Identifying mechanisms for achieving voluntary data sharing in cross-sector partnerships for public good[*]

Iryna Susha[†]
School of Business, Orebro University, Sweden and Faculty of Technology, Policy and Management, Delft University of Technology, The Netherlands, iryna.susha@oru.se

Boriana Rukanova
Faculty of Technology, Policy and Management, Delft University of Technology, The Netherlands, B.D.Rukanova@tudelft.nl

J. Ramon Gil-Garcia
University at Albany State University of New York, USA & Universidad de las Americas Puebla, Mexico, jgil-garcia@ctg.albany.edu

Yao-Hua Tan
Faculty of Technology, Policy and Management, Delft University of Technology, The Netherlands, Y.Tan@tudelft.nl

Mila Gasco Hernandez
CTG at University at Albany – SUNY USA, mgasco@ctg.albany.edu

ABSTRACT

It has been advocated that sharing business data can generate public value. Still this information sharing often needs to be done on voluntary basis and that often poses major challenges. The main research question addressed in this paper is: How is voluntary information sharing to create public value achieved and what are the drivers and mechanisms to achieve that? While voluntary information sharing to achieve public value is recognized in the eGovernment literature, this literature is limited to understand how such information sharing can be achieved. To address the research question, we borrow a framework of platforms for cross sector social partnerships from organization studies and use it as a conceptual lens to structure the analysis of three case studies where voluntary information sharing was achieved in different domains. Building on the framework and our case analysis, we distinguish three types of information sharing collaborations, namely Resource-dependence platform, Social Issue platform, and Societal Sector platform which allow to distinguish the motivations why parties enter into voluntary information sharing collaborations. Our analysis

suggests that while the higher goal of the voluntary information sharing may be the same (i.e. to create public value), parties are driven by different motivations of why they enter into the information sharing collaborations. Furthermore, in each of these different types of collaborations the mechanisms of how the information sharing was achieved, as well as the role the government can play, differ.

CCS CONCEPTS

• Applied computing~Computing in government   • General and reference~Empirical studies

KEYWORDS

Public value, business-government, NGO-government, information sharing, international trade, disaster response, cross-sector social partnership, interorganizational collaboration, ICT

[†]Corresponding author

1   Introduction

It has been argued that information sharing of business data can not only generate benefits for private entities but also create public value. Still this information sharing often needs to be done

on voluntary basis and that poses major challenges. While voluntary information sharing to achieve public value is recognized in the eGovernment literature, this literature offers a limited understanding of how such information sharing can be achieved, particularly when it comes to voluntary private sector data sharing to create public value. eGovernment literature has addressed information sharing from multiple angles, for instance as transnational public sector networks (Dawes, Gharawi, & Burke, 2012), cross-boundary information sharing (Yang & Wu, 2014), and government information sharing (Gil-Garcia, Chun, & Janssen, 2009; Gil-Garcia, Chengalur-Smith, & Duchessi, 2007), to name a few. However, the focus has been predominantly on information sharing across government agencies.

The main question addressed in this paper is: *How is voluntary information sharing of business data to create public value achieved and what are the drivers and mechanisms for that?* In order to address the research question, we borrow the framework of platforms for cross-sector social partnerships (CSSP) from organization studies (Selsky & Parker, 2010). Cross-sector social partnerships are "cross sector projects formed explicitly to address social issues and causes that actively engage the partners on an ongoing basis" (Selsky & Parker, 2005, p.850). Thus, this definition highlights the cross-sectoral nature of collaboration and its focus on contributing to a social cause. While this framework was originally developed for collaborations in general and not specifically for collaborations aimed at information sharing, in this paper we explore the potential of this framework to bring insights into voluntary information sharing collaborations. This framework provides an interesting theoretical perspective as it allows to distinguish among three types of collaborations depending on the main motivation for collaboration (resource-dependence, social issue, and societal sector) and as such it seems to provide a suitable conceptual lens to answer our research question.

In this paper we apply the cross-sector social partnership framework as a conceptual lens to structure the analysis of three case studies where voluntary information sharing was achieved, namely (1) a case study from the international trade domain where business information is voluntary shared with authorities to address public values of safety and security and trade facilitation; (2) the case of voluntary sharing of mobile telephone data from a telecom operator in Nepal with an NGO in Sweden to provide information for disaster response, and (3) a case for food traceability in the state of New York, where voluntary information sharing helps to determine the local origin of goods and stimulate local production and consumption.

The remaining part of this paper is structured as follows. In Section 2 we review relevant research on the topic, in Section 3 we present our theoretical framework, followed by the method, which is discussed in Section 4. In section 5 we present the findings of our case analysis and we end the paper with Discussion and Conclusions presented in Section 6 and 7 respectively.

2 Voluntary sharing of private sector data for public good

Several concepts have emerged in the past years which capture different aspects of voluntary data sharing by public and private organizations. One such concept is smart disclosure whereby data about consumer products, companies, services, and consumers themselves is opened up by businesses to foster innovation and enable better purchasing decisions by consumers (Sayogo & Pardo, 2013; Sayogo et al., 2014). Another concept is cross boundary information sharing (CBIS) which in the context of the public sector could be conceptualized as the combination of four interrelated components (Gil-Garcia, Pardo & Burke, 2010): (1) trusted social networks, (2) shared information, (3) integrated data, and (4) interoperable technical infrastructure.

If well done, cross-boundary information sharing could help to jointly solve complex problems that individual agencies are not able to solve (De Bri & Bannister, 2010; Klievink & Janssen, 2009; Tapscott & Caston, 1993). However, sharing information across boundaries is not an easy task and important challenges have been identified in previous literature (Gharawi & Dawes, 2010; Pardo & Tayi, 2007; Welch et al., 2016). Based on a review of current literature, Gil-Garcia and Sayogo (2016) propose to classify these challenges into the following categories: (1) information, (2) technology, (3) managerial, (4) organizational, (5) policy, (6) political, and (7) contextual. Not all challenges are equally relevant to a specific CBIS initiative, but participants should be paying attention to all of them in order to increase the probabilities of success.

Most of the literature on CBIS focused on sharing within the public sector, however, the discussion in this field is now moving towards putting the spotlight on the public-private relationship (Gil-Garcia, Pardo and Sutherland, 2016; Sutherland et al., 2018). In some of these partnerships government has regulatory authority and can force private companies to share certain information. However, in other cases, government is just another actor in the network and the sharing of information is totally or mostly voluntary. The concept of a data driven social partnership is of relevance too, although it is not limited to data sharing but encompasses more broadly "collaboration between actors in one or more sectors to leverage data from different parties, at any stage of its lifecycle, for public benefit in policy or science" (Susha, Gronlund & Van Tulder, 2019). A closely related concept is that of data collaborative which focuses on corporate data sharing to create public value (Verhulst & Sangokoya, 2015). Data collaboratives are emerging as a novel form of cross sector and public-private partnerships catalyzed by the big data trend and the need to address complex societal challenges collectively. Companies get involved in data collaboratives and donate data for a variety of reasons, such as: reciprocity; research, recruitment, and insights; reputation and public relations; increasing revenue; and regulatory compliance; responsibility and corporate philanthropy (Klein & Verhulst, 2017).

More broadly, according to Yang & Maxwell's model (2011), information sharing among organizations is influenced by three groups of factors: (1) members' beliefs, e.g. self-interest,

reciprocity, cost-benefit analysis; (2) characteristics of the organizations, e.g. organizational culture, norms; and (3) incentives, characteristics of the information to be shared, power games, trust, absorptive capacity, among others. Literature on interorganizational collaboration offers further insights into motivations of companies to enter into partnerships with other sectors. Gray and Stites (2013) proposed four generic motivations for companies that are involved in inter-organizational collaboration: (1) legitimacy-oriented motivations, (2) competency-oriented motivations, (3) resource-oriented motivations, and (4) society-oriented motivations. However, as Le Pennec & Raufflet (2018) write, "the ultimate motivation — the fundamental raison d'eˆ tre of an inter-organizational collaboration — is value creation" (Ibid., p.819).

Table 1: Dimensions of platforms for cross sector social partnerships (adopted from Selsky & Parker, 2010)

Platform Dimensions	Resource-dependence	Social Issue	Societal sector
Primary interest	Voluntary, based largely on self-interest with secondary interest in the social issue	Mandated or designed around a social problem	Mixed self- and social interest
Contextual factors	Pressure for mission related performance	Pressure for CSR	Pressure for adaptation to complexity, turbulence
Sources of cross-sectoral social partnership problem definition	Each organization brings its definition to the partnership	Externally defined by existing interest groups & public issues	Envisioned or emergent public issues; constructed over time
Orientation	Transactional – each partner solves its problem with added benefit of addressing a social issue	Integrative – address the social issue with the added benefit of organizational ''goods''	Integrative – explore and learn about the issue area; a social investment
Dependencies	Retain autonomy	Manage/segment interdependencies; ''layer cake'' (stacked on top of one another)	Integrate interdependencies; ''marble cake'' (blended at margins but distinct at core)
Timeframes	Finite, delimited to meet organizational needs	Finite or indefinite depending on the social need/issue	Long term and open ended to enhance learning
Conceptualization of sectors	Organizations operate in fixed sectors; clear functions & boundaries	Business sector contributes to addressing concerns regarding public- & semi-public goods of other sectors; substitution logic	Organizations are not distinct sectorally; shifting functions & boundaries; partnership logic
Prospective sense-making themes	The past; the needs of the entities/partners	The present; the social issue/cause	The future; new sectoral roles and social innovation

Research on these issues is emergent and has more open questions than answers. It is still unclear how such collaborations are formed and what drivers and mechanisms should be in place to achieve information sharing. For companies it may be counterintuitive to share data which otherwise can contribute to competitive advantage so understanding what conditions need to

be in place to have companies share the data is important. There is a wide research gap in unveiling drivers and mechanisms for sharing private sector data for public good (Susha et al., 2019).

3   Theoretical framework

In our study we propose to use the framework of platforms for cross sector social partnerships by Selsky & Parker (2010). As eGovernment literature offers a limited perspective, we borrow this framework from the literature on cross sector social partnerships and in our study adapt it to information sharing collaborations aimed for public good.

The framework describes three kinds of partnerships (Table 1) which differ based on their rationale, definition of the problem, design, scope, level of control. According to the authors, these three types are "platforms" which they define as "a sensemaking device that managers use to envision a partnership project, frame it, and make it meaningful and sensible" (Ibid., p. 24). We selected this framework because it allows to distinguish among three types of collaborations depending on the main motivation for the collaboration (Resource-dependence, Social Issue, and Societal Sector). These three perspectives allow to capture explicitly the incentives and drivers of the parties when entering into a collaboration and the necessary conditions for the collaboration to materialize.

This framework was developed to describe partnerships between organizations in different sectors which have a social orientation. This makes it suitable for our study given our focus on voluntary data sharing for public good. This framework however does not describe any data sharing aspects, hence we expect to make a contribution in this regard. Our goal is thus to investigate whether this framework can help us to gain further insights into enabling conditions and mechanisms for achieving voluntary information sharing to create public value and the role of government in these collaborations.

4   Method

Our motivation for this paper was to try to understand what motivates parties to step-in voluntary information sharing collaborations to create public value and how they are able to achieve such voluntary information sharing. We chose to conduct comparative case studies for our analysis. We selected three cases by purpose of theoretical sampling (Eisenhardt & Graebner, 2007), meaning that we selected cases that are likely to replicate or extend theory (our theoretical framework). This would allow us to extend the cross-sector partnerships framework to private sector information sharing to create public value. We selected cases which demonstrate each of the three partnership platforms in an information sharing context.

Flowminder Disaster Response case. Shortly after 2015 earthquake in Nepal, call detail records of 12 million mobile phone users in Nepal were shared by the Nepali telecom operator NCell with a non-profit Flowminder in Sweden. Flowminder analyzed the data to map population flows after the disaster to provide insights to disaster responders and relief workers.

Flora Holland International Trade case. The FloraHolland case focused on import of flowers from Kenya to the Netherlands. FloraHolland as a cooperative of growers aimed to improve the logistic processes for importing flowers from Kenya to the Netherlands by entering in collaboration with the authorities. The key of the solution was that FloraHolland and the supply chain partners were willing to share additional business information (such a pro-forma invoice, packing list) on voluntary basis with the authorities in the Netherlands. Customs in the Netherlands would use this information to cross-validate the Customs declarations and perform risk assessment for fiscal, as well as safety and security purposes more efficiently and provide trade facilitation for FloraHolland and its members in return. As such business information was shared on voluntary basis to address public concerns related to safety and security, fiscal compliance and trade facilitation.

Food Traceability for Local Farms in NYS. In recent years, New York State governor became very interested in increasing the amount of local food consumed in the state, particularly by institutions such as public universities, correctional facilities, and schools. The goal is to help local farms and institutions to understand their current capabilities and overcome some of the challenges that currently hinder the consumption of more local produce by public institutions. In the case of farmers, it is not only about technical capabilities and resources, but also economic and ideological motivations. It seems that policies may also play a significant role, but this is not clear at this point.

4.1 Data collection

The table below provides a summary of the data collection efforts in each of the three case that are subject to our analysis. We conducted secondary analyses of cases reported separately in different projects where the authors were involved. The projects deployed different data collection strategies (see Table 2 below). In our study we re-analyzed relevant data from these projects comparatively.

4.2 Data analysis

We conducted the case studies and the cross-case comparison in the interpretative tradition (Walsham, 1995). Each of the cases was analyzed through the conceptual lens of the cross-sector social partnership framework (using the categories defined in the conceptual framework).

When applying the framework to each case, we found out that the framework is able to present a static view of each case and capture different motivations but was not able to capture the dynamics of the process and steps that led to achieve the voluntary information sharing. We added this dynamic view as part of our case analysis. As we were also interested to explore the role of government in this collaboration, in each of the case descriptions we also added an explicit reflection on the role of government. As such our case analysis consisted of three parts, namely: a) application of the framework to identify the drivers of the collaboration; (2) the process and mechanisms for achieving information sharing; (3) the role of government in that process.

These three categories were also used in the cross-case comparison to discuss the findings.

Table 2: Overview of data collection

Cases	Data collection
FloraHolland case (2014-2018)	The data was collected as part of the CORE EU project and the specific FloraHolland demo. Data collection included: participation in project meetings; interviews; review of documents and reports related to the FloraHolland supply chain operations, as well as Customs control; Policy documents on trade facilitation and Customs compliance; Visit to Kenya; Participation in Steering Committee Meetings for the FloraHolland demo.
Flowminder case (2017)	The data was collected as part of the research project "Data Collaboratives as a New Form of Innovation for Addressing Societal Challenges in the Age of Data". Data collection included: document studies and interviews.
Food Traceability case (2017)	The data was collected as part of the research project "Towards a Data and Technology Architecture for Smart Food Policy: Understanding the Critical Factors of Food Traceability for Small Farms". Data included semi-structure interviews and government and private sector documents.

4.3 Role of the researcher

The data was collected separately, where one of the authors was the main source for accessing specific case data. Regular discussions were conducted for the researchers to get a better understanding of the different cases, as well as to have a common understanding of how to apply the theoretical framework and the steps in the analysis. During the data analysis the research team discussed the findings, where gaps or discrepancies were identified further analysis of the existing data was conducted. The involvement of the researchers with the cases differed. In the FloraHolland the researchers that were working on this case were actively involved; while the respective involvement of the researchers involved in the data collection for the other two cases was more remote and they relied on interviews and document analysis. Nevertheless, all the cases provided rich insights for understanding to allow to carry out the analysis.

5   Case results

Our analysis based on the three cases and through the conceptual lens of the framework of cross-sector social partnership theory suggests that the three types of platforms that are observed for social partnerships can be used to explain information sharing arrangements as well. Understanding the differences among the three platforms is important, as it will help to better understand information sharing collaborations in the future and what the role of government could be. By using examples from the FloraHolland, Flowminder, and the Food Traceability cases we illustrate the mechanisms that were used to achieve information sharing in each of these platform types and we reflect on the role of government in that process.

5.1 Resource-dependence platform for voluntary information sharing – example of Flora Holland international trade case

The information sharing collaboration that we observe in the FloraHoland case can be seen as a resource-dependence platform for information sharing. The framework describes the resource-dependence platform as largely driven by self-interest of the parties with secondary interest in the social issue. This type of collaboration is further characterized as being influenced by contextual factors, such as pressure for mission-related performance. Regarding the problem definition of the partnership, it is considered that each organization brings its own problem definition to the partnership.   This collaboration is seen as transactional in orientation, where each partner solves its own problem with added benefits of addressing a social issue. Regarding dependency, the organizations retain autonomy during the partnership and the collaboration is limited in terms of timeframe till it meets the organizational needs. Looking at the conceptualization of the sector for this type of partnership, it is seen that organizations operate in fixed sectors with clear functions and boundaries. The prospective sense-making themes are centered around the past and the needs of the entities/ partners. The table below describes the FloraHolland characteristics along the dimensions of the framework of cross-sector social partnership. While we will not explain the table in detail due to space limitations, a number of observations can be derived regarding information sharing collaboration in the FloraHolland case.

Table 3: Characterization of the Flora Holland international trade case as a Resource Dependence platform

Dimensions	Characterization
Primary interest	Businesses: incentives for efficiencies and economic incentives; to provide better services to the members of the cooperative; Government (Customs): need for additional business information for better risk analysis; trade facilitation
Contextual factors	International developments such as WCO SAFE Framework of Standards for improved safety and security; EU and global initiative around safety and security; WTO Trade facilitation agreement and national mandate of governments to implement measures; International rankings such as the Logistics Performance Index
Sources of CSSP problem definition	FloraHolland interested in faster clearance time, predictability and lowering costs; Dutch Customs interested in more efficient risk analysis and facilitation of legitimate trade
Orientation	FloraHolland primary interest is its business interests, but is aware and wants to collaborate to solve also the social issues; Dutch Customs primarily focused on social issue
Dependencies	The organizations remain autonomy
Timeframes	The initiative for the collaboration was temporarily for the project, however there are effects beyond the projects for scaling up and implementing the results.
Conceptualization of sectors	The functions and boundaries are to a large extent fixed and clear but both on the business and Customs side there is a tendency for transformation. FloraHolland is transiting from more traditional focus on auctioning towards logistics facilitation. Customs is gaining more and more responsibilities (in the context of safety and security, trade facilitation and other emerging)
Prospective sense-making themes	The past and the needs of the entities/partners

First of all, the collaboration was driven largely from the own interests of FloraHolland and Customs, where FloraHolland aimed to ensure logistics efficiency gains and related costs savings for their members and Customs was interested in more efficient risk analysis for safety and security, as well as fiscal purposes, as well as to enable trade facilitation. These developments were influenced largely by contextual factors, such as policies of governments towards increased control for safety and security (e.g. the World Customs Organization's SAFE Framework of Standards), as well as the Trade Facilitation Agreement of the World Trade Association. The primary interests of the organizations differed, as FloraHooland had primarily economic interest for making import to Europe more efficient to its members, while the Customs was mainly interested in social issues. Still as a secondary objective FloraHolland was interested also in social issues, as by making trade with the Netherlands easier for Kenyan exporters that stimulates the economic growth for Kenya. The FloraHolland and Customs remained independent organizations in this collaboration. The collaboration was set-up in the form of a temporary project but the effects spanned beyond the project for scaling up and implementing the results and the model is being expanded to other countries and industries. This collaboration became possible also due to developments in the sector, where Dutch Customs is looking for innovative ways to achieve the safety and security and trade facilitation objectives. At the same time the drive for the business to participate in innovation projects and be open for sharing business information with authorities was driven by the internal refocusing of FloraHolland which traditionally had an important function as an auction towards an organization which can play a key role in logistic facilitation of its members. In the sense-making process both FloraHolland and Customs brought their own concerns and the process was largely focused on the search of the win-wins.

Reflecting on the process and the mechanisms of how information sharing was achieved in the FloraHolland case, two important processes took place. First, it was the search for win-wins, which was a complex process. While for the authorities it was clear that they will benefit from additional business data to be able to cross-validate the customs declarations, for businesses the business benefits were not immediately clear, and they needed a clear business case so that they can sell the idea internally so that the company could make further investments in information sharing infrastructures. Finding the win-wins and making the business cases explicit was a key step in that process. The second step that was essential was after articulating the value for business customs was willing to start complex alignment processes (legal, IT, procedural) with other authorities nationally and internationally to make it possible to realize the business benefits that were identified in the win-win scenario.

Reflecting on the role of government in this case we see that government plays a very active role in the information sharing collaboration for helping to articulate the win-win scenarios and for driving complex alignment processes with other authorities nationally and internationally to enable further implementation and upscaling of the win-win scenarios in order to realize the benefits of voluntary information sharing to create both public and private value.

5.2 Social issue platform for voluntary information sharing – example of Flowminder disaster response case

The information sharing collaboration that we observe in the Flowminder case can be seen as a Social Issue platform for information sharing. The framework posits that collaborations designed as Social Issue platforms are formed around an externally defined social problem. In contrast with the Resource Dependence platform and domination of self-interest drivers, these collaborations are driven by a normative orientation that businesses, public agencies, nonprofits have a social responsibility towards such a problem. Thus, corporate social responsibility is seen as an influential contextual factor in this type of partnerships. This platform is seen as integrative in orientation meaning that the partners address the social problem in question with an added benefit of achieving possible organizational gains. Regarding dependency, the organizations segment and manage dependencies and follow the 'substitution logic' of having private sector contribute to addressing a public concern which is typically seen as the 'natural' domain of the public sector. The prospective sense-making themes are centered around the present and the social problem at stake. These partnerships can change over time and their timeframe depends on the social problem. The table below describes the characteristics of the Flowminder case along the dimensions of the framework of cross-sector social partnership.

The partnership between Flowminder and the Nepali telecom operator NCell was formed as a response to the 7.8 magnitude earthquake which hit Nepal on 25 April 2015 and left 9 000 people killed and 23 000 injured. The goal of the partnership was to make it possible to map population flows based on the telecom call detail records and thereby support decisions on relief aid distribution. Thus, the partnership materialized around an externally defined issue to which it was believed businesses ought to contribute through corporate social responsibility and data donation in this case. The interests of the partners were aligned in their mission to help address the social problem, however as an added benefit the organizations enhanced their reputation, were exposed to new collaboration opportunities and external data expertise, and gained a positive image. Both partners remained autonomous, however there was a crossing of boundary between public and private. The collaboration was finite and focused on the present, as it was timed to the aftermath of the earthquake. However, it laid a foundation for possible future projects of similar kind.

Reflecting on the process and the mechanisms of how information sharing was achieved in the Flowminder case, it is important to highlight the following. First, the urgency of the problem played a decisive role in the telecom's decision to share data. NCell was approached by Flowminder on several occasions with a proposal to share data and collaborate but it is not until the earthquake hit that NCell agreed to do so. Second, another influential mechanism to achieve voluntary data sharing in this case was the network effect of pressure from the ecosystem of

humanitarian actors. Many different organizations in the humanitarian sector had approached NCell on a regular basis with requests to share call detail records prior to their partnership with Flowminder. This conveyed the message that in the public eye the company ought to act and it also created an atmosphere of competition among the different organizations to access the data.

Table 4: Characterization of the Flowminder disaster response case as a Social Issue platform

Dimensions	Characterization
Primary interest	Designed around a social problem (earthquake); both parties' interest was helping address the earthquake aftermath
Contextual factors	Pressure for corporate social responsibility. NCell was approached by many different actors in the humanitarian data ecosystem with requests to share their data. A network effect was created by the pressure from the many stakeholders.
Sources of CSSP problem definition	External problem definition – helping understand where population is moving so that to enable more efficient disaster relief efforts
Orientation	Integrative – both parties addressed the social issue plus businesses gained positive image, access to data expertise, new insights, collaboration opportunities
Dependencies	Remained autonomous
Timeframes	Finite – the data was shared after the earthquake on a one time basis
Conceptualization of sectors	Business contributed to addressing a social issue – crossing of boundary between private and public
Prospective sense-making themes	The present social issue

Reflecting on the role of government in this case we see that government is not an active participant in the collaboration per se, instead it was driven by multiple other actors such as NGOs that jointly put pressure on businesses to share data to create public value. However, government is one of the key beneficiaries of the outcomes of this partnership as it can use the data insights to make more informed decisions about the distribution of aid to the affected population. Furthermore, governments can play a role to stimulate data sharing by companies for social projects by putting in place relevant policies and incentives for companies.

5.3 Societal sector platform for voluntary information sharing – example of New York State food traceability case

The information sharing in the Food Traceability case could be seen as a Societal Sector platform for voluntary information sharing. The framework indicates that collaborations designed as Societal Sector platforms are formed around an externally defined social problem, but also as a result of self-interest drivers. So this collaboration is a mix of the previous two in this aspect. Thus, pressure for adaptation to complexity and turbulence is seen as an influential contextual factor in this type of partnerships and the public issue could be considered emergent or constructed over time This platform is seen as integrative in orientation, but attempts to explore and learn about the issue; it could be seen as a social investment. Regarding dependency, the organizations are to a certain extent integrated, blended at margins, but distinct at core. Therefore, organizations are not distinct sectorally. In general, these partnerships are long term and open ended and their prospective sense-making themes are centered around the future and the potential for innovation. The table below describes the characteristics of the NYS Food Traceability case along the dimensions of the framework of cross-sector social partnership.

In the NYS food traceability case, the primary interest could be seen as voluntary and as a combination of potential economic development, self-interest, and principles and recommendations from government and other actors, in terms of framing the act of buying local as something good for individuals and society. In terms of contextual factors, there is formal and informal pressure for public and private organizations to buy more local products. This is mainly because there is an expectation that buying more local products could foster local economic development. For some of the actors this is also related to food safety and improvements in the environment due to the need for less transportation from faraway places.

The sources of cross-sectoral social partnership problem definition could be seen as emergent, since there was some initial external definition by existing interest groups (government agencies and nonprofit organizations), but this initial definition is being reinterpreted by different actors (farmers, institutions, other organizations) according to their own views. In fact, it is not always easy to define what is local and what is not and this could be a challenge when trying to convince actors to participate. Each of the individual and organizational actors not only had their own definition of local, but also their own opinions about benefits to be obtained and challenges to be faced.

The main orientation was to explore the technical and social feasibility of a traceability system for small local farmers to sell to institutional buyers such as universities, correctional facilities, and other. Without such a system, it would be very challenging to the different authors to certify if a specific product could be considered local. In terms of dependencies, the organizations involved in general retain their autonomy, but it might be some blending particularly between institutions and intermediaries, because they work together in order to buy local products from small farms, which need to share information with only one of

these two actors. Therefore, in general terms, the organizational boundaries are fixed, with the potential exception, as explained before, of the institutional buyer and the intermediaries that many times act in unison.

Table 5: Characterization of the New York State food traceability case as a Societal Sector platform

Dimensions	Characterization
Primary interest	Voluntary, primarily based on potential economic development, self-interest, and principles and recommendations from government and other actors (buy local is good)
Contextual factors	Pressure to buy more local products for public and private companies because of local economic development concerns
Sources of CSSP problem definition	Initial external definition by existing interest groups, but reinterpreted by the different actors according to their own view – could be seen as emergent
Orientation	The main orientation was to explore the technical and social feasibility of a traceability system for small local farmers to sell to institutional buyers such as universities, correctional facilities, and other
Dependencies	In general retain autonomy, but it might be some blending particularly between institutions and intermediaries, because they work together in order to buy local products from small farms, which need to share information with only one of them
Timeframes	The data has to be shared in every transaction and this is frequently (at least every time the institutional buyer wants more products); long term nature
Conceptualization of sectors	The organizational boundaries are in general fixed, with the potential exception of the institutional buyer and the intermediaries that many times act in unison
Prospective sense-making themes	The present and potential future in terms of local economic development

In terms of timeframe, the data has to be shared in every transaction and this is frequently, since it should happen at least every time the institutional buyer wants more products from the local farms. In addition, the collaboration is expected to have a long-term nature, since once implemented, the system could be used for many years. Consistently, regarding the prospective sense-making themes, there is a focus on the present and the

potential future in terms of local economic development and better ways to foster more information sharing between institutional buyers and local farmers. It is expected that this partnership would have important benefits for the actors involved and the society as a whole in the near future.

Overall, some of the specific mechanisms to promote collaboration were the following: (1) government promotion of "buy local products"; (2) potential increase of small farmers' income (due to more volume in their sales); (3) sharing data from small farms could help farmers to sell more products, institutional buyers to show more social responsibility, and government to promote local economic development; and (4) in terms of more general public good, it is also expected that buying local contributes to a more healthy population (food safety) and less pollution due to a decreased need for transportation from faraway places.

6   Discussion

Our analysis showed that collaborations to share business data to create public value can be conceptualized as three different platforms with distinct drivers and mechanisms to achieve information sharing. Depending on the type of platform the role of government differs as well.

Governments are problem owner and all these partnerships address some societal problems. By distinguishing these platforms, it is easier for governments to differentiate among information sharing initiatives and define their level of involvement. Our cases demonstrate that depending on the type of collaborations government can enter in different roles. In the Resource-dependence type of collaboration where the main driver is the reciprocity and self-interest, as we observed in the FloraHolland case, governments need to enter into a much more active role in a) working closely with the businesses to search and identify win-win scenarios; and b) driving the collaborative arrangements with multiple agencies nationally or internationally to secure the conditions to further implement the win-win scenarios in practice. In the Social Issue platform, where the social problem drives the collaboration, as was in the disaster response case, the governments were more in the role of the beneficiaries of the collaboration between business and non-profit. However, their task becomes more prominent with regard to harvesting the benefits of this information sharing collaboration, in this case the data insights produced by the data analysis to distribute relief aid more efficiently. Not surprisingly, in the Societal Sector case the role of government was a mix of the previous two cases. Government actively promotes the idea of buying local as a good thing to do in the state. They also pressure public institutions to buy more local products and in the case of small farmers, food traceability seems to be part of the potential solution. So, to a certain extent, government and some nonprofit organizations also attempt to convince local farms and institutions that there are some specific benefits for each of them. This is similar to the Resource-dependence type of collaboration. However, similar to the Social Issue platform, in terms of

potential economic development, government could be seen mainly as a beneficiary of the collaboration between institutional buyers and local farms.

The three types of collaboration also have implications for how government can play a role in providing incentives for voluntary information sharing to create public value. In the case of Resource-dependency the key way to create incentives was to search for the win-wins. In the Social Issue type of platform, the way for governments to create incentives is not as clear cut, as there are many different parties involved. In this case companies are continuously pressured to act responsibly, this pressure comes from society, interest organizations, and NGOs. This collective pressure from multiple actors, aligned with appropriate government policies can create the incentives for this type of information sharing. Governments can choose to design corporate social responsibility (CSR) policies in a certain way to stimulate business data sharing. Albareda, Lozano, & Ysa (2007) for instance proposed a typology of governmental action on CSR in Europe which showcases different approaches that governments can take in this respect. Finally, in the Societal Sector case, government can play both roles. They can provide incentives to the actors involved or at least help them identify the benefits they could individually obtain. But, they can also frame the issue as something important for the society as a whole and try to create pressure for private companies and other actors to share the necessary information.

7   Conclusions

Our research question was: *How is voluntary information sharing to create public value achieved and what are the drivers and mechanisms to achieve that*. Our analysis based on three cases and through the conceptual lens of the framework of cross-sector social partnership theory suggests that the three types of platforms that are observed for social partnerships (Resource-dependence platform, Social Issue platform, and Societal Sector platform) can be used to explain information sharing arrangements as well. We observe that the drivers to share data are similar to drivers that come into play in "traditional" cross sector social partnerships. Yet we identified specific mechanisms that are important for the information sharing to be achieved – these mechanisms differ across the three platforms. We also discussed which different roles governments can play depending on the type of platform. With this work we extend theory on cross sector social partnerships to information sharing collaborations to create public value. Our contribution to practice is that understanding the different drivers and mechanisms to share business data for public value can help governments and other organizations navigate partnerships better.

We selected cases which would extend the Selsky & Parker framework to information sharing domain (theoretical sampling). By doing that we demonstrated that in information sharing context too we can find these platforms. A limitation however is that there may be more platforms not covered by the original framework. Future research can investigate that. Our study was exploratory

and provides initial insights into drivers and mechanisms of private sector information sharing for public value. Future research can focus on the different types of public value and further detail our framework by distinguishing among these types.

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