizations within the meta-organization's framework, but also potentially outside of the meta-organization (e.g.: commercial partnerships on topics which are not dealt with by the meta-organization). Collaborations may also happen bilaterally between the meta-organization and some of its members (e.g.: funding agreements, information-sharing, etc.).

Consistently with Huxham and Vangen's (2000) framework, we identified two dimensions of distributed leadership. The structure of collaboration is apprehended as the leadership media, while collaboration practices are viewed as leadership activities.

Leadership media (contextual leadership)	Structure
	Processes
	Participants
Leadership activities	Managing power and controlling agenda
	Representing and mobilizing (project) member organizations
	Enthusing and empowering those who can deliver the collaboration

Table 1. Distributed leadership dimensions and sub-dimensions according to Huxham and Vangen’s (2000) framework

The focus of our research is colored in red: we investigate how collaborative practices and collaboration frameworks facilitated by a meta-organization favor or prevent the emergence of an IOIS project.

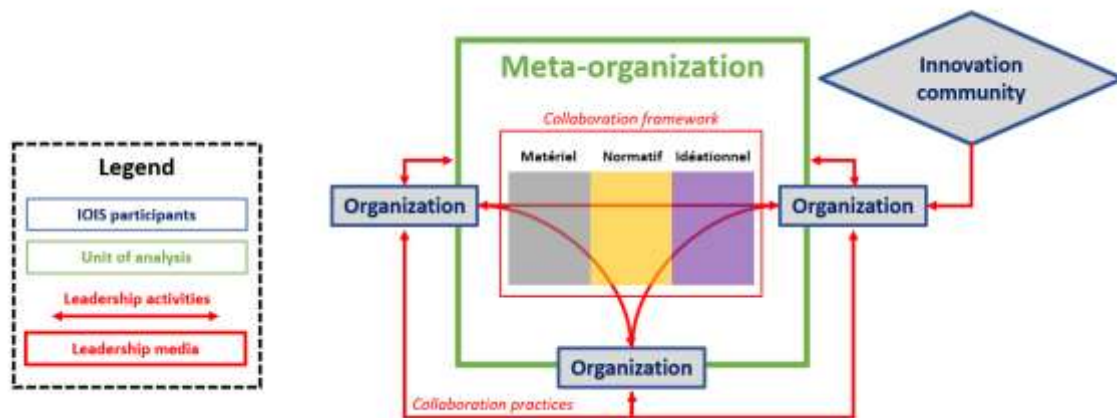


Figure 1. Theoretical framework designed for this study.

6. Approach taken & Method of analysis

Our theoretical model was empirically tested through exploratory research consisting of a comparative case study. Studied cases were two social economy meta-organizations in North America which have conducted digital strategies aimed at setting up inter-organizational information systems (IOISs) for their members.

One meta-organization is a federation of non-profit watershed organizations (named *Watershed Federated* in the present paper). The idea to share data among watershed organizations was promoted for a decade by watershed staff members specialized in geomatics. This idea eventually led to the creation of a common online platform for watershed organizations, aimed at pooling geomatic data from the network. The second meta-organization is an inter-sectoral federation of cooperatives (named *Cooperative Federated* in the present paper), whose

members are sectoral federations of cooperatives. At the time of our data collection, the federation was investigating the opportunity to launch an IOIS project with its members.

Data was collected through individual semi-structured interviews. To ensure a fair representation of diverse viewpoints, our sample included meta-organizations' staff members, and member organizations' staff members. Interviews were tape recorded and transcribed. At the time of this paper, only a limited number of interviews were conducted and analysed: results are thus at the exploration stage. All interviews were conducted and recorded online, and transcribed, which constitute our main data set for coding.

We analysed data along two dimensions: project temporality and leadership characteristics. First, the transcripts were read looking for references to leadership structures and activities enabling or preventing the digital project to emerge. The approach was deductive: we essentially used the two dimensions and six sub-dimensions of distributed leadership identified by Huxham and Vangen (2000), under which we categorized relevant quotations. When similarities were observed, quotations were grouped under a common characteristic (cf. figure 2 below).

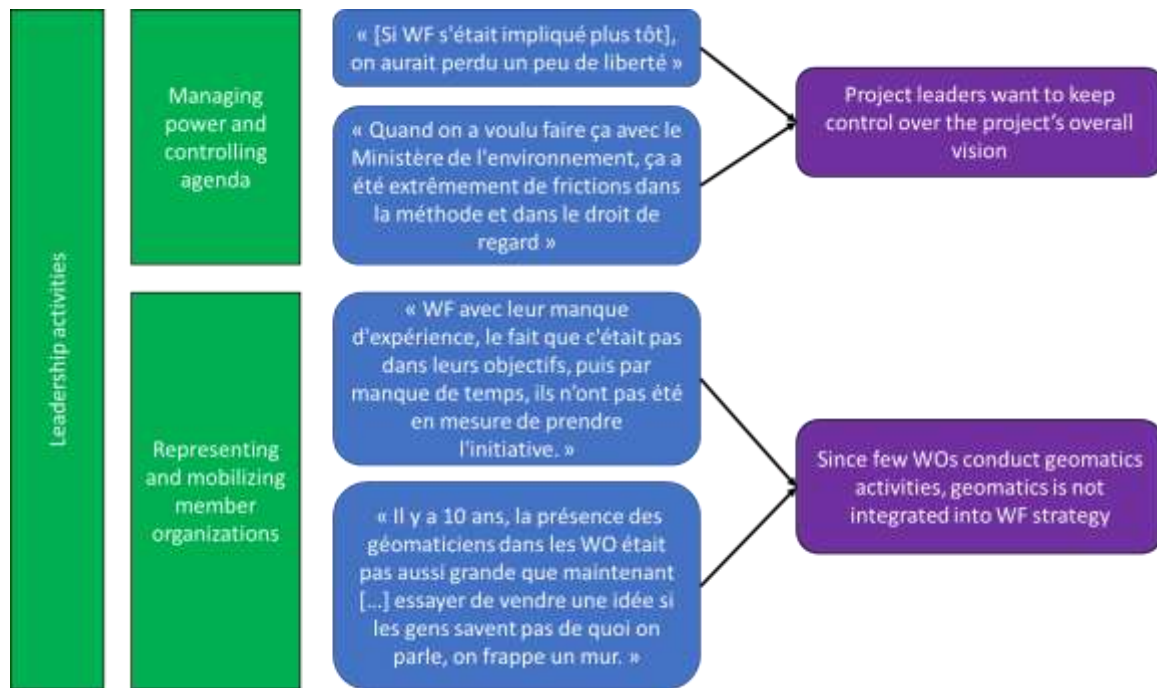


Figure 2. Data analysis: identification of distributed leadership characteristics.

Second, in the case of Watershed Federated, whose data allowed us to retrace events over a substantial period of time (a decade), we followed Reimers and al.'s methodology by coding these instances according to their approximate date of appearance and meta-organizations' strategies. This enabled to group such events into consistent stages (cf. figure 3 below), marked by distinct strategic behaviors. In the case of Cooperative Federated, our data collection was restricted to a short period of time. Thus, we coded such data into one single meta-organization's strategy, and compared with the corresponding strategy from Watershed Federated.

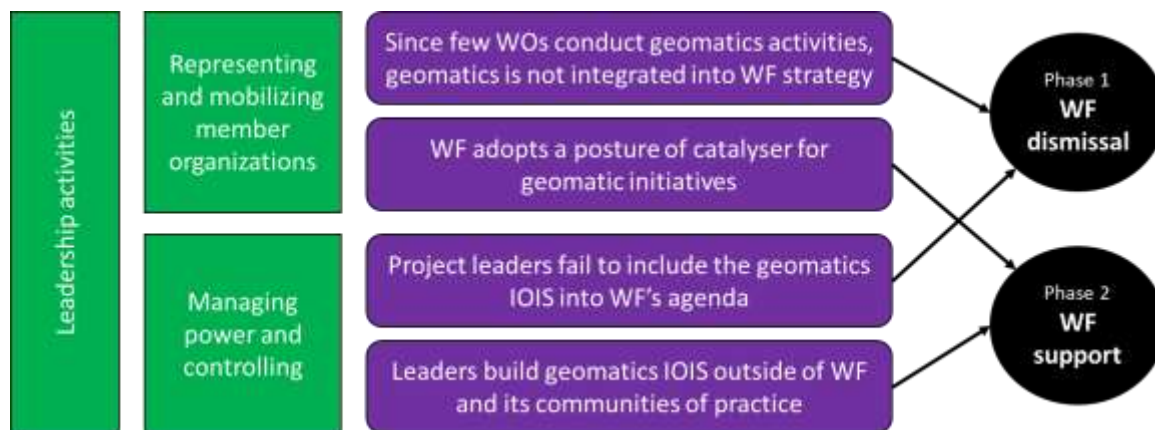


Figure 3. Data analysis: definition of project phases around meta-organization's strategies.

Third, similar instances were consolidated as factors. By putting such factors in relation to the stages of project development and meta-organizations' behaviors, we were able to formulate tentative configurations of factors enabling or hampering leadership around a collective digital project.

7. Findings

We organized our findings around three configurations drawn from our data analysis. Configuration 1 presents an ecosystem unfavourable to the emergence of a collective IT project (a); configuration 2 offers a supportive structure for developing an IT project (b); and configuration 3 appears favorable for the development and upscaling of an IOIS (c).

a. Configuration 1: IT project marginalized from meta-organization's activity

The first configuration identified among our data consists in a leadership which is centralized by the meta-organization, around key institutional functions (direction, board of directors). Leaders of digital innovation projects have little, if any, capacity to access such frameworks: consequently, their ideas are filtered and re-interpreted by individuals who have lower knowledge (and incentives?) about the needs addressed and potential value generated by a digital innovation.

In our data, this configuration is connected to conservative strategies: both meta-organizations tended to dismiss innovation projects, sticking to usual activities. As we were writing this paper, data collected and analysed in relation to Cooperatives Federated case allowed us to contribute only to this first configuration.

Leadership context & activities		WF data	CF data
Structure	MO-member coordination structures are mainly vertical	(...)	“Members contribute their expertise to working committees.”
Processe	MO communication processes are vertical and layered	(...)	“There's no real formal sharing of information between our members.”
Participants	Project leaders and MO leaders are two separate communities (no overlapping)	“We [several WOs] are pooling our water quality data in a database: this is an initiative specific to our WO.”	“We set up a framework, called the <i>Table des formateurs du Québec</i> , to which CF is occasionally invited.”
Agenda	MO staff perceives the community of practice’s agenda as inconsistent with the MO agenda	(...)	“CF was more of a lobbying organization – in the good sense. I don't recall seeing any major member mobilization projects.”
Represent.	Community of practice is perceived by MO staff as marginally represented among its members	“Initially, there weren't many employees in each WO - and even fewer geomatics specialists.”	(...)
Empower.	Existing community of practice members feel disempowered in reaching out to and convince other MO members	“The other WOs envy [our project], but it seems that sometimes, like taking the next step [and adopting the tool], it's not always easy.”	(...)

Table 2. Configuration 1 factors.

b. Configuration 2: establishment of a community of practice

Our data reveals a second, transitory configuration where a meta-organization creates spaces aimed at supporting the creation of a community of practice and helps it to conduct peer-to-peer activities. Such activities include knowledge exchange and collective thinking.

Although the community of practice is still unable to access to formal decision-making frameworks, conditions are established for project leaders to consolidate their ideas, establish alliances, and raise awareness towards meta-organization staff members. In the case of

Watershed Federated, this configuration enabled project leaders to launch a proof-of-concept platform, hosted and maintained by member organizations.

Leadership context & activities		WF data
Structure	MO establishes a space facilitates a community of practices for geomaticians	“In recent years, several communities of practice have been set up and facilitated by WF, including a few on geomatics.”
Processes	MO internal processes are open to community of practices’ members	“It wasn't very open, but now it's starting to be, so much the better.”
Participants	MO leaders express support to project leaders whose team expands	“I heard at a WF conference that a team was setting up to develop a first centralized database project. [...] So I joined the team.”
Controlling agenda	Project leaders choose to start the project outside of the MO	"We said to ourselves, 'We're going to get this out of WF. We'll take it out of the communities of practice piloted by WF, we'll build the initiative, go as far as we're able. Then, when we have an all-inclusive, we'll present it to them again."
Representation & mobilisation	Project leaders work with MO leaders to change perceptions about consistency between project’s objectives and MO’s agenda	"We looked at the action plan and then the WF alignments, and then we said our project or geomatics can help such and such and such an objective. From that point on, we clearly increased the acceptability of geomatics within WF."
Enthusing & empowering	Project leaders are able to mobilize organizational resources to start their project	"A few WOs managed to bring the project to fruition in an almost pro bono way". "I think the freedom I was given by my directors meant we were able to get there".

Table 2. Configuration 3 factors.

c. Configuration 3: new frameworks for collective leadership

As the platform project continues to progress, project leaders establish decision-making structures adapted to the specificities of an IT project. The meta-organization is invited to participate and assume identified functions within such new decision-making structures. This allows the coexistence and coupling of meta-organization’s established structures (board of directors) with emerging, flexible structures (platform executive committee). Project leaders gain recognition, and are able to mobilize the meta-organization’s resources to mobilize other watershed organizations around their initiative.

Leadership context & activities		WF data
Structure	A new structure specific to the project is established, to which the MO is involved as a member	"It's like we've fleshed out this initiative around an executive board and a charter". "[On the executive board] we are three WOs, plus WF".
Processes	Progressive coupling of MO's and project's processes	"It's the partner WF already had in terms of IT infrastructure [to whom the project's IT maintenance was delegated]."
Participants	Project leaders attribute key roles and responsibilities to MO staff members	"I sat a WF employee on the communications desk".
Controlling agenda	Founding project leaders keep control over the project agenda, while progressively integrating other members to the project	"We'd like to have a kind of membership that allows people to express their opinions, to suggest development priorities, certain types of forms or improved functionalities. However, the more members we have, the harder it is to hold effective meetings. So we still wanted to keep an executive structure, a little more operational, with the organizations that are already there."
Representation & mobilisation	MO mobilizes its members to join the project	"We don't know all the WOs. We have a way of all meeting each other, but we mostly do with other WOs who have similar borders and issues with us. So WF could reach everyone more easily."
Enthusing & empowering	Delegation of infrastructure to MO as a way to build collective trust	"We started with our own centralized database, but we also felt that, in terms of security and transparency, it would be more logical if it wasn't a WO that centralized the information of others, but rather a WF. It was more conceptual, because in reality it won't change much. But I was more sensitive to the level of perceptions, let's say of the acquisition of this data or the centralization of this data."

Table 4. Configuration 3 factors.

8. Discussion

Our preliminary data analyzed through the two dimensions of distributed leadership allows to identify consistent and coevolving configurations of distributed leadership.

In the first configuration, the media of leadership is characterized by centralized decision-making processes, from whom the initiators of the IOIS project are largely excluded. Such conditions prevent meta-organizations' decision makers and IT leaders from meeting and

exchanging ideas. In addition, project leaders' skills enabling them to identify pain points and envision a solution are still rare among the network, including the meta-organization itself but also other member organizations. As a result, the project is largely misunderstood among the network. Such a configuration prevents project leaders from mobilizing their meta-organizations and other organizations from the field.

Configuration 2 demonstrates a progressive co-evolution of both the media and participants of leadership. Member organizations progressively acquired the skills and knowledge needed to understand the project, creating the conditions for a community of practice to emerge; in parallel, the meta-organization established appropriate spaces for such individuals to meet, exchange and collaborate, allowing the community of practice to take shape. The foundations of distributed leadership emerge, with identified leaders as well as a distribution of tasks and resources.

Eventually, configuration 3 offers the conditions for the IT project to upscale. The meta-organization's structure provides the space for project leaders to access its own resources, such as time from staff members as well as outreach to other member organizations. Consequently, leaders are able to mobilize new participants in the project. The project team increases its collective efficiency: some tasks which member organizations had troubles in conducting, were delegated to the meta-organization which demonstrated higher legitimacy and capacity to carry them out. Project leaders also gain power and influence among the network: they benefit from the project's visibility, and have the legitimacy to set rules stabilizing their power within the project's strategy.

9. Contributions and implications

Although based on partial results, this study offers preliminary valuable results for the theory of meta-organizations. By using the framework of distributed leadership, we were able to identify mechanisms for the emergence of a collective leadership in the framework of a meta-organization. Factors such as the concentration or decentralization of power and creation of relevant frameworks of coordination for communities of practice were confirmed, while nuanced by other factors related to the overall ecosystem's readiness to undertake such a project. In other words, the meta-organization's characteristics are only part of the story in a collective digital innovation project: looking at the broad picture entails taking into consideration its members' characteristics. We believe that such a conclusion contributes to reinforce the meta-organization's specificities towards other form of organizations, hereby confirming the need for a theory of meta-organizations.

The data also offers interesting empirical insights for the cooperative and social economy field. More specifically, it confirms the relevance and importance of meta-organizations (such as cooperative associations and umbrella organizations) to support the emergence of inter-organizational information systems. It also reveals that meta-organizations' staff skills are an important component of digital transition at a field level: a skill gap can lead the meta-organization under-estimate pain points faced by its members, and the need to conduct a digital project. However, the data also shows that meta-organizations have an adaptive capacity, and can adequately equip themselves with relevant skills when a growing need is identified among their members.

Last but not least, this preliminary research may help practitioners in designing strategies for IOIS projects. More specifically, our study suggests that a project designed and led in collaboration among several member organizations may eventually contribute to raise the meta-organization's awareness, leading to profound changes within its structure. Beginning with simple proof-of-concept rooted in an identified community of practice might be an efficient approach to trigger a meta-organization's interest and resources in favor of an IOIS project.

10. Limitations and future research

The key limitation of our study comes from the limited data available at the time of writing this paper. Complementary data collection will be conducted in order to confirm and complement mechanisms and factors identified. It could especially help us to identify characteristics distinguishing cooperative meta-organizations from other meta-organizations – such as other type of social economy meta-organizations.

In addition, our methodological choice entails *de facto* limitations. Typically, a qualitative study entails a limited selection of cases, exposing us to limited replicability of our results. Multiplying such studies to other contexts, or opting for quantitative methodologies, may contribute to expand our understanding of leadership mechanisms within meta-organizations from other contexts and countries.

11. Conclusion

While cooperatives are driven by the principles of autonomy and inter-cooperation, we have little knowledge about how groups of cooperatives can collectively conduct innovation projects. Leadership is still envisaged as a heroic and individual posture, poorly compatible with the bottom-up and decentralized characteristics of cooperative networks. As a result, cooperative scholars and practitioners face structural frameworks and knowledge enabling them to understand and apprehend mechanisms of collective innovation enabling the cooperative movement to adapt itself in response to societal and technological opportunities and challenges.

Our paper aimed at addressing this knowledge gap by proposing a theoretical model highlighting drivers and barriers of collective leadership. We conducted qualitative study based on two cases of collective digital strategies: a cooperative association and a social economy in Quebec. Preliminary analysis of our first data collection allowed us to identify configurations supporting – or constraining – the emergence of collective leadership. Importantly, such configurations take into account characteristics of the meta-organizations themselves, but also of their members and leaders of the digital project.

We hope that this preliminary research will encourage scholars to further study collective digital innovations conducted by cooperatives and social economy organizations. We also believe that such contributions could help practitioners in fine-tuning their strategies for establishing data-sharing infrastructures in the cooperative movement.

12. References

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