Leading Knowledge Mobilization for Public Value: the Case of the Congestion Charge Zone (Area C) in Milan

ABSTRACT

The literature on public value creation has grown significantly in recent years. However, how such generation of public value is linked to the interaction between individual and organizational capabilities, and the role played by leadership in such interaction, is still underexplored. This analysis of the congestion charge zone (Area C) implemented by the Municipality of Milan in Italy explores this issue and highlights the role played by the *knowledge orchestrator* who, by assuming different leadership roles at different times, strives to create value through knowledge mobilization. *Leveraging* from existing resources, the knowledge orchestrator *captures* knowledge from the external environment and *promotes collaboration* among individuals and institutions, so as to generate a new reconfigured stock of knowledge. These activities nurture the capacity of public organizations to collaborate, produce innovations, and more broadly contribute to public value creation.

1. INTRODUCTION

Beyond traditional public administration and New Public Management (NPM), a post-NPM movement has emerged through the diffusion of cooperation across actors and sectors, leading to increasing use of terms such as *network governance*, *collaborative government*, *public-private partnerships*, *collaborative innovation*, and *co-production* by both practitioners and academics (Bryson et al. 2014). Grouped under the umbrella label of public governance, these forms of cooperation assume, more or less explicitly, the fulfilment of Public Value (PV) as the objective of public policies (Moore 1994, 1995; Bryson et al. 2017), shifting away

from the primary focus on efficiency and results towards the accomplishment of a broader goal of value creation for citizens (O'Flynn 2007). In this perspective, public managers are increasingly called to work across boundaries, and to develop new leadership skills to better fit within a PV frame (O'Flynn 2007). Public leaders need to be able to involve actors with different and competing expectations and values (Cameron et al. 2017), through cross-sector and multi-actor collaborations that join the resources and the creativity of networks of actors and communities, with the aim to create PV. In this context, knowledge can be an important resource as well as a crucial outcome within the collaboration process, as it shapes the experiences and interactions of individuals, groups, and organizations. Public managers are, therefore, responsible for creating an environment where different combinations of knowledge and information can come together, win acceptance, and mobilize the necessary resources to implement new ideas (Bland et al. 2010).

Knowledge, in fact, is generally seen as one of the most important assets in organizations and networks that should be carefully managed (Argote et al. 2003; Teece 1998). Several public organizations have knowledge as their core product, provide knowledge to the public as their main activity, or employ mainly knowledge workers, i.e. experts who use, develop and supply knowledge (Starbuck 1992). As Kogut and Zander (1992, p. 383) note: "knowledge consists of information (e.g., who knows what) and of know-how (e.g., how to organize a research team) … knowledge is held by individuals, but is also expressed in regularities by which members cooperate in a social community (i.e. group, organization, or network)." However, knowledge mobilization processes as a research topic have surprisingly not yet entered the mainstream public sector literature (Willem and Buelens 2007; Rashman et al. 2009; Titi Amayah 2013). We draw on Dhanaraj and Parkhe (2006) to define knowledge mobilization as a comprehensive process involving the acquisition, sharing and deployment of

knowledge beyond and across organizational boundaries, by all the individuals involved regardless of their position within the organization.

Based on the case study of the congestion charge zone (Area C) implemented by the Municipality of Milan in Italy, this paper aims to explore how the generation of PV is linked to the interaction between individual and organizational capabilities, and the role played by leadership in such interaction, in a process of knowledge mobilization.

The next section presents the theoretical framework, and is followed by a description of the empirical setting and the method. The fourth section provides evidence of the three types of knowledge mobilization capabilities that fuel continuous innovation and of their relationship with particular leadership roles. The last sections are devoted to a discussion of the findings and the conclusions where we point out relevant theoretical and managerial implications.

2. THEORETICAL FRAMEWORK

In order to explore the relationship between PV, public leadership, and knowledge mobilization, we propose a theoretical framework that integrates the literature on leading collaboration for PV, on one hand, and knowledge mobilization, on the other hand. More specifically, we rely on the former for the typologies of leadership that foster PV creation, on the latter as it deals with knowledge mobilization processes as possible vehicles for value creation. This framework is represented in Figure 1, and will be used as the basis for the analysis of the Area C case.

Leading collaboration for public value

A post-NPM model has emerged as "a response to the challenges of a networked, multi-sector, no-one-wholly-in-charge world" (Bryson et al. 2014, p. 445). Variously labelled as New Public Governance (Osborne 2006, 2010), New Governance model (Bingham et al.

2005), and Collaborative Governance (Emerson et al. 2012), this model "emphasizes both the governance of interorganizational (and cross-sectoral) relationships and the efficacy of public service delivery *systems* rather than discrete public service organizations" (Osborne et al. 2012, p. 135). As a consequence, it emphasizes the role of networking in leading to shared outcomes among agencies and sectors, and greater democratic accountability to ensure responsiveness and inclusiveness, in the perspective of PV creation (Moore 1994, 1995; Bryson et al. 2017; Sancino 2016). This model features a type of leadership described as facilitative leadership in political discourse (Greasley and Stoker 2008) and collaborative leadership in organizational settings (Ansell and Gash 2008; Bryson and Crosby 2005). When the latter involves a strong values component, it has sometimes been called the new public service (Denhardt and Campbell 2006) or public values leadership (Getha-Taylor 2009). Those studies that see the collaborative model as largely community-based, with public administrations taking a subsidiary role, refer to it as integrative leadership (Bono et al. 2010; Ospina and Foldy 2010).

Recent contributions within this literature identify the *types* of leaders who are most likely to create PV through collaboration. Ansell and Gash (2012) argue that "the distinctive quality of collaborative leadership is that it is *facilitative* rather than *directive* – it must create the conditions that support the contributions of stakeholders to the collaborative process and effective transactions among them" (p. 18).

Within this literature, a facilitative leadership includes roles such as those of the *steward*, the *convener* (or *champion*), the *mediator*, the *catalyst*, the *implementer,* and the *orchestrator.* While the *steward* protects the integrity of the collaborative process (Ansell and Gash 2012), the *mediator* helps to arbitrate and nurture the relationships between stakeholders (Ansell and Gash, 2012) by managing interdependencies, building trust, and resolving disputes (Sørensen and Torfing 2012; Hartley et al. 2013). The mediator also contributes to the construction of a

common framework, while removing barriers to collaboration (Crosby et al. 2017). The *catalyst* helps stakeholders to identify and realize value-creating opportunities (Ansell and Gash 2012) by reframing problems based on new knowledge and promoting the exploration of emerging constraints and opportunities while encouraging transformative learning (Sørensen and Torfing 2012; Hartley et al. 2013). The catalyst also gets the participants to think out of the box and unleash their skills for creative problem solving (Crosby et al. 2017). The *convener*, in contrast, acts by bringing the actors together, framing the interactive arena, and setting the initial agenda by ensuring a mutual adjustment of the expectations (Sørensen and Torfing 2012; Hartley et al. 2013). Similarly, the *champion* relies on informal authority to convene a diversity of actors with the skills, competences and ideas that are needed to develop innovative solutions; at the same time, the champion is expected to create and maintain an inclusive and flexible governance structure (Crosby et al., 2017). The *sponsor* has the political authority that allows to channel resources and legitimacy to the collaboration; s/he is willing to take risks, remove barriers to collaboration, and create the required political alliances (Crosby et al. 2017). In contrast, the *implementer* gets things done by transforming new ideas into institutional and operational design, and by coordinating action across multiple agencies and actors (Crosby et al. 2017).

Finally, a number of scholars refer to that of the *orchestrator* as a role that encompasses multiple roles and activities. For instance, Crosby et al. (2017) claim that "when faced with wicked and unruly problems, public managers should serve as orchestrators of networked interaction and mutual learning" (p. 656), which requires them to act as sponsors, champions, catalysts and implementers. Bartelings et al. (2017) define "orchestrational work as the role in which the orchestrator consciously integrates and therefore fine-tunes activities which have to be executed by network partners from various organizations to deliver concrete jointly arranged results" (p. 355).

Knowledge mobilization and public value

The literature on knowledge mobilization in the private sector has grown exponentially over recent decades (Bapuji and Crossan 2004). The field is vigorous and expected to continue to be a focus of academic theorizing, empirical investigation and methodology development (Easterby-Smith et al. 2008). Conversely, organizational knowledge is under-researched in relation to the public sector, raising an important lacuna in theorizing (Rashman et al. 2009). There are important reasons for studying knowledge in the public sector, in fact. In recent decades, public organizations have undergone substantial reform, driving the need to create and share organizational knowledge; at the same time, the direct application of theories and evidence from the private sector literature presents certain limitations (Rashman et al. 2009). Public sector management takes place in a complex policy and political environment, and is subject to a high degree of accountability (Hartley and Skelcher 2008). Moreover, the processes of knowledge mobilization do not aim to produce profit, but rather PV and impact on citizens, as well as an effective balance among competing stakeholder interests (Moore 1995). There is a different relationship between ideas, practices and organizations in the public relative to the private sector, and if the drivers, catalysts and actors are different between sectors, the nature of knowledge and of knowledge creation may differ too (Rashman et al. 2009). In a PV perspective, public sector organizations are subject to pressures to innovate from other tiers of government and across a wide range of stakeholders (Hartley and Skelcher 2008), as well as from citizens' expectations, and from the emergence of complex inter-organizational structures. Knowledge sharing plays a role in this context as it allows a better understanding of the needs, opportunities, and competences that are distributed among the relevant actors. Leaders can play an important role by bringing people together, creating

an environment that is conductive to learning, and championing organizational knowledge creation (Nonaka 1994).

The literature on knowledge mobilization highlights different activities that are related to the flows of knowledge within and between organizations. These activities involve distinct but interdependent processes that organizational leaders can manage to improve organizational performance and, with specific reference to the public sector, to foster the creation of PV. Depending on their specific research objectives, scholars have emphasised specific components of the knowledge-related processes that can be grouped under the umbrella concept of knowledge mobilization. For instance, according to Alavi and Leidner (2001), managing knowledge involves four activities: knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application. In contrast, Paarup Nielsen's (2006) classification of knowledge management activities is more articulated, as it includes eight processes: knowledge creation, acquisition, capture, assembly, sharing, integration, leverage, and exploitation.

In this contribution, we develop an adaptation of the framework proposed by Verona and Ravasi (2003) that highlights the role played by the processes of knowledge creation and absorption, knowledge integration, and knowledge reconfiguration. Originally aimed at assessing how dynamic capabilities (Teece et al. 2017) contribute to continuous innovation within a private sector firm, this framework was chosen because it looks specifically at knowledge-related processes at the organizational level that sustain innovation, while considering also the role played by interactions with external actors in the evolution of such processes. This focus on organisational capabilities fits well with the volatile environment where many public organizations operate (Hansen and Ferlie 2016), as they build and reconfigure internal resources and competences which are then integrated with those of other organizations within partnerships and collaborations. The concept seems to match conditions

in many public organizations that have to adapt to new situations and requirements rapidly while going through change themselves, for instance due to frequent policy changes.

According to Verona and Ravasi (2003), *knowledge creation and absorption* reflect a long-term commitment to invest in research activities and in the creation of external relationships, in order to absorb outside knowledge; *knowledge integration* refers to the capacity to shape a context that stimulates knowledge resources; finally, *knowledge reconfiguration* relates to the creation of an open system that allows to redefine roles and relational patterns in a flexible way, so as to recombine resources continuously. The authors suggest that continuous innovation requires the simultaneous presence of these three fundamental processes at the organizational level, and that these "capabilities tend to leverage actors, physical resources, structure and systems, and company culture" (Verona and Ravasi 2003, p. 580). Actors "bring individual specialized knowledge embedded in skills and expertise" (p. 584), whereas physical resources and infrastructures include different forms of codified knowledge together with procedures for their use and other kinds of material assets that support the accumulation of knowledge. Structure, systems and culture are basic components of "the organizational context that guides people's behaviour and affects knowledge flows" (Verona and Ravasi 2003, p. 584) among individuals. We develop this model further (see Figure 1) first, by adding the leadership roles among the building blocks of these knowledge-related processes that can be interpreted as phases of a wider knowledge mobilization. Secondly, we propose that such knowledge mobilization within inter-organizational collaborative processes may facilitate the creation of PV, and therefore explore which key activities, resources, and leadership roles are likely to promote such mobilization.

FIGURE 1 ABOUT HERE

Figure 1 – A framework for public value creation through knowledge mobilization

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3. EMPIRICAL SETTING AND METHOD

Our main research setting is the Department of Milan's Municipality in charge of the planning and implementation of Area C, the city's congestion charge zone. Access for vehicles around the historical centre of Milan is allowed through 43 points, including seven for the exclusive use of public transport. Surveillance cameras detect the vehicles entering the Zone, and transmit the number plate data to a computer which recognizes the vehicles, their classification (e.g. residents, duty vehicles, free access) and the corresponding due charge. Several categories of vehicles (i.e. motorcycles, electric and hybrid vehicles, ambulances) are exempted from payment. Residents within Area C are allowed 40 free entrances per year, after which any additional entrance will cost €2.

Area C is the result of the evolution of a previous scheme, called Ecopass, which was introduced in 2008 by the then ruling center-right Administration as a pollution charge to be paid by vehicles entering Milan's city centre. All vehicles entering the area had to pay a pollution charge, proportional to their emission class. In its first year Ecopass succeeded in reducing congestion and car emissions, due to traffic reduction as well as substitution of older polluting vehicles with new cleaner ones, but the effect on congestion progressively decreased because of car substitution. As the Administration was reluctant to change the system towards a more restrictive one, a group of citizens promoted a referendum that tested citizens' attitude towards a charge to be paid by all vehicles: voter turnout was 49% and the result was clearly in favour of the change (80% favourable and 20% against the proposal) (Croci and Ravazzi Douvan, 2016). As result, the Ecopass pollution charge was replaced by the Area C congestion charge in the same central area of Milan, characterized by a flat charge of €5, with the new system entering into force in January 2012.

Together with the Municipality of Milan, the actors involved in the design and management of Area C are the Municipality-owned AMAT (Agency for Mobility, Environment and Land) which provided technical support from the design stage to implementation, and ATM (Milanese Public Transports) a public company responsible for the management of public transports and sustainable mobility within the city. ATM is also in charge of the management of Area C from a technological viewpoint.

The choice of this particular case is due to Area C being proved as a good practice of collaborative innovation by a study conducted within the wider EU-financed CASI (Public Participation in Developing a Common Framework for the Assessment and Management of Sustainable Innovation, http://www.casi2020.eu/) project. Area C was shown by the CASI project to be a good practice because of its economic, environmental and social effects, as (i) it brings considerable financial gains to the Municipality, that are used for investments in other sustainable mobility projects; (ii) it allows environmental improvements thanks to reductions in air pollution and traffic congestion; and relatedly (iii) it contributes to enhance citizens' quality of life both in the short and in the long term.

Method

The study is based on the analysis of a case study, a method that has already been adopted in the field of continuous innovation (Brown and Eisenhardt, 1997). This qualitative approach was considered suitable since it does not aim to establish cause-effect relations among variables, but to determine the basic characteristics of particular modes of organization and actions (Yin, 2013). Although the results are not statistically relevant, they offer a multidimensional perspective that allows to enrich theory.

Information was gathered using a combination of different sources and approaches. A documentary content analysis was conducted on Area C's regulatory framework, on the

existing literature on Area C and on Milan's Mobility Strategy more generally, including unpublished reports and internal documents provided by the Municipality of Milan, ATM, and AMAT. These unpublished documents included internal protocols and procedures, as well as internal assessments of the impact of Area C. Semi-structured interviews were conducted by two researchers with key individuals who were involved in the planning and implementation of the Area C project. These interviews were conducted in the year 2015 as part of the above-mentioned CASI project, and were supplemented by additional interviews in 2016 (partly with the same but also with additional informants) in order to extend and improve the understanding of key factors and dynamics. Interviewees within the three main public organizations involved in the Area C project include both employees of these organizations and consultants who were hired in connection to the project itself or with the advent of the new centre-left municipal Administration. More specifically, interviewees at the Municipality of Milan included: the Chief of the Division in Charge of Area C and Mobility Projects and one of her team members; the Chief of staff to the Deputy Mayor, also temporarily assigned to the Department of Mobility, Environment, Urban Affairs, and Green, and the Manager of the Communication and PR Office; interviewees outside the Municipality included a consultant to AMAT who has always worked in close connection with the team from the Municipality's Division in Charge of Area C and Mobility Projects, and the Director of AMAT. Interviews typically lasted 2-3 hours and were transcribed verbatim. Data were coded separately by the researchers based on categories that reflect the building blocks and the phases of the knowledge mobilization process, as it proceeded through the planning and implementation of the Area C project. The results were compared and discussed with a third researcher with in-depth knowledge of the Area C administrative process, and built into a coherent narrative as presented below.

4. THE BUILDING BLOCKS OF KNOWLEDGE MOBILIZATION IN THE CASE OF AREA C

This section highlights how knowledge creation and absorption, knowledge integration, and knowledge reconfiguration have played a role in the success of Area C, both as far as planning and implementation are concerned, with a specific focus on leadership dynamics. Table 1 summarises the findings resulting from the application of our adapted Verona and Ravasi (2003) model.

TABLE 1 ABOUT HERE

Table 1 – Leaders and sources of knowledge mobilization in the case of Area C

Knowledge creation and absorption

New knowledge was developed in this phase through the adaptation of contents captured from the external environment. In the case of Area C, a sizable knowledge base came from the previous Ecopass system, which provided information concerning traffic flows and possible critical issues in the management of a restricted area. Moreover, in order to meet the needs of the new project, new knowledge had to be absorbed from both the Area C network of actors and the external environment. The result of this phase was the generation of a stock of knowledge concerning basic functioning rules in terms of tariffs, working hours, exemptions and derogations.

With reference to the *physical resources and infrastructure*, ATM adapted the pre-existing technology so as to allow a different pricing system. Such infrastructure, together with the personnel previously working on Ecopass, provided the basic knowledge for the new Area C project. In addition to the Ecopass personnel, other *actors* contributed expertise, skills, and

information, thereby nurturing knowledge creation and absorption. Engineers within AMAT worked with internal teams and in cooperation with experts at Cornell University and at the University of Southern California Los Angeles to produce accurate scientific and technical knowledge to support the operational and political implementation of Area C. The Municipality's Communication Office also played a very delicate role. As the legitimacy and the positive effects of Area C had to be made clear to citizens, new campaigns and channels were devised to convey the relevant data in a clear, transparent, and timely manner. The *organizational conditions* that allowed knowledge creation and absorption concerned changes in the organisation, on one hand, and the introduction of *ad hoc* coordination mechanisms, on the other. Compared to Ecopass, the organization of work became less hierarchical: lower level officials were given high decision-making powers, and members of the project teams were given space to contribute their thoughts and lessons from their experience. Municipality officials would often delegate even important tasks, such as meetings with external stakeholders, to lower level officials, while at the same time empowering them. This was critical within a public sector environment, where people tend to respond to the legitimacy provided by the hierarchy: «*this empowerment allowed things to get going, without the need to pass through an introduction by the Division's Director… Directors within the Municipality have a lot on their plate, and if we needed to wait for their formal introduction we would have wasted a huge amount of time*» (Consultant to AMAT involved in the design phase of Area C). As for the coordination mechanisms, the introduction of formalized meetings and cross-functional liaisons among the actors of the network facilitated the development and the absorption of new knowledge. Within the Municipality, four ad hoc task forces working on Road signs, Information systems, Legal, and Communication met weekly with people from ATM and AMAT to check operating progress and technical issues. With the aim of providing transparent answers and data, as well as ensuring that the inconvenience

caused by Area C would not grow into dissatisfaction with the Administration, other more 'political' meetings were held by Municipal or AMAT employees with citizens of Area C, public sector organizations, retailers, and the police. Finally, in terms of *leadership roles*, the creation and absorption of knowledge was favoured by a supportive leadership approach that nurtured high motivation, projected a clear image of the expected results, and fostered a strong commitment among the teams engaged in the Area C project. Such strong engagement was supported, firstly, by the new Alderman in charge of Urban Mobility, who was keen specifically on the Area C project, without being too worried of possible local residents' discontents. The role of the *sponsor* can be seen clearly here: there was strong political support also more generally by the new Mayor, but this young and charismatic Alderman proved to be daring and willing to risk his own reputation, which also fed motivation and commitment at all levels within the Municipality and outside. From the organizational viewpoint, no individual project manager was formally put in charge of the project. Overall integration was informally ensured by the Director of the Municipality's Central Directorate for Mobility, Transport, Energy and the Environment who, by playing the role of the *champion*, provided essential informal coordination, joining together different sources of knowledge from multiple actors.

Knowledge integration

This phase saw the processing, assimilation, and adaptation of the knowledge created and absorbed during the previous phase to the needs of the city's stakeholders. After the first phase, in fact, Area C was still far from being the complex system which has later become; once it was set in motion, new knowledge arose from Area C's day to day workings. The result of this phase was an evolution of the previous stock of knowledge, where the general rules were further articulated according to the actual needs of the citizens.

Key *physical resources and infrastructures* for the integration of knowledge included the main organizations' social media platforms, which allowed to gather information from external stakeholder. In fact, the initial use of email to interact with individual citizens soon became impossible to manage effectively. At the same time, people within the Municipality and ATM were becoming more apt and expert at using social media, and this became a very useful resource to reach citizens. The same a*ctors* of the previous phase were involved in the knowledge integration process, with the sole exception of the US Universities engaged exclusively in the project's design. In addition, a key role was played here by citizens and other stakeholders who raised the need to deal with possible further exemptions, such as those to be granted to patients of hospitals located within the Area C, or to duty vehicles owned by other public organizations. Whereas these requests were initially managed on a case-by-case basis, over time the need for a structured approach became more and more clear, and was addressed by tackling the relevant *organizational conditions.* Working groups were created for instance with hospital physicians and the regional committee in charge of disability certifications. A high-level committee was set up to address on a regular basis the requests coming from stakeholders outside the public sector. These requests were evaluated and, if accepted, they produced a new rule to be integrated into the system; if rejected, a reply with the motivation was sent to the proponent. This second phase was characterized also by an important element of informal coordination: trust among the individuals involved both within the Division and across the three organizations. Trust appeared at different levels, with a strong belief that only real commitment by all the relevant stakeholders could make things work, allowing ongoing integration of knowledge from various sources: «*At some point we decided that we wished to allow certain categories of craftsmen a lower access charge, but we didn't know how to make them easily identifiable. So I called the Chamber of Commerce to ask for advice, and a Chamber's official suggested that each economic activity is identified*

by an ATECO code (as assigned by the Italian National Statistics Office), which allowed a specific agreement to be set, with the details of the relevant code. This official later came to all our meetings, with no direct returns or because of a mandate from his line manager» (Consultant to AMAT). In this phase, the *leaders'* contribution was crucial for the creation of a diffused climate of trust. The newly appointed Director of the Department for Mobility and Public Transports, Planning and Programming acted as a *champion* but also as *implementer*: he had already been Director of the lower level Division for Mobility and Public Transport, and therefore was already familiar with the organization and the people who would get involved in the Area C project. This facilitated the widespread delegation, autonomy and trust which played a critical role to ensure speed when needed. Within a large public organization such as the Municipality of Milan, the propensity to innovate at the individual and organizational level can be very diverse: a lot depends on Departments' Directors and their willingness to take risks.

Knowledge reconfiguration

In this phase, the day-by-day implementation of the system allowed the definition of roles and relational patterns by recombining the available resources. A major outcome of this process was the development of new skills among those who had managed the project, and in particular among the staff at the Municipality, who learned how to work directly with the citizens. They learned to manage processes in a dynamic way, dealing quickly with emerging problems (such as ill functioning software), and finding the right solutions, often also with a new attitude: «*It was the beginning of a new interaction with citizens, at the beginning there was even too much of it compared to what we were used to. We learned to interact faster and in a different way: you address them as customers, not as subordinates*» (Chief of the Division in Charge of Area C). This new approach resulted in higher satisfaction also on the

part of citizens, who in several cases expressed gratitude to the operators. Operators felt gratified and even more committed to the successful functioning of the project, with the side effect that they react negatively when they see other Divisions or Departments within the Municipality working in a different way. They do not see the same 'commitment to an excellent service' and are keen to ensure that others do not spoil 'their project'.

In addition to the *physical resources and infrastructures* employed in the first two phases, further resources were mobilized in the process of knowledge reconfiguration. They relate, for instance, to innovations in the payment system aimed at the dematerialization of Area C paper coupons, such as a partnership with Telepass, the main Italian company involved in the collection of automatic tool payment systems. Over time, the team at ATM in charge of payments' management has become more effective in devising new systems to meet internal efficiency-driven requirements, but also and foremost citizens' needs. This search for continuous improvements is supported by the sharing and elaboration of data on actual use, and by careful analysis of changes in citizens' behaviours.

The key *actors* in this phase were primarily the Municipal employees engaged in the project, and the citizens of Milan. Municipal employees, who are usually subject to a routinized kind of work, had to learn to manage discomfort and complaints while supporting their own motivation; they have developed new interpersonal communication skills and greater sensitiveness in responding to citizens. The Municipality's Division in Charge of Area C has also developed new ways to collaborate with other parties, for instance with the local police. As part of Area C, municipal employees have to communicate constantly with the police to declare system malfunctions and justify any non-payments by citizens. The success of Area C and the collaborative attitude adopted by the Municipality has also improved relations with businesses and other stakeholders who 'work' as opposed to 'live' in the city. For instance, freight forwarders such as DHL initially opposed Area C, but have later become

strong supporters because they also benefit from lower traffic in the centre; now they are collaborating with the Municipality to experiment with electric vehicles within Area C. Within the private sector, this has also critically contributed to higher trust towards the Municipality, and a lower perception that people in the public sector do not understand others' needs and just apply norms inflexibly.

The supporting *organizational conditions* in this phase relate primarily to the formalization of basic organizational routines, on one hand, and the implementation of a systematic monitoring of the Area C setting, on the other. The first included the formulation of an effective training system for those working at the back and front offices of Area C's management: knowledge and procedures were codified to address the needs of newly arrived operators. At the same time, «*those operators are urged to make suggestions or raise doubts if a rule that looks perfect on paper turns out to be useless because of something that the expert or the planner did not see. These operators deal with the public and have a hands-on understanding of what works*» (Consultant to AMAT). The systematic monitoring, on the other hand, consisted in activities aimed at capturing the changing needs of the citizens. Once the Area C was up and running, the actors in charge of its implementation from the various perspectives could start focusing on innovation, simplification, and management control.

Certain *leadership roles* were critical also in the process of knowledge reconfiguration. A *catalyst* and a *champion* can be seen in the Chief of the Division in Charge of Area C, who had been involved in the project since its very beginning and had a deep knowledge of the resources and personnel involved over time, some of whom were actually ATM employees 'on loan' to the Municipality in relation to Area C. She had a clear picture of the overall project and was able to tap into the right resources at the right time. As a proof of the high level of trust and acknowledgement of her leadership by her team, she described a failed attempt to introduce an intermediate manager, so that she could shed some of her activities: it

failed because team members felt part of a flat organization, and were willing to report only to their Chief.

5. DISCUSSION

This case highlights the importance of the capacity to lead knowledge mobilization across three different public organizations – the Municipality, AMAT, and ATM – which were in their own way essential repositories of different types of knowledge. This collective drive towards the creation of PV was enhanced by a strong commitment by the individuals involved, which was in turn supported by pervasive trust and a strong political drive linked to the recent municipal elections. In this vein, the analysis of Area C endorses recent contributions that identify the facilitative leadership approach as the most likely to create PV through collaboration (Ansell and Gash 2012; Sørensen and Torfing 2012; Crosby et al. 2017). This case exemplifies the fact that "leadership roles may be exercised simultaneously, in different combinations or successively. …. While the leadership roles, occasionally, may be carried out by one and the same actor, they tend to be enacted by different actors with different kinds of authority and special experiences, skills and competences." (Crosby et al. 2017, p. 661). This work adds to the extant literature by providing evidence of a link between these actors and the three knowledge-related organizational capabilities (knowledge creation and absorption, knowledge integration, and knowledge reconfiguration), and by suggesting how actors can enable such organizational capabilities and promote their development and reconfiguration, thereby sustaining the organization's capacity to generate innovations and PV in the longer run.

Following our adaptation of Verona and Ravasi's (2003) framework, Table 2 offers a generalization and further elaboration of the results depicted in Table 1: it highlights how the various leadership roles may sustain those key activities that, by leveraging certain critical

resources, enable and support processes of knowledge creation and absorption, integration, and reconfiguration. These levers, in fact, are the tools which can support the generation of innovation directly, but also indirectly through their enhancement of organisational capabilities. In the phase of knowledge creation and absorption, a critical role is played by the leaders' capacity to draw on the resources of the existing participating actors – in our case the Municipality, AMAT, and ATM – where the critical technical, technological, and experiential knowledge resides. On the other hand, even if knowledge creation and absorption may be pre-requisites for the innovation to be set in place rapidly, what allows the dynamic process of its continuous evolution is the leaders' capability to support the capturing and integration of the knowledge that happens to be dispersed among the various stakeholders. This capability rests on a flexible project-based organization that promotes adhesion and commitment on the part of those involved within and outside the participating organizations, supports the capacity to tap individual knowledge and ideas, and institutionalises the collective contribution to the innovation itself. Lastly, knowledge reconfiguration entails the creation of a structure that allows to redefine roles, relational patterns and rules in a flexible way, so as to facilitate collaboration among individuals and institutions and the recombination of resources as needed. Through this process of recombination, leaders facilitate the development of multiple solutions to existing needs (as with the evolving payment methods in the case of Area C), but also the development of new services (within the municipal sustainable mobility strategy in the case of Milan).

TABLE 2 ABOUT HERE

Table 2 – Leadership roles, critical resources and key activities for knowledge mobilization

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In the case of Area C, sustainability concerns linked to pollution and traffic congestion became a driver of knowledge mobilization. This focus on sustainability translates into a greater ability by the 'orchestrator of collaboration' (Crosby et al. 2017) to create PV, which, in turn, enhances the capacity to overcome obstacles within public administrations and across their boundaries. Crosby et al. (2017) note that while the leadership roles they identify as critical for success "may be carried out by one and the same actor, they tend to be enacted by different actors with different kinds of authority and special experiences, skills and competences." (p. 661). Similarly, in the case of Area C, the various leadership roles are played by different people within participating organizations, who act as orchestrators both within the narrower and the wider collaborative environment. However, in the light of our results, such orchestration may involve not only organizations, individuals, and activities, but also knowledge flows. We therefore propose that the extant typologies of leadership promoting PV may be enriched by introducing the figure of the 'knowledge orchestrator': an actor - or group of actors - assuming different leadership roles at different times, as s/he strives to create value through knowledge mobilization. The knowledge orchestrator features the ability to *leverage* from existing material and immaterial resources, *capture* external demands and stimuli, and *promote collaboration* among individuals and institutions, and – in the process – sustain knowledge creation and absorption, knowledge integration, and knowledge reconfiguration respectively (see Table 2). The knowledge orchestrator integrates the contributions of various stakeholders in a coherent whole, in a way that enables further development of that knowledge.

Our results show that knowledge-related processes do indeed have a potential to create PV through their outcomes. In fact, knowledge orchestration in the case of Area C succeeds in creating value in terms of generation of new knowledge in the short to medium term, enhanced organizational capabilities to innovate in the longer term, and an increase in trust

among those involved in the project, including citizens. However, a particular result of the analysis concerns the role played by trust. The processes of collaboration and knowledge orchestration promote and reinforce such trust among people who share the same level of commitment to the Area C project and/or previous interpersonal relationships, both within and across organizations. In contrast, the Area C team appears to be wary and distrustful of other Municipality employees in other Departments who are not similarly committed to the provision of excellent public service. This level of trust can be seen as an outcome of knowledge orchestration because it is the result of multiple actions, undertaken by leaders at different times, to foster commitment to the Area C project.

6. CONCLUSION

This study aimed to explore how the creation of PV can be linked to the interaction between individual and organizational capabilities, and the role played by leadership in such interaction, in a process of knowledge mobilization. The results of the analysis suggest a few considerations from a theoretical and managerial point of view.

From a theoretical perspective, this work contributes to the literature on the role of leadership for the creation of PV in a threefold way. First, this work not only endorses recent contributions that identify the types of leaders who are most likely to create PV through collaboration – i.e. sponsors, champions, catalysts, implementers, conveners, mediators, stewards, and orchestrators – but also adds to this literature by focusing on the links between these roles, critical resources, and key activities as they specifically contribute to knowledge creation and absorption, knowledge integration, and knowledge reconfiguration respectively. Secondly, the results suggest a possible enrichment of the extant literature and typologies by proposing the role of the *knowledge orchestrator*. Knowledge orchestration here allows to consider various stakeholders' interests, and to envisage solutions that balance such

competing interests, by leveraging diverse competences that reside in different organizations. This capability extends to the wider inter-organizational and community level: it impacts positively on trust by citizens, who see their needs taken into account, and also on public administrations, who learn to work and interact better with citizens and with each other. However, it should be noted that such building of trust, in the case of Area C, involves those who are engaged in the project, thereby overcoming structural and physical barriers; it appears to turn into distrust towards those who do not show similar attitudes and commitment in their own activities. Finally, this work contributes to the growing literature seeking to link a knowledge and learning focus in public sector organizations (Hansen and Ferlie 2016) to the stream focusing on dynamic capabilities in public sector organizations, which has received relatively little attention in the public management field (Piening 2013).

From a managerial viewpoint, this case provides an example of the categories of organizational resources that public managers and politicians can use and leverage in order to facilitate a self-reinforcing process of knowledge creation and continuous innovation. The detailed description of Area C provided throughout the text, together with Tables 1 and 2, offer empirical evidence of how leaders with different roles and at different stages of the innovation process can leverage certain resources through selected activities, thereby improving our understanding of how systems of learning actually work within public organizations. This work also provides an example of how public managers can play critical orchestrational roles to enable effective collaborative innovation, while also reinforcing their organisation's capabilities to innovate further. In fact, it suggests how the innovation process may be looked at in its main constituent phases, where leaders can involve critical resources and focus – in the different phases – on leveraging from the existent, capturing external demands and stimuli, and promoting collaboration among individuals and institutions, in order to sustain the three types of knowledge mobilization.

Although we believe that our work contributes to a better understanding of a topic - knowledge mobilization in public sector settings - that is relatively underexplored in terms of its impact on PV creation, it is also clear that our research has certain limitations and requires further elaboration. The limitations of this work based on a single case study suggest that further research is needed to better understand how and under what circumstances the mutual reinforcing process does take place between the generation of innovations, on one side, and the interaction between individual and organizational leadership capabilities, on the other. One of the interviewees pointed out that collaboration may also carry risks: citizens may expect their view to be incorporated in ways that are in fact not feasible; collaboration among independent organizations carries transaction costs that may translate into delays or even obstacles to innovation implementation. Area C provides an example of how such risks have been kept to a certain extent under control by effective enactment of certain leadership roles, although a critical role was also played by the presence of trust among those who contributed to the project. Further research should explore what are the most effective microfoundations of trust that can be promoted through organizational mechanisms both within and across organizations, and also how the emergence of possible negative outcomes, such as distrust among members of the same organization, can be addressed.

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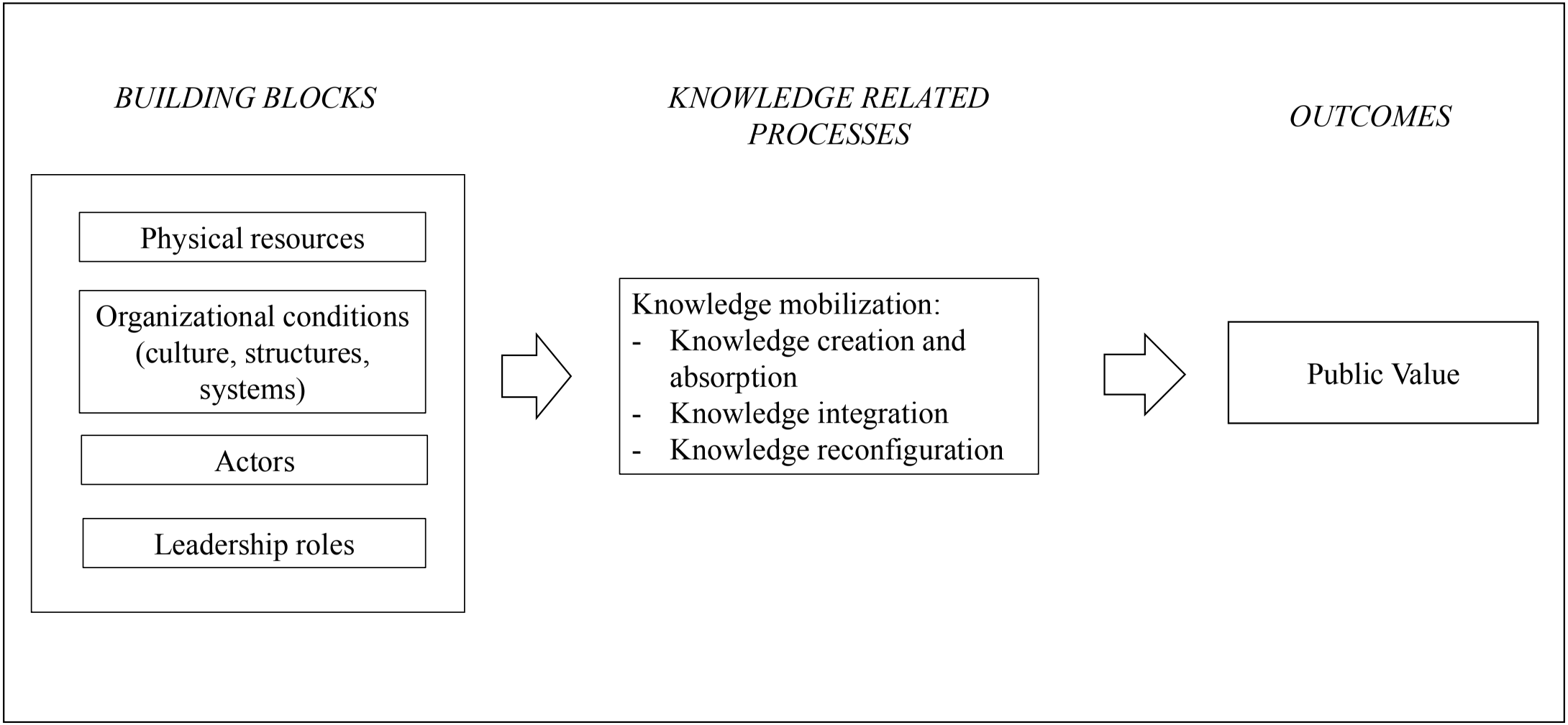
BUILDING BLOCKS
KNOWLEDGE RELATED PROCESSES
OUTCOMES
Physical resources
Organizational conditions (culture, structures, systems)
Actors
Leadership roles
Knowledge mobilization:
- Knowledge creation and absorption
- Knowledge integration
- Knowledge reconfiguration
Public Value

Table 1 – Leaders and sources of knowledge mobilization in the case of Area C

	Knowledge Creation and Absorption	**Knowledge Integration**	**Knowledge Reconfiguration**
Leaders in charge	• Alderman in charge of Mobility • Director of the Department for Mobility and Public Transports Planning and Programming • Chief of the Division in Charge of Area C	• Director of the Department for Mobility and Public Transports Planning and Programming • Chief of the Division in Charge of Area C	• Director of the Department for Mobility and Public Transports Planning and Programming • Chief of the Division in Charge of Area C
Actors	• Individuals involved in previous Ecopass initiatives, new hires • Municipality, AMAT, and ATM employees • International experts	• Citizens and other Area C stakeholders	• Public sector employees interacting with citizens • New technological partners • Local police • DHL and other freight forwarders
Physical resources and infrastructures	• Ecopass infrastructure	• Social media platforms	• Technologies for the dematerialization of paper coupons
Organizational conditions (culture, structures and systems)	• Flat organization, with high delegation and high level of trust • Formalized meetings	• Purpose-built units to evaluate exemption requests (working groups and high-level committee)	• Training system with manual • Feedback to public employees from citizens and politicians

	• Cross-functional liaisons within the network	• Trust supported by existing interpersonal relationships	

Table 2 – Leadership roles, critical resources and key activities for knowledge mobilization

	Knowledge Creation and Absorption	**Knowledge Integration**	**Knowledge Reconfiguration**
Leadership roles	• Sponsor • Champion • Catalyst	• Champion • Catalyst • Implementer	• Catalyst • Implementer
Critical resources	• Existing HR capabilities • External experts' skills • Existing infrastructure	• Stakeholders' domain knowledge • Communication with external stakeholders (channels)	• Skilled HR • Flexible structure and decision-making • Clear rationale of the project
Key activities	• *Leveraging* from the existent	• *Capturing* external demands and stimuli	• *Promoting collaboration* among individuals and institutions