

**Constructing a Joint
University–Municipality Platform for
Networked
Co-creation of Innovative Urban Solutions:
A Norwegian Experience**

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ABSTRACT

While there is an abundance of studies examining the collaboration between government agencies and private business, only scant attention has been directed to “town and gown” cooperation. This is a pity, since the involvement of knowledge institutions in public governance, service production, and the construction of co-creation platforms may help to ensure that new governance solutions are based on new and updated scientific knowledge and that public research is informed by societal needs and public concerns. Drawing on document studies, qualitative interviews, and participant observation, this paper aims to shed light on the drivers of as well as the barriers to the formation and operation of joint co-creation platforms, such as TRD3.0. It explores the background and key features of the new platform, the motivations of the institutional actors behind the initiative, the drivers of interorganizational integration, and the barriers to the development and consolidation of the joint platform for the co-creation of innovative solutions. It also considers the strategic, tactical, and operational depth of the joint effort of the municipality and university to integrate and collaborate. Finally, it reflects on the appropriate governance and leadership responses to emerging problems and challenges in order to identify a pathway to successful implementation.

Keywords: Public governance, platforms, co-creation, university, municipality, innovation, public value

Introduction

Three factors converge to put pressure on local municipalities to spur the co-creation of innovative public value outcomes (Torfing, 2019). First, local governments are caught in a crossfire between growing expectations to public services and the persistent scarcity of key public resources (e.g., money, personnel), which makes it difficult to make ends meet without mobilizing external resources and ideas. Second, they confront a growing number of complex and turbulent problems that call for knowledge sharing, joint learning, and public innovation. Finally, the citizens in advanced industrial societies are becoming increasingly competent, critical, and assertive, and they expect to be more actively involved in public governance than their roles as voters and service consumers allow (Dalton & Welzel, 2014).

Local municipalities have increasingly heeded the call to mobilize resources, spurring public innovation and cultivating an active citizenship by creating platforms and arenas for network-based co-creation (Ansell & Gash, 2018; Ansell & Torfing, 2021; Mačiulienė & Skaržauskienė, 2016). Local efforts to spur co-creation tend to involve affected citizens and relevant for-profit or non-profit stakeholders in creative problemsolving projects in urban planning, social services, health and education, integration of immigrants and refugees, and climate change (Bovaird & Loeffler, 2020; Brandsen, Steen, & Verschuere, 2018; Torfing, 2016). By contrast, the involvement of universities in local co-creation is relatively rare and often limited to one-off presentations by university professors disseminating their knowledge

and expertise in local meetings. However, Trencher et al. (2014) have detected an emerging trend whereby universities are collaborating with government, industry, and civil society to advance the sustainable transformation of a specific geographical area. Moreover, innovative community-university partnerships are emerging in response to the shift from the old government to the new governance paradigm (Martin, Smith, Phillips, 2005). Finally, a recent study observes a growing tendency in the USA towards the formation of university centers engaged in collaborative governance that may involve local politicians and administrators in collaborative projects (Kern and Smutko, 2021). By comparison, the attempts of local municipalities to involve universities in the place-based co-creation of public value outcomes are few and far between—and often an extension of the strong project culture found in municipalities using ad hoc projects to design and implement new solutions in response to pressing problems and new ambitions. While a perfectly viable strategy, this fails to create more enduring platforms for involving universities in the co-creation of innovative solutions. This is problematic, since the high transaction costs of initiating collaboration with universities may lead to an underutilization of research-based knowledge and expertise in local co-creation projects. Moreover, the ecology of such projects initiated either by universities or municipalities is often loosely coupled to their parent organizations and therefore hardly affects the organizational structure and *modus operandi* of universities and local municipalities, which remain hierarchically organized and divided into administrative or disciplinary silos. Hence, the parent organizations remain ill-equipped to engage in cross-boundary collaboration with external actors.

The University–Municipality Trondheim 3.0 project (TRD3.0) takes a different road, aiming to create a joint co-creation platform and the partial organizational integration of Trondheim Municipality (TM) and the Norwegian University for Science and Technology (NTNU). The goal is not only to facilitate knowledge sharing, municipal competence building, and improved educational opportunities for students, but also to involve societal actors in co-creation projects in all areas of public policy to generate continued service improvement and innovative solutions that match the future needs of citizens and society and help promote a transition to sustainable urban living.

TRD3.0 is both ambitious and daring in seeking to create a new interface between local governments and academic knowledge institutions that goes beyond the traditional municipal hosting role of universities located within the city limits as well as the recent experiences with sector-specific collaboration in relation to the growing number of so-called “university hospitals.” The creation of a joint platform for co-creation involving the municipality, university, local business, civil society, and citizens in creative problemsolving aspires to produce a new penta-helix complex that may spur learning and innovation while developing broad-based ownership to new and bold initiatives. However, while there are strong drivers for developing and consolidating the new interorganizational and cross-boundary co-creation platform, preliminary research documents the presence of several implementation barriers. This finding prompts the following research questions:

What are the drivers of and barriers to the joint efforts of a local municipality and university to construct a platform for the networked co-creation of innovative public value outcomes? And what is the pathway to a successful implementation that both secures broad-based participation in a growing number of co-creation projects and stimulates the transition to sustainable urban living?

By answering these questions, this case study of TRD3.0 contributes to understanding the institutional and managerial conditions for reaping the fruits of research-based knowledge

and expertise when co-creating innovative solutions at the local-governance level. A major limitation of the study is that TRD3.0 is an ongoing project. However, there seems to be no end-day of TRD3.0 that will carry on “indefinitely,” thus preventing a summative evaluation of the end of project results (see Patton, 2011).

Drawing on document studies, qualitative interviews, and participant observation, this paper aims to shed light on the drivers of as well as the barriers to the formation and operation of joint “town-gown” co-creation platforms, such as TRD3.0. It explores the background and key features of the new platform, the motivations of the institutional actors behind the initiative, the drivers of interorganizational integration, and the barriers to the development and consolidation of the joint platform for the co-creation of innovative solutions. It also considers the strategic, tactical, and operational depth of the joint effort of the municipality and university to integrate and collaborate. Finally, it reflects on the appropriate governance and leadership responses to emerging problems and challenges in order to identify a possible pathway to successful implementation.

Platforms and arenas supporting the co-creation of public value outcomes

The theoretical framework informing our analysis of TRD3.0 begins with Mark Moore’s (1995) concept of public value. Moore rightly observes that the public sector cannot be reduced to a parasite squandering value produced by the private sector. The public sector produces its own distinct value. This *public value* is defined as the value that services, regulations, and solutions have for the public sphere and what the public values (Bryson, Crosby, & Bloomberg, 2015). These two aspects do not always coincide, as recently observed in relation to the COVID-19 health regulations that are of great value to the public, as they help prevent the spread of a potentially lethal infection, but are not valued positively by all parts of the public, who may suffer from unemployment or revenue loss as a result of repeated lockdowns. However, this only goes to show that public value has little in common with the Aristotelean notion of the common good, as it is essentially a result of a political negotiation of competing and contested claims about what has public value.

While Moore protected the public sector from the neo-liberal criticism of the lack of efficiency and legitimacy, he tied public value creation to public managers, whom he portrayed as entrepreneurial explorers searching for new ways of enhancing public value production (Moore, 1995). Other researchers have argued that public value can be created by many different public and private actors engaged in collaborative governance in and through networks and partnerships (Alford, 2011; Bryson, Sancino, Benington, & Sørensen, 2017; Crosby, ‘t Hart, & Torfing, 2017; O’Flynn, 2007; Stoker, 2006). Indeed, the public value concept can be seen as a *game-changer* that opens our eyes to the key role that co-creation may play in the public sector (Sørensen & Torfing, 2019).

The *co-creation* concept already plays a major role in private business management and marketing, which have discovered that customers could be involved as partners and add value to the product and services they were purchasing (Grönroos, 2011; Prahalad & Ramaswamy, 2002, 2004; Vargo, Maglio, & Akaka, 2008). In public administration theory, Ostrom and her colleagues at Virginia Tech have explored how user-based co-production can improve the efficiency and quality of public services (Parks et al., 1981; Ostrom, 1990, 1996). Building on Ostrom’s work, public administration scholars have expanded the scope of co-production and the range of actors involved (Alford, 1998; Stoker, 2006). Osborne and Strokosch (2013) argue that co-production can be extended to cover the development of entire

public service systems, urban planning, and the attempt to solve complex problems, while Bovaird (2007) and Alford (2011) claim that co-production may involve users, citizens, volunteers, organized stakeholders, business firms, and a variety of public actors.

Others have argued that the broader application of co-production should be labelled co-creation to avoid confusing it with user-based co-production (Torfing, Sørensen, & Røiseland, 2019). Finally, some have argued that co-creation aims to involve a broad range of relevant and affected actors in the creation of new, innovative solutions, whereas co-production is essentially a dyadic relation allowing service users and service producers to use their experiences and competences in the production of a pre-determined service (Ansell & Torfing, 2021). Following this line of argument, we may usefully define co-creation as “*a distributed and collaborative pattern of creative problem-solving that proactively mobilizes public and private resources to jointly define problems and design and implement solutions that are emergent and seek to generate public value*” (Ansell & Torfing, 2021).

Co-creation can be seen as a new kind of “third generation collaboration” (Ansell & Torfing, 2021) adding new and important aspects, such as distributed participation and leadership, a focus on societal resource mobilization and the pursuit of public innovation, to well-established theories of neo-corporatism (Schmitter, 1985), and collaborative governance (Ansell & Gash, 2008; Emerson & Nabatchi, 2015). Hence, the promise of co-creation is in how it may involve relevant and affected actors, including citizens, volunteers, and civil society organizations, in the creation of new and innovative solutions that enhance public value. Sometimes, however, we may succeed in engaging distributed actors in cross-boundary collaboration but fail to foster innovative solutions. At other times, we may produce collaborative innovation but fail to convince anyone that the innovative solutions have public value. Hence, there is no guarantee that the attempt to use multi-actor collaboration as a lever for spurring innovation and producing public value will be successful.

Co-creation processes do not emerge spontaneously when needed, and the actors who try to bring relevant and affected actors together in collaborative problem-solving processes will soon find it a very demanding endeavour (Torfing, 2016). To reap the fruits of collaborative innovation while building a joint ownership to new and bold solutions, we must therefore find new ways of facilitating, supporting, and consolidating co-creation processes through what has been referred to as “generative governance” (O’Reilly, 2011). Generative governance is a form of third-order governance involving the construction of institutional designs that support and facilitate more or less self-regulated governance interaction amongst distributed actors who are engaged in creative problemsolving and design of innovative governance solutions that have value to the public and the public value.

Because co-creation processes are emergent, interactive and partly self-governing, it is important to reflect on how they can be stimulated and supported without trying to predetermine their form, content, and outcome (Kornberger, 2017). This fundamental concern explains the importance of the notion of *platforms*. The platform concept comes from computer science, where it refers to digital technologies that allow distributed users to find and process data and online resources easily and to use them to create their own websites and communication structures (Zittrain, 2006). Thus, the digital platforms created by Google, Apple, and other large tech corporations can be viewed as opportunity structures that enable users to build an application drawing on the resources of the platform without it being either prompted or determined by the platform. The power and impact of such digital platforms are stunning and seem to be growing exponentially by the number of users (McAfee & Brynjolfsson, 2017).

Similarly, platforms for collaborative governance and co-creation aim to facilitate the creation, adaptation, and multiplication of collaborative arenas without defining their form and content (Ansell & Gash, 2018). Co-creation platforms are generative mechanisms that typically provide values, objectives, and storylines that help attract relevant and affected actors, a communication system facilitating interaction between the participants, organizational templates making it easy to initiate and consolidate collaboration, access to both substantive and process-related knowledge and advice, and perhaps even seed money, physical infrastructure, and the professional facilitation of meetings that reduce the transaction costs of collaborating (Ansell & Torfing, 2021).

Platforms are relatively permanent infrastructural designs that support the formation of several temporary co-creation *arenas* that bring together a particular group of public and private actors in distributed interaction through which they aim to define and solve pressing problems in new and innovative ways and in the hope of producing public value outcomes (Ansell & Gash, 2018). Arenas provide an institutional framework for collaborative interaction between a diverse set of actors. They aim to facilitate collaborative interaction by means of setting a joint agenda, clarifying or creating resource interdependency between the participating actors, and forming agreed-upon rules, norms, values, routines, and forms of knowledge that regulate the networked interaction. Arenas may cease to exist once they have co-created a particular problem or realized a new ambition. They may sometimes give rise to new arenas through spill-over or reinvent themselves by expanding their agenda to include new but related objectives. Arenas may also provide feedback to the platform that may be transformed in response to constructive criticisms and suggestions based on past experiences.

Generative governance based on the formation of enduring platforms and temporal arenas supports the shift from the classical view that the public sector should primarily deploy its own resources in the production of public value to a new conception that urges the public sector to invite and engage a broad range of relevant and affected actors in collaborative innovation processes that result in new and better solutions that none of participating actors would have been able to produce by themselves. In short, generative governance is a key condition for realizing the “collaborative advantage” inherent in co-creation (Huxham & Vangen, 2013).

Platforms may be built by a government agency aiming to promote collaborative governance and co-creation, but they may also be crafted by two or more collaborating actors aiming to build a joint platform that both facilitates sustained and mutually beneficial collaboration between the actors involved in constructing it and co-creation of societal solutions with a broader range of actors including private business, civil society organizations and citizens. Building a joint platform for the co-creation of innovative public value outcomes requires positive experiences with past collaboration, strong commitment and synergy amongst leaders and other members of the founding organizations, the ability to produce small, quick and visible wins that demonstrate the usefulness and efficiency of the platform and its various arenas, access to a sufficient amount of resources to cover additional costs, and enough convener power to ensure that other actors will want to join the co-creation arenas established by the platform (see Ansell and Gash, 2008; Martin, Smith and Phillips, 2005). The absence of these important conditions may jeopardize the project and result in a poorly functioning platform that does not meet the expectations.

A distinct set of barriers pertaining to institutional inertia, lack of attention, cultural differences, conflict and rivalry, inappropriate institutional designs, poor management, etc. may also contribute to preventing the successful construction of a joint “town-gown” co-

creation platform. However, public administration research on collaborative platforms and arenas remains in its infancy, and there is a lack of knowledge about the drivers of and barriers to the joint construction of platforms and arenas that may support co-creation of place-based innovation. Insights from the burgeoning research on governance networks may help identify the drivers and barriers and reflect on how drivers can be strengthened and barriers mitigated in order to create successful platforms. The notion of metagovernance (Sørensen & Torfing, 2009) is particularly promising, as it focuses on how public organizations can use institutional design and different forms of strategic and collaborative leadership to influence the processes and outcomes of networked governance without reverting to hierarchical forms of command and control. As such, the notion of metagovernance provides a link between hierarchical forms of government and interactive forms of governance (Torfing, Peters, Pierre, & Sørensen, 2012). Our hope is that this study will shed light on the possibilities, obstacles, and pathways to using platforms and arenas as levers for spurring co-creation.

Methods

The UniverCity project financed by the Norwegian Research Council aims to evaluate the joint attempt of TM and NTNU to build a platform for co-creation that can strengthen both organizations, spur mutual learning and involve the wider society in the production of innovative public value outcomes. TRD3.0 represents a unique attempt at integrating a municipality and university to achieve mutual benefits while improving public governance. It builds on recent experiences with the integration of public hospitals and universities as well as experiences with ad hoc municipality–university collaboration. It takes the latter to a new level, however, by integrating the two separate public organizations and building a joint platform that supports the formation plethora of co-creation arenas with the participation of manifold community actors in collaborative networks. As such, TRD3.0 provides us with a critical case of collaborative platform construction (Ansell and Gash, 2018) involving an ambitious local government and an esteemed knowledge institution. Since, to our knowledge, there are no other similar and equally ambitious cases in Norway,¹ we have no interest in generalization, but are rather concerned with exploring this unique phenomenon with a view to determining whether and how it is possible to realize the joint ambitions of stimulating mutual learning and co-creating solutions to pressing problems and, based on the local experiences, to develop a generic model for municipality–university collaboration for use elsewhere.

Our explorative study is based on mixed methods and draws on multiple data sources, thus allowing for the triangulation of observations. An evaluative mini-survey with both closed and open answers has been administered to a representative sample of public TRD3.0 participants from both the university and the municipality. The document analysis includes initial project descriptions, a memorandum of agreement, relevant steering documents, internal reports, interim evaluations sent to the governing board, minutes from meetings, etc. The interim evaluation reports are based on a series of qualitative interviews with managers and employees from both TM and NTNU as well as scoring of observed board, committee, and project-group meetings. Two of the authors have participated in TRD3.0 from the very beginning and have drawn on their own observations as well. A coding guide specially designed for this study has been used to code, recode and condense all of the qualitative data

¹ While mutual agreements between universities and municipalities are ubiquitous, attempts to promote institutional integration and build a joint platform for co-creation with other actors are not.

material focusing on the main aspects of the research questions. The qualitative data has been used together with the quantitative results from the mini-survey in order to explore the prevalence of particular observations and findings.

One significant source of bias is that the interviews and observations were not conducted using a uniform interview and observation guide based on the research questions and variables on which this study is based. The interviews and observations were made early in the project, and they have a slightly broader scope than this article. Nevertheless, they were informed by the questions of the UniverCity project that largely overlap with the questions that we are interested in here. While this small discrepancy may put a dent in the validity of our study, we judge the problem to be minor, since the available data seems to cover the questions of interest to us quite well. Hence, the data set contains rich and varied information about the background, content, and motivations behind TRD3.0, the drivers and barriers of the interorganizational effort to build a joint co-creation platform, the attempts of the project leaders to metagovern the implementation of TRD3.0, and the public value outcomes that have been generated thus far.

Key findings

Based on the theoretical framework and drawing on our different data sources, we aimed to answer our research questions through an interpretative analysis and came up with these key findings.

TRD3.0—Background and key features

TRD3.0 is a four-year pilot project (01.10.2017–31.12.2021) aiming to build and test a new institutional platform for town-gown interaction with a view to developing a new generic model for collaboration between municipalities and universities that use co-creation in purpose-built networks to enhance sustainable development based on learning-based innovation. TM and NTNU have jointly initiated the project that also includes Steinkjer and Orkdal Municipalities.² As Table 1 shows, TM and NTNU are large and capable organizational actors that are perfectly capable of driving change in this area.

Table 1: Basic data on TM and NTU

	NTNU	TM
Vision	Knowledge for a better world	Big, little Trondheim
Number of employees	7,400 (servicing 40,000 students)	13,000 (servicing 205,000 inhabitants)
Strategic units	5	6
Operational units	10	400 (+ 13 intermunicipal corporations)
Main products	Bachelor, master, and PhD degrees, research-based consultancy and scientific publications	Service solutions in the field of education, health, welfare, culture, infrastructure, and business

² These municipalities are included to explore how they can benefit from collaboration with NTNU despite the fact that the university is not located in their municipality. While this is an important agenda, it is not covered in this paper.

TM and NTNU have many and reasonably good experiences with working together, although collaboration has previously suffered from being relatively uncoordinated, borne by individuals, and often with NTNU as the proactive part. Both organizations welcomed the idea of a further deepening and institutionalization of the TM–NTNU collaboration: TM wanted to play a larger role in joint R&D projects and develop the professional competences of its employees through research-based training and education, while NTNU realized that future research financing was increasingly dependent on user involvement and collaboration with practitioners. Moreover, the TM and NTNU mission statements both tend to link knowledge, collaboration, and sustainable societal transformation. This ideational congruence helped pave the way for further collaboration between the two organizations. Finally, both TM and NTNU are credible and respected conveners that will be able to invite and attract relevant and affected actors and facilitate co-created problem solving in collaborative arenas. In sum, the antecedent conditions for institutional integration and the construction of a joint co-creation platform are relatively favorable.

In addition to these local factors, there are also some national, European, and global conditions that are conducive for the initiation and implementation of TRD3.0. Hence, the overall research policies in Norway seem to have played an indirect role since more and more research money is funneled to user-oriented research, where the research institutions must cooperate with some private or public actor to solve joint problems. The European research programs (FP7, H2020, Horizon Europe) also seem to run in that direction, thus making a local turn to user-oriented research an important strategic move. On an even grander scale, recent decades have seen a growing appreciation of Mode 2 research (Nowotny, Scott, & Gibbons, 2003) and triple- and penta-helix models for research innovation (Etzkowitz & Zhou, 2017; Halibas, Sibayan, & Maata, 2017).

TRD3.0 aims to promote institutional integration between TM and NTNU that facilitates deeper interorganizational cooperation and enhanced interaction with engaged citizens and other stakeholders. The emphasis on multi-actor collaboration provides a new strategic approach to the development of knowledge, competence, and welfare services that seeks to enhance sustainability on the local, national, and global levels. On a more concrete level, the institutional integration involves harmonizing the annual planning cycles of the two partner organizations and the development of new models for sharing or exchanging personnel and the use of the municipality as a laboratory for research and teaching. It also involves the formation of a joint governance board and five joint innovation committees, each with a portfolio of project groups with the participation of external societal actors. The project groups are crucial as they provide temporary arenas for co-creation that are facilitated and supported by a joint co-creation platform. In 2019, the five joint innovation committees together had formed around 20 collaborative project groups.³ The governance board had launched four cross-cutting initiatives in relation to education, life-long learning, professionalizing R&D, and the mission orientation of the partner organizations. The two partner organizations are also continuously involved in the attempt to develop a generic model for collaboration between municipalities and universities that can be used elsewhere. Ideally, the generic model should lead to the formulation of a national standard that enables municipalities and universities to intensify, expand, and formalize their collaboration, obtain state recognition, and receive a grant from the state allowing them to create and exploit local synergies between scientific research, public capacities, and social needs.

³ While more than 160 TM–NTNU collaborative projects are identified in 2020, it is unclear how many are results of TRD3.0.

The interorganizational collaboration and integration in TRD3.0 is supported by a range of digital tools. Open standards and data enable information and data sharing, and digital platforms support online meetings and other exchanges. As part of the vision for a smart, sustainable city, TRD3.0 will also promote the development of novel energy and transport technology, welfare technology, and learning technology.

TRD3.0 will enhance the previous level of interorganizational collaboration and also launch new collaborative initiatives. Both of these ambitions require financing. To that end, it is generally agreed that the two partner organizations will split the costs evenly and work actively to secure external funding via regional, national, and European grant applications. However, if the existing tasks and activities undertaken by TM and NTNU are not reduced through co-created innovations, it is difficult to see how they will finance new activities. In that case, much will depend on luck with external grant applications.

The two partner organizations perceive TRD3.0 as a significant systemic innovation that transforms how the two organizations interact, how they are organized, and how they operate. The systemic innovation aims to create a platform for co-creation that involves actors other than the two partner organizations, the hope being that they will spur policy and service innovation as well as social innovation.

The motivations of the leading actors to build the new co-creation platform

Favorable antecedent conditions are insufficient to ensure successful collaboration between the two partner organizations; they must also be motivated to invest time and energy in the collaborative endeavor that is both demanding and risky.

TM is motivated to participate in TRD3.0 by its need for new, relevant, and updated knowledge and competences that will enable the innovative development of broader, better, and more targeted welfare services and policy solutions promoting social, economic, and environmental sustainability. TM wants to enhance its influence on the content of the NTNU programs and to play a more active role in joint projects rather than merely being an object of investigation. The hope is that TRD3.0 will create a more agile and experiment-friendly municipality in which managers and employees are able to explore and exploit the potential for knowledge-based innovation in collaboration with the university, citizens, and other societal actors.

NTNU's motivation to participate in TRD3.0 is to improve the quality and relevance of its research and education programs through collaboration with TM, to spur innovation, organizational transformation, and digitalization within NTNU, and finally to increase the local and national visibility of the university.

Importantly, both TM and NTNU have motivations and ambitions that can be fulfilled via knowledge sharing, coordination, and collaboration. While this provides a favorable starting point, we also find indication that TM—which is the project owner—is slightly more interested in and committed to participating in TRD3.0 than NTNU. The grant application states that:

Although the municipalities have collaborated with the university and different researchers for quite some time, the efforts within research and education have neither fully covered the need for knowledge and competences nor facilitated proper exploitation. The municipalities participating in TRD3.0 have therefore decided to play a more active role in covering their needs for knowledge and competence by intensifying their collaboration with NTNU.

This quote clearly indicates that the municipality is the active part in the initiation of TRD3.0 and that the university is instrumental to its endeavor to promote the knowledge-based innovation of public governance and service production. In comparison, the grant application describes the importance of TRD3.0 to NTNU in somewhat laconic terms, stating that TRD3.0 “also has a significant R&D potential for NTNU.” The different degrees of commitment may be problematic if the more eager partner criticizes the other partner for being less eager.

The drivers of interorganizational collaboration integration

While TRD3.0 remains in its early stages, our empirical studies have already identified numerous drivers of interorganizational collaboration and integration. Based on their different organizational mandates, the two partner organizations have different goals, structures, and cultures, but they are both geographically tied to Trondheim and thus part of the same “community of destiny” in the sense that they both have a vested interest in the sustainable growth and development of Trondheim, which is geographically isolated in coastal Norway. The local generation of wealth and welfare and the overall reputation and attractiveness of Trondheim has a major impact on the political and economic performance of the municipality and NTNU student admissions. TRD3.0 provides welcome opportunity to join forces to expand the production of local public value outcomes that is likely to benefit both organizations.

TRD3.0 is based on a formal agreement between municipality and university. It is a top-down strategy anchored in the leadership in both organizations. Several organizational leaders on both sides have been involved in developing the project and writing or commenting on the funding application, and they are now involved in governing TRD3.0. This is important, since the leaders of bureaucratic organizations such as TM and NTNU may use a combination of transactional and transformational leadership to generate interest in TRD3.0 among their employees (Jensen et al., 2019). Motivating employees to work in new ways and collaborate with an external partner is nevertheless difficult, since the daily standard operations tend to absorb most of the employees’ attention in both organizations and crowd out the time and energy spent on innovation. Moreover, the NTNU leaders and managers tend to find the effort to motivate employees very challenging due to the strong, lengthy traditions for “free research” at public universities based on a high degree of individual autonomy. Nevertheless, some informants praise the competence and engagement of the leaders and managers. One claims their efforts to be a major driver: “The personal drive and high competence of the leaders of TRD3.0 are key factors in furthering collaboration.” So the leaders may face challenges but still do a good job driving project implementation by prompting interaction.

As an organization, NTNU might well be less interested in collaborating with TM than vice-versa. However, study deans, research leaders, and individual scholars may ultimately have an interest in enhancing their students’ employability, developing new research projects focusing on the municipality, or in the practical testing of theories and ideas through local experiments that may later be reported in scientific publications. Obtaining and communicating small but quick wins from joint collaboration in these areas may persuade more NTNU staff to pursue collaboration with the municipality (Ansell & Gash, 2008). However, to consolidate and expand such collaboration, it must be supported by institutional norms, procedures, and forms of leadership that lower the transaction costs while driving innovation and goal attainment.

The fact that TRD3.0 is subjected to evaluation research conducted by the UniverCity project may also help to spur collaboration by achieving a Hawthorne effect; that is, actors who know that their actions are under scrutiny behave differently and become more actively engaged in producing results. The evaluation approach chosen by UniverCity may help to spur action, as it aims to foster a continuous questioning of methods, processes, ideas, and knowledge rather than merely evaluating planned activities and the ultimate goal achievement (Patton, 2011).

The barriers to the development of a joint platform and multiple arenas for co-creation

There are many barriers to collaborative innovation in the public sector (Torfing, 2016); in relation to TRD3.0, we have uncovered no less than six. It is difficult to determine the degree to which these different barriers hamper the realization of the core objectives of the systemic innovation project, but in principle they may all contribute to slowing down implementation and reducing impact.

One set of barriers relates to the life in big, complex bureaucratic organizations, where it typically takes a long time for new strategic priorities to trickle down to the operational level (Ferlie & Ongaro, 2015). This problem is particularly acute here, since there was no deliberate attempt to secure ex ante support for the new project from the employees and since the project builds on voluntary participation letting those who want to collaborate do so, whereas those who do not want to collaborate can continue as if nothing happened.

According to one of our informants, a particular problem is the lack of dedicated project resources further down in the organization: “The top of the organization often encourages us to start new, interesting projects—but if there are no resources in terms of time and money following the encouragement, we might not do anything.” Furthermore, daily standard operations tend to be prioritized over new innovative activities. One informant points out how “both organizations are pressed for time and it’s difficult to prioritize something that isn’t a primary task.” The TRD3.0 participants also work within well-defined, hard-to-open silos. Hence, three of the five joint innovation committees coincide with pre-existing administrative silos, while only the Smart City Committee is genuinely crosscutting.

One informant notes how many people “defend their own turf.” Moreover, bureaucratic rules, norms, and habits create extensive inertia and, thus, partial resistance to change. According to one of our informants, this problem is exacerbated by how “the municipality and university have different rules that make it difficult to collaborate.” Change actors must play a long game to overcome these bureaucratic barriers and produce clear and visible examples of the value added from TRC3.0 to create a real breakthrough for the new collaborative practices at the operational level. Hence, much depends on the skills and capacity on the tactical level where we find the innovation committees and their various project groups that may produce the kind of results needed to persuade a broader range of actors to engage in collaboration and pursue co-creation as a lever for innovation and public value production.

Another set of barriers relates to the TRD3.0 project itself and how the partner organizations interpret it. TRD3.0 builds on years of relatively intense (albeit somewhat narrowly defined) collaboration, which sometimes renders it difficult for people in the respective organizations to see what is new. There has also been some uncertainty about whether it is okay to work with other actors than those involved in TRD3.0, but since both TM and NTNU have many other partners, it has been agreed that TRD3.0 should not create a collaborative monopoly, aiming instead to foster a broad ecosystem of diverse actors and

collaborations. Moreover, there are competing interpretations of what TRD3.0 is, both between and within the partner organizations. Hence, there seems to be some inherent tension: 1) between the conception of TRD3.0 as a new vision or concrete institutional structure; 2) between the visionary and strategic commitment to the UN Sustainable Development Goals (SDGs) and the effort to create solutions to small, practical local problems and challenges; and 3) between citizen participation (that is important for the municipality) and the involvement of business and tech partners (that is important for NTNU). Finally, the operational-level problem is that the project leaders managing the innovation committees and the various project groups have no real power and scant resources. They can facilitate collaborative interaction but can offer little in terms of organizing resourceful and impactful projects, and thus fail to attract a broad range of relevant and affected actors from both the public and private sectors.

The different degrees of commitment and eagerness reported above also constitute a barrier to collaboration and integration. While TM is eager to spur collaboration and integration to facilitate knowledge-based innovation in response to societal challenges and citizen demands, there is not the same pressure within NTNU to accelerate collaboration; most students and researchers are happy to pursue their own agendas. While access to data, jobs and grant money may simulate the interest in interorganizational collaboration, NTNU does not face the same pressure to deliver co-created governance solutions and public value outcomes as TM, which is led by elected politicians who are held to account by the voters in regular elections. For that reason, NTNU may appear as a reluctant, foot-dragging partner. This impression is enhanced by the fact that NTNU has a rather slow and unhurried internal decision-making process. Discrepancies in perceived commitment are a barrier to collaboration and integration in TRD3.0, because it undermines the trust relationship, which renders communication difficult (Covey & Merrill, 2006). The worst-case scenario is that the allegedly less committed actors are accused of sabotage.

The governance structure established by TRD3.0 has proven too complex and is seen as posing a barrier to the problem-solving capacity. The governance board is too distant from the discussions and interactions taking place in the innovation committees and the project groups, and there are too few meetings in the governance board to effectively set the course and solve emerging problems and conflicts. That means that most tasks are left to the individual committee leader and project coordinator, who have no formal leadership competence within TM and NTNU, but function as the daily TRD3.0 leaders. Consequently, problems and conflicts are not always properly solved, but allowed to continue and grow, thus undermining the collaborative efforts of TRD3.0.

Leadership challenges, competing demands, and incomplete leadership skills also inhibit the promotion of collaboration and co-creation. The overall strategic leadership appears to be clear and strong in terms of the development and understanding of joint project objectives that are well-anchored in the two partner organizations. However, the organizational leaders are not equally committed to TRD3.0, they rarely meet up in the governance board (about 9 months between meetings), and they tend to have problems reaching out to and mobilizing organizational actors at the tactical and operational levels. Hence, their capacity to solve problems and conflicts is low. At the tactical level, the project leaders responsible for the five joint innovation committees bear a major responsibility for using the TRD3.0 platform to form project-based co-creation arenas and to lead a growing number of project groups. The project leaders have a difficult task, as they must form projects, convene and coordinate actors, prioritize between competing tasks and goals, mediate conflicts, drive progress, catalyze change and innovation, ensure implementation, and

make results visible. They are expected to know both partner organizations well and to act as boundary spanners, linking and translating between multiple actors. Finally, project leaders are often facing unclear organizational demands while simultaneously aiming to support project-level, self-regulated interaction. Meeting this tall order is obviously difficult, as it requires a particular skillset together with learning-enhancing interaction with other project managers that said, the project leaders have come a long way in finding ways to tackle the many challenges by learning from each other.

Governance and leadership responses to emerging problems and challenges

Many of the barriers above are familiar to the TRD3.0 participants, who are trying to overcome them by building on prior and new positive experiences, fostering cross-boundary dialogue, building trust, sharing information about each other's organizations, and gradually steering attention towards the common objectives relating to finding sustainable solutions to pressing problems in Trondheim.

An important response to the barriers is the exercise of metagovernance, defined as the attempt to influence the process and results of collaborative interaction without excessively reverting to hierarchical imposition (Torfing et al., 2012). TRD3.0 has combined hands-off metagovernance aiming to re-design the governance structure with hands-on metagovernance seeking to empower project leaders to remove barriers related to the exercise of leadership at the tactical and operational levels. Hence, governance and leadership has been strengthened by creating a cross-cutting team consisting of the five committee and project leaders who now work closely together to share knowledge, coordinate new initiatives, and support each other in identifying and supporting crosscutting collaboration.

Thus far, however, the recent metagovernance efforts have been insufficient. TRD3.0 is a highly ambitious development project that must be supported by a strategic governance system consisting of a clear command structure, procedures for portfolio management, tools for collaboration, and quality insurance (Chou, Tserng, Lin, & Huang, 2015). There are only a few elements of such a governance system that is strictly necessary for promoting systemic innovation in parallel to the daily operations. The new joint innovation committees are important, but they lack a clear mandate, decisionmaking authority, and resources. As such, TRD3.0 remains a "side wagon" to both organizations; the project can shout out instructions to those in the driver's seat, but neither has a hand on the wheel nor a foot on the brakes.

The depth and results of the interorganizational collaboration and integration in TRD3.0

The intentions behind and plans for TRD3.0 are supported by key drivers but also hampered by several barriers, only a few of which have been addressed appropriately through metagovernance. Consequently, the depth of the municipality–university interorganizational collaboration and integration remains modest.

At the *strategic level*, commitment to and ownership of TRD3.0 is strong, but the impact of strategic leadership is limited and there is still some way to go before the two partners can act in a concerted manner and reap the fruits of their joint co-creation platform. At the *tactical level*, TM and NTNU have initiated a growing number of projects that are well under way and beginning to produce visible results. Nevertheless, the partner organizations are short of focusing and prioritizing their collaborative efforts so that they become aligned with TRD3.0's overall objectives. The *operational level* in terms of the concrete interaction in project groups and other arenas for collaboration involving TM, NTNU, and other relevant local actors is largely neglected in the existing data set, and we therefore abstain from a heavy-handed analytical assessment of the depth of the integration and collaboration. However, some informants and our document studies seem to indicate that the external

collaboration with local citizens and stakeholders remains limited and that the collaborative efforts in the project groups have yet to foster significant innovation.

A preliminary assessment of the results of the current level of interorganizational collaboration and integration shows that TM now has better knowledge and resources on which to base its decisions, priorities and operations, while the NTNU master, PhD and mid-career degree programs have benefitted from collaboration with TM, as their practical relevance has improved. There are also more tangible results, such as the establishment of the UN Center, improved education and integration policies, a broadening of the smart city concept, a new leadership school, initiation of new partnerships, and the fabrication of joint grant applications. However, the construction of arenas for external collaboration and the co-creation of innovative solutions for enhanced social, economic, and environmental sustainability have yet to gain sufficient momentum. In sum, the vision for the development of a penta-helix model has not been fully realized.

The main achievement thus far is that TM and NTNU have gotten to know each other much better and exchanged valuable knowledge and information. Consequently, they now see new and greater opportunities for collaborative innovation. In sum, the conditions for enhanced research and development have been improved. This might look like a meagre result, as the coordination and collaboration with external actors facilitated by the joint co-creation platform remains limited; nevertheless, given that there has been no extra funding for joint projects and co-creation with citizens and stakeholders, the two partner organizations believe that the current achievements exceed their expectations. TRD3.0 is only halfway into the initially agreed project period, which is now being extended, so there is good time to achieve the overall objectives of forming a joint co-creation platform to spur sustainability and create a new standard for municipality–university collaboration.

TM seems determined to further enhance the impact of TRD3.0 by influencing the content of joint research projects earlier in the process to tailor them to local needs and aiming to influence what the NTNU students and researchers choose to study and when and how they use the municipality as a laboratory and testing ground for knowledge production. While steering the attentions of researchers and students might be an uphill struggle given the high degree of individualization of both researchers and students, our study shows that NTNU is increasingly concerned about expanding the volume of its applied research and generating new knowledge and practical results that create value for local citizens, which is something that research grant organizations appreciate. Hence, NTNU may welcome the new initiatives launched by TM.

A generic model for municipality–university collaboration

Both TM and NTNU make several agreements to collaborate with a range of actors every year, and the TRD3.0 is by no means unique in that sense.⁴ However, the level of institutional integration, the attempt to build a platform for co-creation involving other actors, and the ambition to develop a national standard for municipality–university collaboration distinguishes it. The newness and scale of ambition and endeavor in the upgrading of the existing TM–NTNU collaboration immediately earned TRD3.0 an innovation award. Hence, the expectations to additional achievements have been high.

⁴ The term “university municipality” is used, for instance by, Ålesund for their agreement with NTNU. There is even a “University Region of Nord-Østerdalen” consisting of six tiny municipalities and NTNU.

The above analysis of TRD3.0 shows that while collaboration and integration are well under way and new collaborative projects aim to co-create innovative public value solutions in response to local problems and challenges, the overall ambition to build a co-creation platform that reaps the fruits of the TM–NTNU collaboration, as well as with eternal actors, has yet to be achieved. This begs the question of whether the ultimate goal of creating a generic model of municipality–university collaboration has been accomplished. Halfway into the initially agreed project period, a generic model has yet to emerge despite many discussions and reflections about best practices. That does not mean that it will not emerge. The lesson drawn thus far by TRD3.0 is that the collaboration and integration of municipalities and universities and their joint construction of a co-creation platform is predicated on four crucial factors: 1) joint agreement about the overall strategic goals supported by clear political decisions in the respective organizations; 2) provision of dedicated resources at the tactical level and recruitment of a team of highly committed members from both organizations; 3) prioritization of where and how to collaborate and when to invite other actors into problem-focused co-creation arenas; and 4) adoption of an ecosystem perspective that recognizes the plurality of actors that must be involved in co-creating knowledge-based transformations towards sustainable public value outcomes. This preliminary insight needs further testing and validation before a generic model can be formulated.

Conclusion

In the last decade, the public sector has learned to count to three and more. For a long time, addressing public problems, challenges, and ambitions was considered solely a job for unitary bureaucratic organizations based on hierarchical control, professional specialization, and rule-following (Du Gay, 2005). In the wake of the fierce criticism of public bureaucracy for being ossified and inefficient (Downs, 1967), New Public Management (NPM) reforms introduced an institutionalized competition between public and private service providers who were supposed to compete for contracts and customers (Hood, 1991). Finally, the mounting criticism of NPM for leading to a growing fragmentation of the public sector (O’Sullivan & Patel, 2004), failing to mobilize societal resources (Osborne, 2010), and spurring public innovation (Ansell & Torfing, 2014) has stimulated the interest in co-creation that involves a plethora of public and private actors in creative problemsolving that may spur innovation and enhance public value production (Brandsen, Steen & Verschuere, 2018).

The research on co-creation tends to focus on the process and outcomes of problem-focused collaboration between relevant and affected actors and seldom analyzes how co-creation arenas can be supported and facilitated by platforms that provide resources, templates, and process management lowering the transaction costs of collaborating (Ansell & Gash, 2018). Moreover, there are few studies of how municipalities and universities can join forces, strive for institutional integration and together construct a local platform for collaboration, innovation, and public value creation. Hence, while there is an abundance of studies examining the collaboration between government agencies and private business (Wilson, 2012), scant attention has been directed to institutional forms of “town and gown” cooperation (but see Martin, Smith, Phillips, 2005; Massey, Field, Chan, 2014; Mayfield, 2001). This is a pity, since the involvement of knowledge institutions in public governance, service production, and the construction of co-creation platforms may help to ensure that new governance solutions are based on new and updated scientific knowledge and that public research is informed by societal needs and public concerns.

In an attempt at shedding light on state-of-the-art effort between a local municipality and university to spur integration, collaboration, and the co-creation of innovative solutions, this paper has described, analyzed, and assessed the contemporary Norwegian case of TRD3.0. Our main finding is that the antecedent conditions are favorable and a number of key drivers are in place, but that a broad range of barriers, which have not yet been properly addressed and mitigated by metagovernance, have prevented the realization of the full potential of the systemic innovation that TRD3.0 represents. There is some measure of strategic and tactical collaboration and integration, but this has merely resulted thus far in improved conditions for future collaboration and innovation. The tangible results are few and far between, and the mobilizing effect of the new co-creation platform is limited, as TM and NTNU tend to dominate the co-creation arenas, and large-scale involvement of local citizens and stakeholders is absent. This might change in the second half of the project period, especially if two conditions are fulfilled: 1) the improved conditions for further collaboration are exploited based on transformative and distributive leadership; and 2) the effort to metagovernance the collaborative governance process through the design of systemic and institutional support for interorganizational collaboration and multi-actor co-creation is strengthened. A final push towards the expansion and consolidation of collaborative governance and co-creation may provide further evidence of what it takes to institutionalize collaboration between municipalities, universities, and wider society, thereby producing a national standard for sustained interaction.

Our study adds to the growing interest in how public organizations can be transformed into platforms for co-creation by emphasizing the role of knowledge institutions, such as universities. Our results emphasize that the importance of institutional design and leadership in facilitating systemic innovation are commonsensical, but they cannot be generalized to a wider population of university municipalities, since such a population does not exist. Nevertheless, our study identifies a range of conditions, drivers, barriers, and practices of metagovernance that may support or hamper attempts to spur co-creation. We willingly admit that our data are not solid enough to illuminate the operational-level dynamics. Further research is planned to compensate for this deficiency and will thus help to create a fuller picture of how civil servants and academic researchers can share knowledge and insights and involve local stakeholders in creating much needed sustainability solutions.

Our recommendations for policy are to support local experimentation and evaluation, disseminate best practices and generic templates like the one TRD3.0 seeks to develop, and to ensure that local needs for training are met. University–municipality collaboration cannot be forced top-down; it must instead grow “from below”, with central government agencies as midwives and facilitators.

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