



DELIVERABLE

D3.9 Policy Network Canvas Report

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Every effort has been made to ensure that all statements and information contained herein are accurate, however the PoliVisu Project Partners accept no liability for any error or omission in the same.

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Executive Summary

The description of deliverable 3.9 in the Grant Agreement reads as follows:

Using different research techniques (e.g. desk, interviews, focus groups), project partners will “paint” a Policy Network Canvas for each pilot city, showing on it the most influential actors, both in public and private sectors, affecting big data policymaking, relationships between these actors and points where bottlenecks impeding policy reforms tend to occur most frequently.

In order to get a view on the decision-making process it is important to have an idea of the organizational structures and people that are part of this process. Policies are made through the collaboration of different parties, such as politicians, administrative operators or external partners. We will call the people that are part of this process “actors”. Getting a view on who the actors are and what their functions imply, or how they are part of the policy-making process allows us to get a better understanding of the complexity of the (big data) policy-making process.

Through participant observation and interviews, the Policy Network Canvas and a process model of the pilots was constructed, showing the most influential actors, relationships between these actors and points where bottlenecks impeding policy reforms might occur. In the first part of this deliverable, a Policy Network Canvas is constructed for each pilot, showing the different actors involved in the respective city. The type of interaction (data or policy oriented) between the different actors is visualized as well. In the second part a general process model is constructed that displays a summarized overview of the policy-making process for the relevant pilot.

The main result is that, even though the pilot cities are very different in the issues they want to tackle and the position that the actors have within the organization, clear similarities can be identified. Every pilot starts from an urban issue that policy makers (both from within the municipality as from the broader region) are confronted with. To obtain the data necessary to solve the urban issue an interaction occurs with relevant operative members of the public administration. These actors interact with an “office for data and information”, which in turn coordinates interaction with external partners, technical expertise and the communication and visualization of the data.

We also see that for every pilot city a large number of actors are involved, even if the pilot concerns only one topic. The large number of policy decision makers (politicians) illustrates how difficult it typically can be to make policy changes in a local government. The vastness of operative members of the public administration involved makes the coordination difficult and the number of external partners with who data is exchanged or who are consulted during the policy making process results in the total process being complex.

More specific conclusions drawn from the models are that in Issy-les-Moulineaux regional policy makers have a large influence on the policy making process, resulting in difficulties to change policies. In Ghent the office for data and information is very well connected to all relevant actors, making them ideally located to have an influence on the policy making process but might result in a bottleneck. Finally, the core actor for the Pilsen pilot is a city-owned company with few connections to the policy makers but a lot of connections with external partners. This makes it ideally placed for collecting data, but also results in difficulties to influence the policy making process.

Since a large number of actors is involved in policy making processes for local government it will never be straightforward. However, from the pilot cases it became visible that to efficiently have a data-supported policy-making process it is important for the pilot coordinator to have connections with actors from all levels (policy makers, operative members, the office for data and information).

This deliverable creates a clear and visual representation of the current as-is situation of the actors and their relationships within the different pilot cities. These insights are valuable when discussing the successes and the pitfalls of the pilot activities, as described in D3.8. Moreover, this deliverable is relevant when analysing and describing the conducted activities in work package 7; as well during the evaluation of these activities, also something that will be/has been done in work package 7.

1. Introduction

Deliverable 3.9 aims to collect information about the most influential actors, the processes and the different relationships between the actors within the different PoliVisu pilot cities. There is no doubt that the relationships between different partners within a pilot city has a big effect on the (big) data policy making process. Thus, the goal of this deliverable is to visualise the different actors and their relationships, in order to fully understand the (policy) context in which a pilot city is currently deploying its activities (as described in the different deliverables of work package 7).

For visualizing this network of actors and relationships, we initially used a Social Network Analysis (SNA). The SNA proved to be a useful tool for visualizing the different networks of the pilots and gave interesting insights on possible bottlenecks within a city's network. However, a SNA was not sufficient to describe the policy-making process in a pilot city, so an additional model was created for each pilot city.

This deliverable is divided in three parts. The used methodology, the actors and the process.

The used methodology describes in more detail the conducted Social Network Analysis and how we managed to gather the necessary information from the pilot cities. This was mainly done by interviewing the different stakeholders within a pilot city's context.

After a brief description of the used methodology, we start analysing the different actors within each pilot city. For each pilot two visual models have been created. The first visualization, actors network, describes the different actors and their connection to each other; in this visualization actors are described through the role (or the roles) they play: civil servant, expert, holder of special interest in the project or politician. The second visualization, interactions network, aiming at capturing the bottlenecks and analysing the network more in depth, focuses on the nature of the connections among actors so highlighting the data related as well as the decision related prevalent interactions.

The third part of this deliverable describes and maps the policy making process of each pilot city. The developed process maps, for each pilot, highlight different levels of the public administration and the external parties they interact with during the policy-making process. By using these process maps, we can easily identify a pilot's place within the policy making model (D3.5); their construction allowed the early recognition of pilot's specific pitfalls, which will be described more in detail in D3.8 "Experiment driven policy making: pitfalls and suggestions for Public Administrations".

We end this deliverable with a series of general conclusions about the different analysis on the pilot cities and also clarify the differences and similarities between the pilots as discovered during the analytical work.

2. Used methodology

The goal of the deliverable is to “paint” a Policy Network Canvas for each pilot city, showing the most influential actors, both in public and private sectors, affecting big data policymaking. Next to this, relationships between these actors and points where bottlenecks impeding policy reforms tend to occur most frequently, should be shown on the Policy Network Canvas. In order to do this, for every pilot city, two models were constructed. The first one is a Social Network Analysis (SNA), the second one shows the policy-making process.

A Social Network Analysis is based on the theory of networks and graph theory and aims to investigate and analyse the (social) structure of a network. It shows the connections (called “links”, “ties” or “edges”) between different actors (called “nodes”) in the network. The nodes can represent the function of the actor (e.g. politician, expert, public administration, ...) while the links can indicate the type of link that exists between two actors (e.g. “delivers data”, “does complex analysis”, “imposes rules and regulations”, ...).

The visualisation of the policy-making process represents how the different levels of the public administration and external parties interact during the policy-making process. The Social Network Analysis framework been applied to all pilot cities and allowed us to identify the position of the core actor in the Polivisu Policy making model and to start identifying possible pitfalls along the process.

To obtain the information necessary to develop the analysis there was a close interaction (conducting face-to-face interviews and meetings) between Politecnico di Milano and the pilot cities.

2.1. PoliVisu original Pilots

In Issy-les-Moulineaux over a span of 2 weeks the organization IssyMedia was both actively and passively observed by Politecnico di Milano. Through participant observation, unstructured and semi-structured interviews with local relevant civil servants (operative sectors) a complete overview of the network of Issy-les-Moulineaux was constructed. The biggest effort was invested in the pilot of Issy-les-Moulineaux as this was the first pilot for which the Social Network Analysis was conducted.

A 2-day journey allowed the Social Network Analysis for the city of Ghent. Through participant observation and unstructured interviews with local relevant civil servants (operative sectors) the local network was constructed.

Experience built up while performing a Social Network Analysis for the first two pilots allowed the process to be shortened for Pilsen. Through an interview with local relevant civil servants and exchange through e-mail the network was constructed and visualized.

2.2. New Pilots

Through unstructured interviews with local relevant civil servants during the Grand Assembly in Ghent a Social Network Analysis was performed for the Flanders region and for the pilot of Mechelen. These two pilots became part of the PoliVisu project at a later stage. We do think important information can be seen by conducting a social network analysis of these two pilots. However, a map of the policy-making process was not constructed because the Flanders and Mechelen pilot are not as involved in the PoliVisu project as the other three pilots and the processes differ too much from the other three pilots.

3. Pilots policy making networks

To better understand the process of policy making it is necessary to identify the key actors. Therefore the first visualization developed implementing the Social Network Analysis is an “actor network”. In this visualization all the actors that are involved in the relevant PoliVisu pilot case are identified and their role in the network is indicated. These roles can be a civil servant, expert, actor with a special interest in the project, politician. Evidently one actor can have multiple roles. One important remark to be made is that these are actors that are solely involved in the PoliVisu pilot.

The visualized network shows which actors (persons or groups) interact with each other. While investigating and grouping the types of interactions that occur between actors 6 categories were constructed:

- *data exchange*, for instance within the municipality itself or with external partners;
- *data management, analysis, visualization*, as a specific group/organisation can be responsible for more technical or advanced data storage, analysis and visualization processes;
- *knowledge exchange*, which can also occur internally to the city or with external partners;
- *decision making, policy inputs*, typically an interaction between the political actors and the civil servants;
- *internal cooperation for policy making*, typically between civil servants;
- *disclosing data/communicating results*, usually towards the public, for instance through communication of data or results, public debate, participatory decision making

Combining the information from both network visualizations allows us to have a complete but comprehensive overview of the links and type of links between actors, and allows us to identify possible bottlenecks. It also allows us to identify the position of the pilot within the structure, providing us with insight in differences between the pilots.

All network follow the same structure. At the centre of the network we see the actors from the PoliVisu pilot that are active within the local government. On the top left the actors involved that are active in the broader region are displayed and, on the right, the external partners are visualized.

3.1. Issy-les-Moulineaux

The pilot case of Issy-les-Moulineaux is mostly related to mobility. As Issy-les-Moulineaux is close to Paris, it experiences car congestion across the whole Region, mainly because of its economic vitality and transit to and from Paris. Therefore Issy-les-Moulineaux wishes to communicate real-time traffic information to the citizen and develop a control dashboard to support operative sectors of the public administration with municipal services. The main goals of the Issy pilot are effective and clear communication with the people (in order to achieve a long-term effect of behavioural change in mobility habits) and to test out how data visualisations can support the different activities and decisions within the city.

Description of the network

All actors related to the municipality are displayed centrally in the visualization. The political actors involved in the PoliVisu pilot are the mayor and his deputies in charge of mobility and smart city, the general manager of IssyMedia (in charge of communication and innovation), the senior officials in charge of smart city and technical services. As you can see in the actors network the latter two have two roles. Next to a political role they are also civil servants. The other actors within the municipality are operative or administrative actors responsible for public spaces (mobility), smart city sector (ville numérique) and the city-owned company IssyMedia (the pilot and the core node in the network), also have double roles. While these actors are civil servants they are also experts in their specific fields.

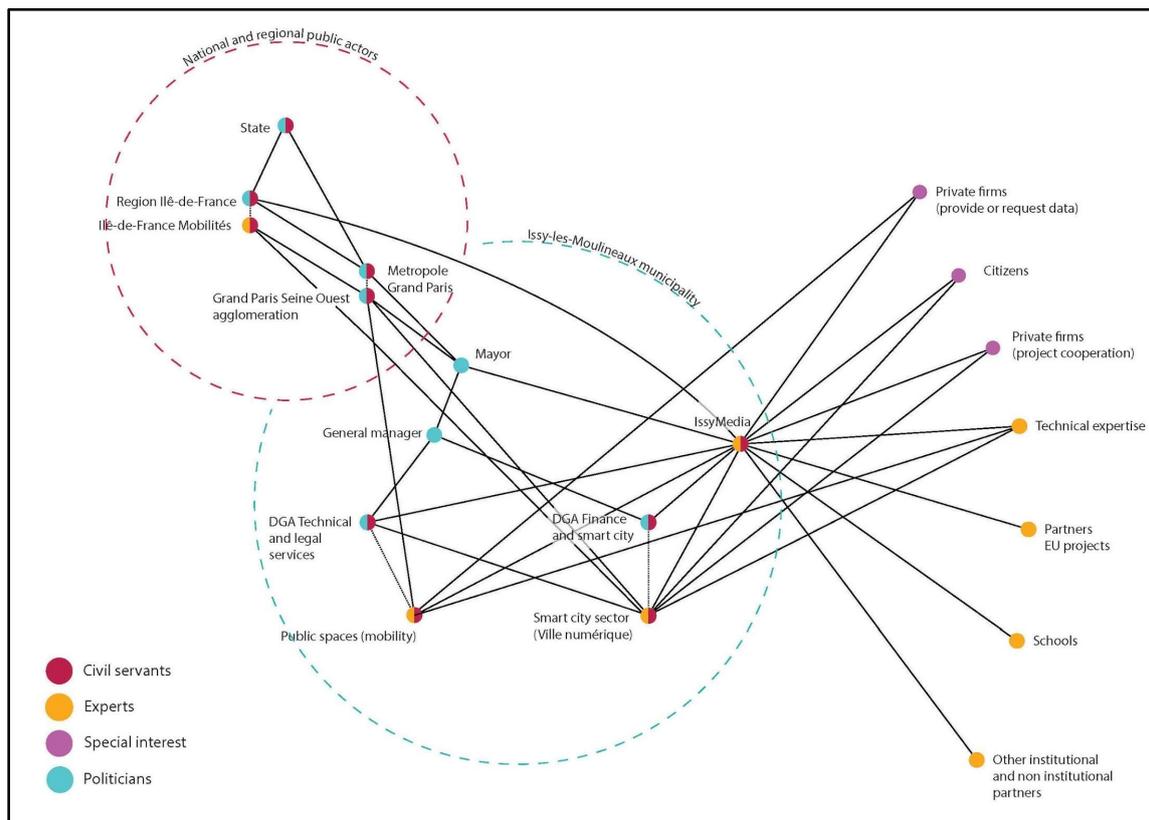


Figure 1: actors network of Issy-les-Moulineaux

At the top left of the network actors that are active in regional and national governments are displayed. These include the State, the Paris Region¹, Metropole du Grand Paris, Grand Paris Seine Ouest urban community (which are all political actors and civil servants) and Ile-de-France Mobilités (which acts as a civil servant and expert).

Finally, at the right side, external partners are displayed. Some of these external partners are involved in the pilot because of special interest. These include private firms that provide or request data, the citizens and private firms that are involved in projects. Other external partners are involved because of their expertise. This can include technical expertise, partners of EU projects, schools and more general other institutional and non-institutional partners.

Analysis

IssyMedia (on the right in the central circle) is the core node in this network and, as a consequence, has most of the links to other actors in the network. 7 out of 13 links that IssyMedia has are with external partners. There is one link with the broader region, Région Ile-de-France, and the other 5 links are with partners within the municipality. The connections within the municipality and with external partners seem plenty.

For this bottleneck, there are different (possible) reasons to be considered:

- The complexity of the governance structure in which Issy-les-Moulineaux is embedded. Issy is a municipality enclosed in the Region of Ile-de-France, in charge of the public transport and the local

¹ Ile-de-France in French

SUMP. This makes the context for the Issy civil servants more complex since they are under the policy influence of supra-local institutions.

- External communication between the different levels and actors is a potential problem, for example when there is a data exchange;
- Internal communication: some sectors/divisions within the municipality are more prone to (data-related) innovation than others.

From the network we can also determine that the second most important actor for the PoliVisu pilot is the Smart city sector (Ville Numérique). This actor has 8 links, of which 3 with external partners, 3 within the municipality and 2 with regional or national public actors.

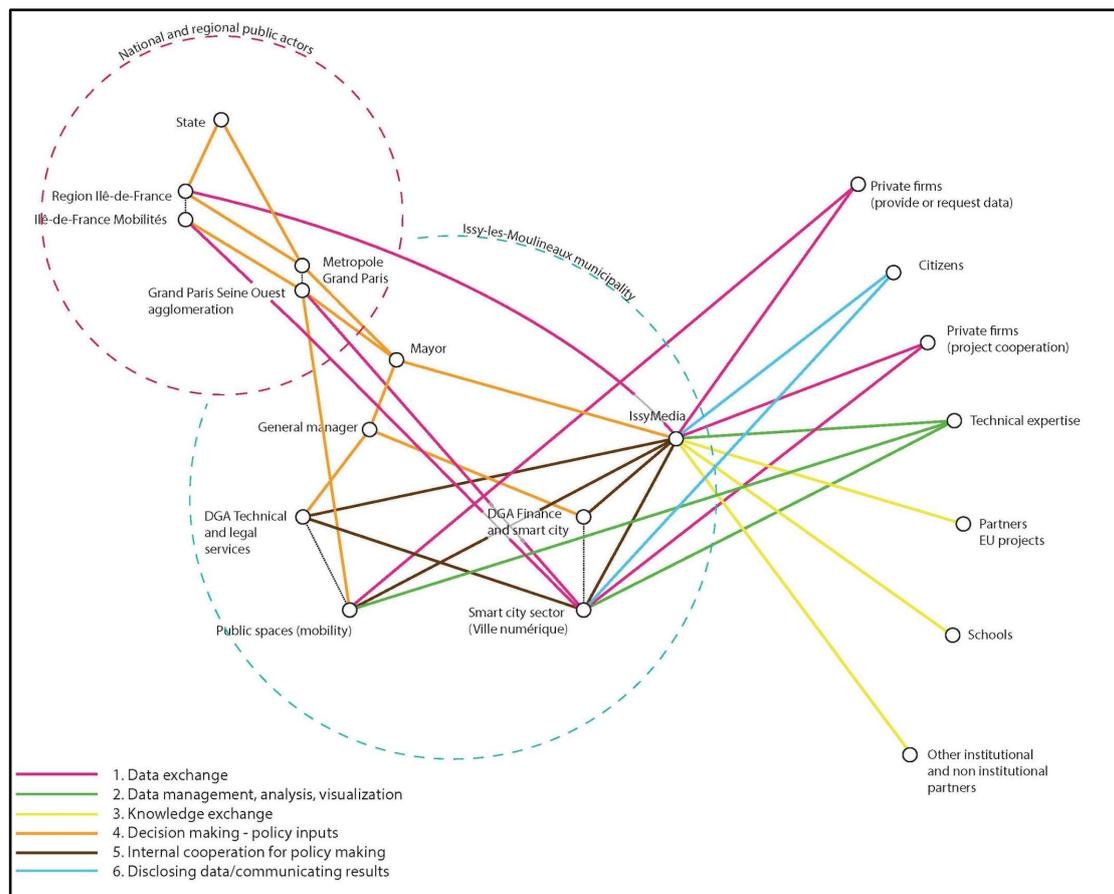


Figure 2: interactions network of Issy-les-Moulineaux

Not only the actors and the number of links they have are important for analysis, the nature of the interactions between different actors also provides valuable information. Six different types of interactions are identified in the network, these interactions can be data-related (data exchange and data management, analysis visualization), policy oriented (knowledge exchange, policy input, internal cooperation for policy making) or both (transparency).

We start with the data-related interactions. In the network we can clearly see that data-exchange connections exist everywhere. Data exchange takes place with regional and national public actors and with external partners. We notice that within the municipality, the data- and knowledge-exchange relation is rather absent (which, of course, does not mean that there is no data or knowledge exchange within the municipality). One possible explanation for this might be that the actors maintain and analyse the data themselves and

communicate the results relevant for policy making. This hypothesis is supported by the number of connections that concern “decision making - policy inputs” and “internal cooperation for policy making”.

When looking at policy-oriented interactions we clearly see how top-down decisions take place, from the regional and national public actors to the municipality and from the mayor and general manager to the civil servants. Between the different civil servants internal cooperation for policy making takes place. No notable policy-oriented interactions occur with external parties.

Finally, there is communication directed towards citizens with as goal more transparency. From the network it is unclear whether this communication is data oriented, policy oriented, or both. These connections give an indication of the relevance and the special attentions Issy-les-Moulineaux pays to transparency towards citizens.

We note a clear presence of knowledge exchange with the external partners (for example schools, or other EU projects). This is a positive outcome of the PoliVisu project, as productive and lasting relations are built that are not directly related to data or policy exchange, but about building a smart city community.

3.2. Ghent

The PoliVisu pilot of Ghent aims to identify the hidden population of students. Every year a large number of students reside in Ghent, but it is unknown where they live. Their presence has an influence on the housing market, mobility, economy and more. Identifying where the students live can aid the policy making process.

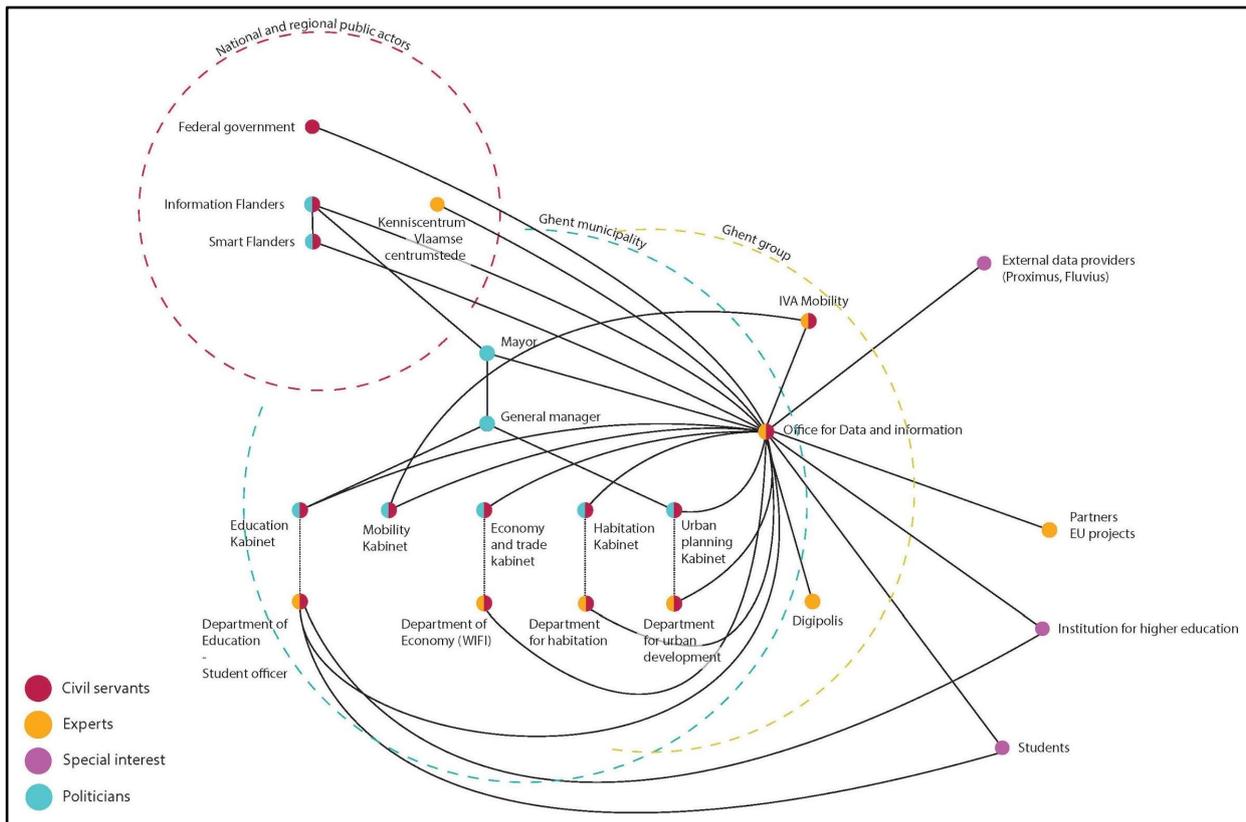


Figure 3: actors network of Ghent

Description of the network

The network is similar to the one identified for Issy-les-Moulineaux, with one important difference. We again see in the centre all actors related to the municipality, in the top left the regional public actors and on the right external partners. There is however a group between the municipality and the external partners. Two

actors, relevant for the PoliVisu pilot, are by definition external partners, companies, that are very closely related to and owned by the municipality.

These two actors, IVA mobility and Digipolis, are agencies or legal entities with a public responsibility. IVA (intern verzelfstandigd agentschap) mobility is the organization that is responsible for everything mobility related within the city and it has political power as well. The company acts in the role of expert as well as of civil servants. Digipolis is the digital (IT) partner of the city and solely has the role of expert.

The regional public actors relevant for the PoliVisu pilot case are scarce. The region Flanders has some influence through Information Flanders and Smart Flanders, but the influence is limited. The actor is defined as having a political and civil servant role. For the region of Flanders there is also a knowledge centre that unites the bigger cities of Flanders, “Kenniscentrum Vlaamse Centrumsteden”. This actor is seen as an expert since it is involved in knowledge and information exchange is exchanged. Finally, there is also a link with the Federal government as they provide data that is crucial to identify student residencies.

Within the city, the political complexity of the subject becomes apparent. From the political side the mayor, general manager and several “kabinetten” (cabinets or deputy mayor offices), namely Education, Mobility, Economy and Trade, Habitation and Urban planning, are involved. A cabinet has a political role because it exists out of a team that advises the vice mayor, and they are the link between the vice mayor and the city administration. The city administration relevant for the pilot consists of several departments (Department of Education, Department of Economy, Department of Habitation, Department for Urban Development and the Office for Data and Information). These departments and offices also have a double role, they are civil servants in the first place, but also experts in their relevant fields. A student officer is employed by the department of Education. The student officer is a civil servant with a direct link to the students.

Lastly, the external partners that are involved in the PoliVisu pilot that have a special interest are external data providers such as a telecom provider and energy provider, institutions for higher education and the students. One expert link exists with partner for the EU projects (such as PoliVisu).

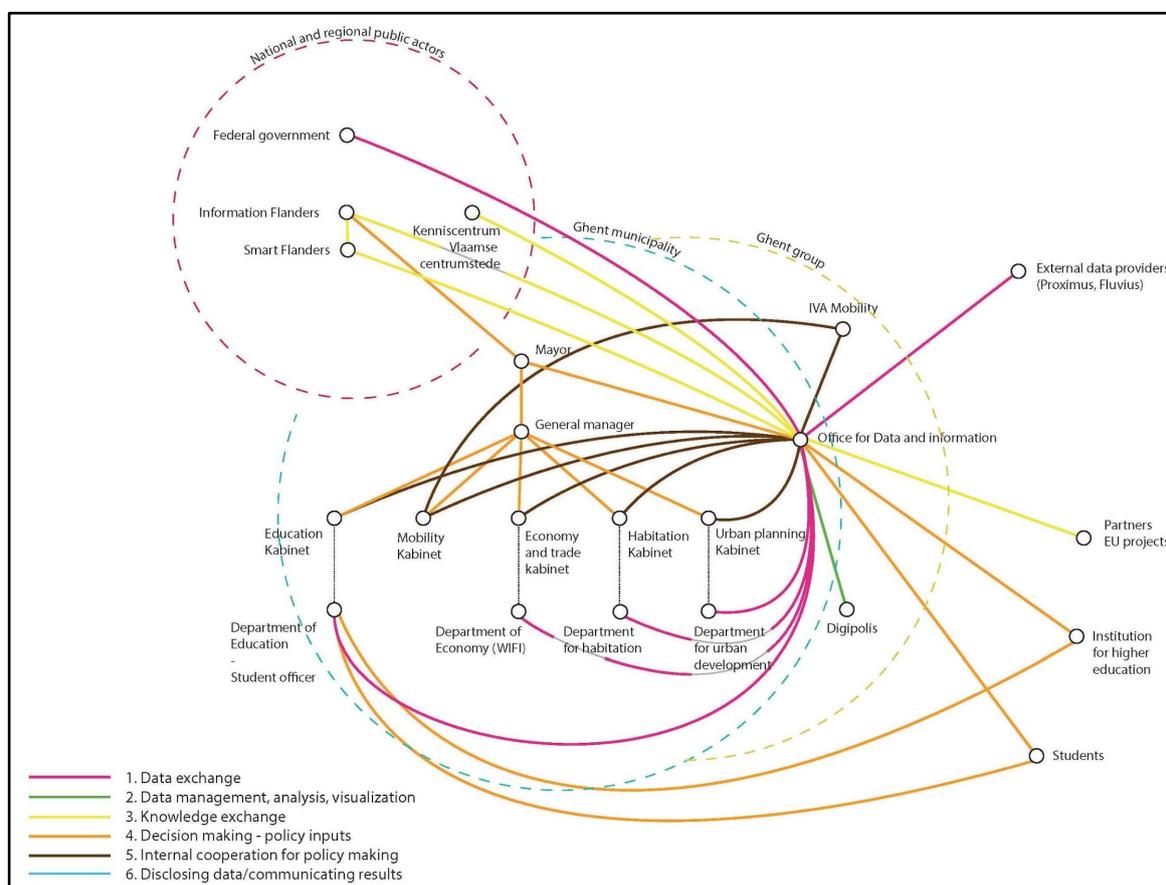


Figure 4: interactions network of Ghent

Analysis

From the network it is clear that the Office for Data and Information is the core actor for the PoliVisu pilot. With 20 connections it has the most direct links to other actors. Out of these 20 connections, 4 are with external partners, 2 with external partners from the Ghent group, 10 links within the city and 4 links to the broader region.

Since the Office for Data and Information is connected to 20 actors, this might be a possible bottleneck, as a lot of information has to pass through this actor. On the other hand, it allows the actor a lot of freedom and autonomy to ask for data and information, discuss policies and maintain control over the pilot during the project.

Even though the title of the core actor for the PoliVisu pilot (Office for Data and Information) suggests that the main focus will be on data, the network that displays the type of connections between actors indicates otherwise. The majority of the connections are policy oriented. We see policy-related interactions with the regional public actors, within the city and with external partners. Policy-related interactions can be observed with citizens, showing the importance for Ghent of including citizens in the policy-making process.

Data-related interactions can be observed within the city between the civil servants, with the broader region and with external partners. The exchange of data is bidirectional, every actor owning data can share it with other actors. Within the city not data, but policy input is exchanged between the Office of Data and Information and political actors. Digipolis, the digital partner of the city, is responsible for data storage and data access, providing tools for data collection, data-analysis and data visualization. management, analysis and visualization of more complex data. The responsibility for data actualisation, data-analysis and visualisation is shared by civil servants in the departments and in the Office of Data and Information management. This translation happens in the interaction between the actors performing analysis and visualization (departments and office of data and information) and the actors performing policy making and decision-making activities (cabinets and policy preparation in departments).

3.3. Pilsen

Like the pilot of Issy-les-Moulineaux the pilot of Pilsen is mainly focussed on mobility. The layout of the city causes several congestion challenges and problems. To be able to monitor and predict the impact of changes, such as (sometimes necessary) roadworks, the traffic model that was developed for the city will be improved during the project. Next to improving the model, traffic sensor data, which is open data, is used to identify and visualize traffic volumes and their changes over time.

Description of the network

The network is developed in the same way as the other ones, with the city at the centre, in the top left regional public actors, on the right external partners. As for Ghent, there are also city-owned companies active in Pilsen, however, in Pilsen there are more city-owned companies.

We see that the regional public actor, the Pilsen region, is both a political actor and a civil servant. The other political actors operate within the Pilsen municipality. These are the mayor, the city council ZMP (City Assembly), the city districts, the board of counsellors RMP (Pilsen City Council), the transport commission, the smart city commission and the municipal secretary. The other actors within the Pilsen municipality play the double role of civil servants and experts. These are the department of security, crime prevention and crime management, the office for services to the population, the smart city department, the technical office and the department of transport.

The city-owned companies that are involved in the PoliVisu pilot in Pilsen are either experts (UKRmP Urban Planning Institute of Pilsen, SVSmP management and maintenance of public properties of the city of Pilsen and SITmP Information technology administration of the city of Pilsen) or have a special interest (PMDP Pilsen transport company, Teplarna central heating company and Vodarna water company). The external partners

involved in the pilot are the partners of EU projects, RSD (the state-owned traffic company), CEZ (electricity company), O2 (telecommunication company) and INNOGY (gas company). All external partners are involved in the pilot because of special interest except for the partners of EU projects, involved because of their expertise.

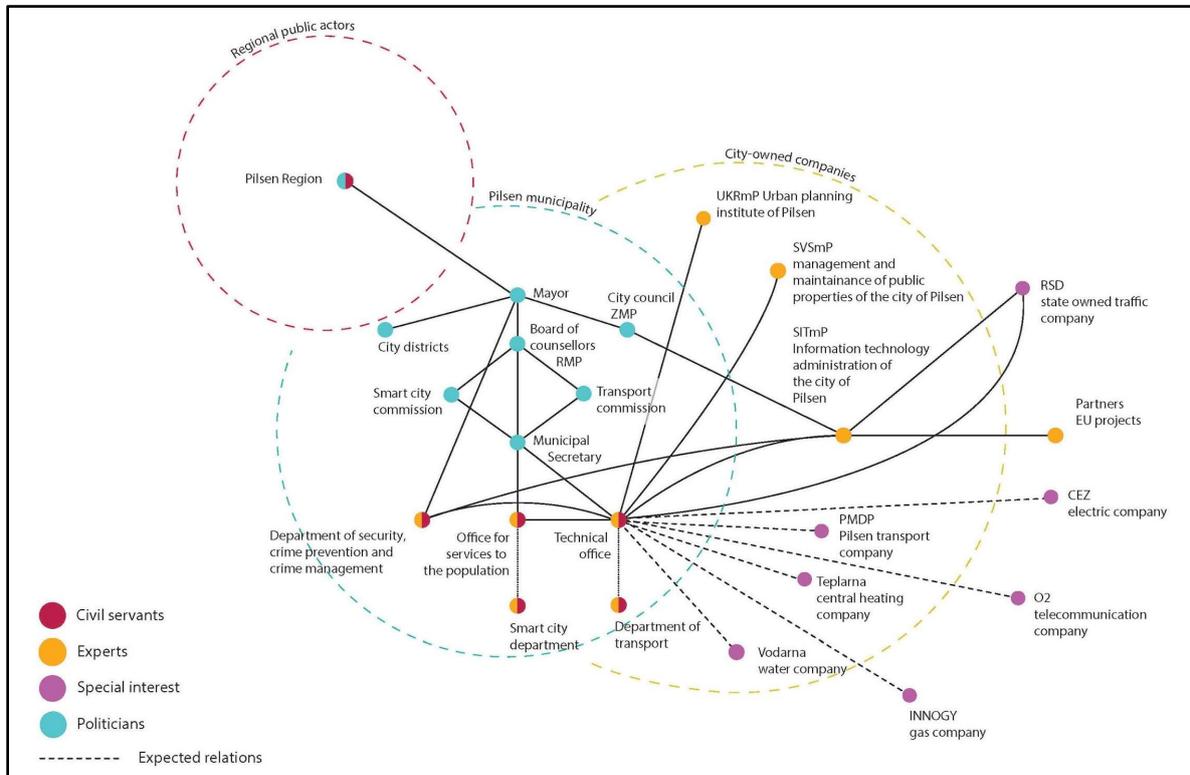


Figure 5: actors network of Pilsen

Analysis

The core actor of the network is SITmP, which is a city owned company. They only have 5 connections with other actors, 2 with external partners and 3 with the city. Like Issy-les-Moulineaux and Ghent the core actor for the PoliVisu pilot in Pilsen does not have a direct connection with the regional public actors.

The most important finding from the network is that the SITmP, the core actor for the PoliVisu pilot in Pilsen, has only a few connections. This suggests that it is very challenging for them to influence the policy-making process of the city.

Furthermore, the dotted lines indicate expected relations, relations that are not yet established but are intended to be established in the future. Here we see that the technical office is the main hub with the most connections with other actors and is probably the most ideally placed to ignite and coordinate policy decisions.

In figure 6, we can analyse the interactions that occur between actors. We see that the main interactions are data exchange and policy inputs. From the regional public actors and the political actors from the Pilsen municipality policy decisions are communicated towards the civil servants, and city-owned companies. The city-owned companies and external partners exchange data with each other and with the civil servants of the Pilsen municipality. There is some internal cooperation for policy making but it is limited when compared to network of Issy-les-Moulineaux and of Ghent.

One important remark needs to be made. This does not imply that there is less internal cooperation for policy making in the city of Pilsen than in other cities, this only relates to the specific case of the PoliVisu pilots. Since

the pilots in Issy-les-Moulineaux and Ghent are coordinated from an actor that operates within the municipality it makes sense that internal cooperation for policy making is more relevant for them than for the city of Pilsen, where the pilot is coordinated by a city-owned company.

In the network there is no visible interaction displayed with the public, with the citizens of Pilsen.

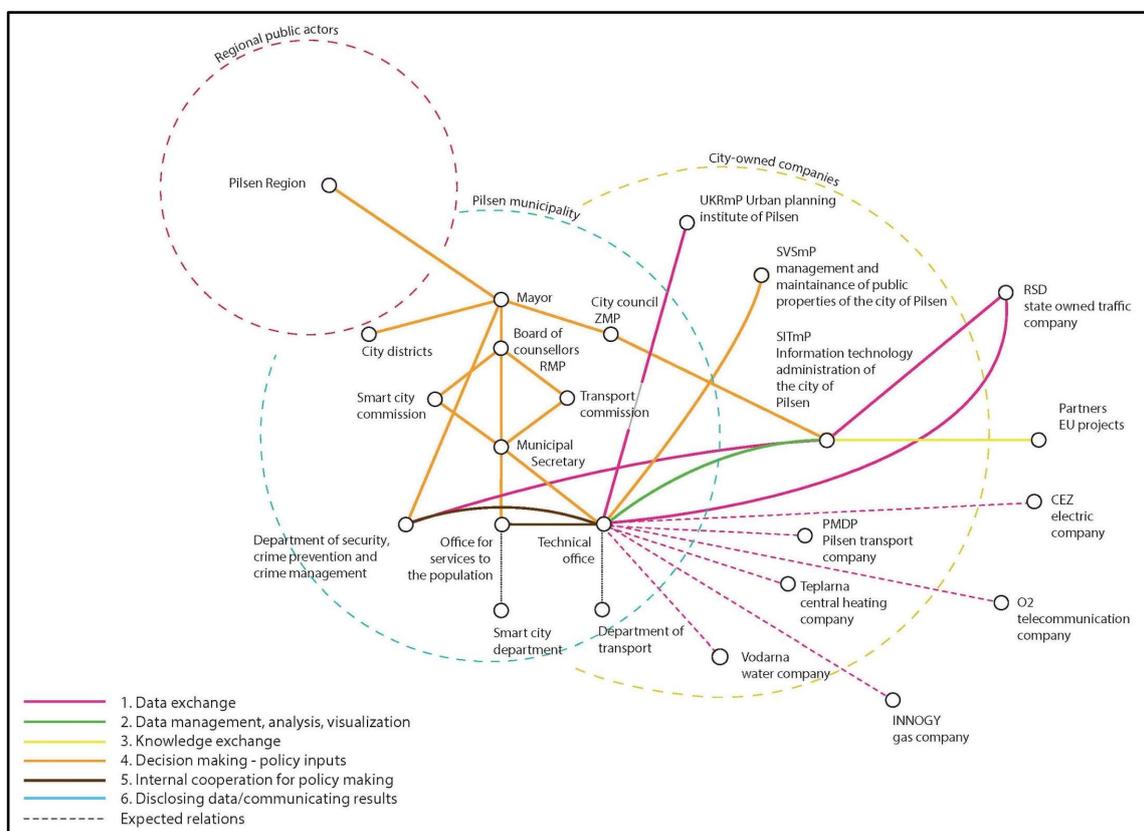


Figure 6: interactions network of Pilsen

3.4. Mechelen

The Mechelen pilot consists of two main objectives. The first objective is about the traffic modelling for the city. Mechelen, together with the police zone Mechelen-Willebroek, has integrated an existing traffic model, but wants to enrich this model with data from ANPR cameras, during the pilot. The second objective deals with the recently introduced ‘schoolstreets’. In the pilot, we want to measure and analyze the traffic (in the closed street, as well as in the neighbouring streets) before and after the introduction of the schoolstreets.

Description of the network

There is a direct link with the regional public actor that has an expert role (Informatie Vlaanderen). Informatie Vlaanderen then has a direct link with the Flemish government, which consists both of politicians and civil servants. The city of Mechelen then has 2 connections within the city, with the mobility department and the data management department of Mechelen. Both departments consist of civil servants that are experts in their respective fields. For both projects (traffic model and schoolstreet) there is a connection with partners of EU projects, which are considered because of their expertise. The schoolstreet project also has connections with 3 other external partners and citizens. Both the city of Mechelen and Informatie Vlaanderen have connections with local schools, because schools are of special interest for the project. Informatie Vlaanderen

has a connection with the partners from the Telraam project (which are experts) and with local communities (special interest).

The network shows how the Mechelen pilot and the Flanders pilot are interconnected. A strong link exists between the projects, indicating that the PoliVisu project stimulates cooperation between local governments from different levels.

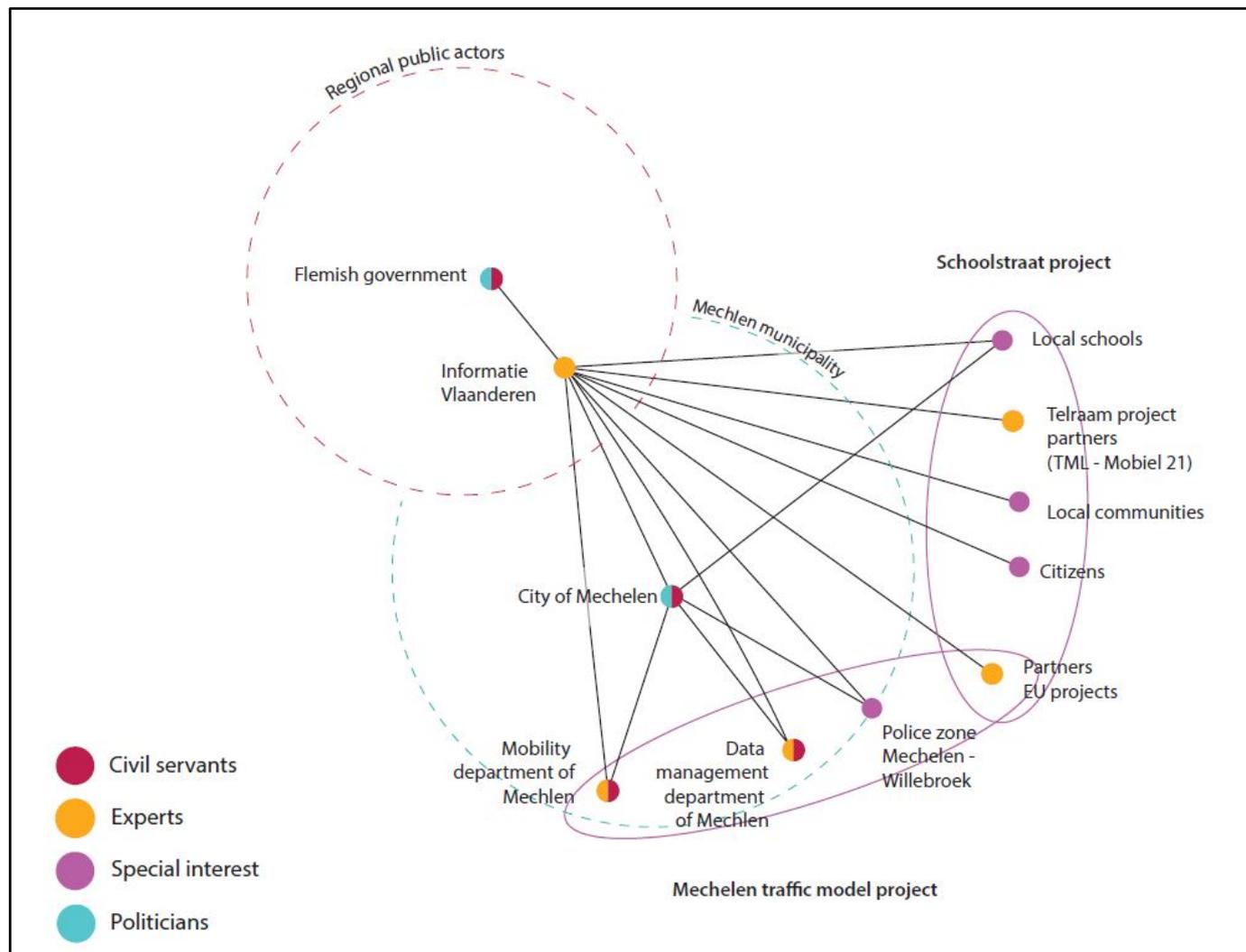


Figure 7: actors network of Mechelen

Analysis

When looking at the figure we immediately see the large number of connections from Informatie Vlaanderen. Informatie Vlaanderen is connected to the regional public actors, the Mechelen municipality and external partners. Informatie Vlaanderen is connected to all the actors involved in the pilots, clearly visualizing how this actor is the core node for the projects.

The network is less complex than the networks of the other three pilot cities. While a lot of connections are present, there are fewer actors involved. Moreover, there are merely two political actors represented in the network. This can indicate that the projects are more operative and less policy process-oriented than the other three pilots.

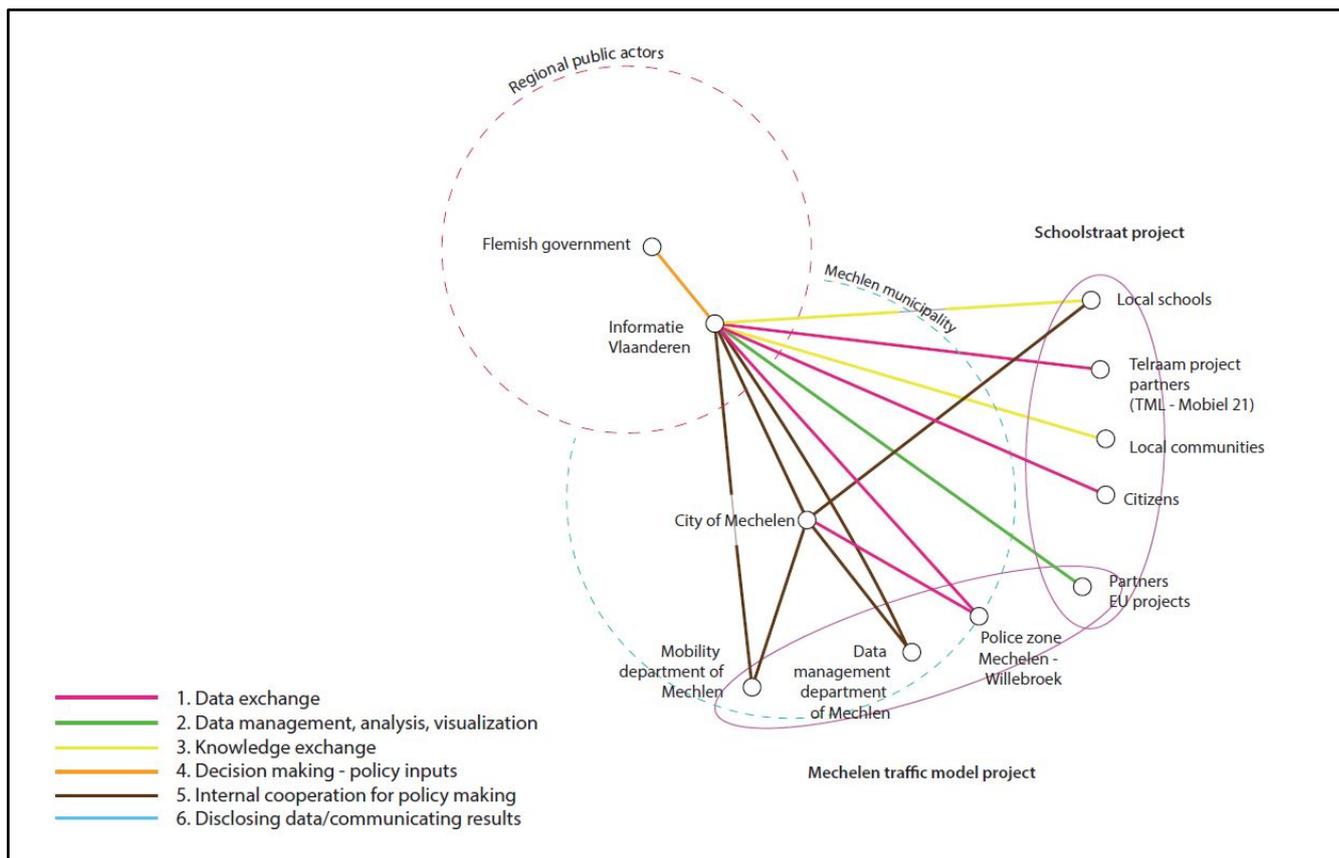


Figure 8: interactions network of Mechelen

3.5. Flanders

The Flanders pilot concerns the traffic accident map, a tool that visualizes the traffic accident data, which is obtained from the federal police. Next to visualizing this data on a map (by using heatmaps, filters, etc.), storytelling is also a big part of the pilot.

Description of the network

Of all the different pilot cases, Flanders has the fewest actors and interactions involved in their pilot. The core actor is Informatie Vlaanderen, with the role of civil servant, who is the coordinator of the Flanders pilot. We clearly see 4 different actors involved in the pilot case. There are 2 actors who have a special interest (federal and local police) and 2 actors who can be described as experts, being the partners in the EU project(s) and VIAS, the Belgian traffic safety institute.

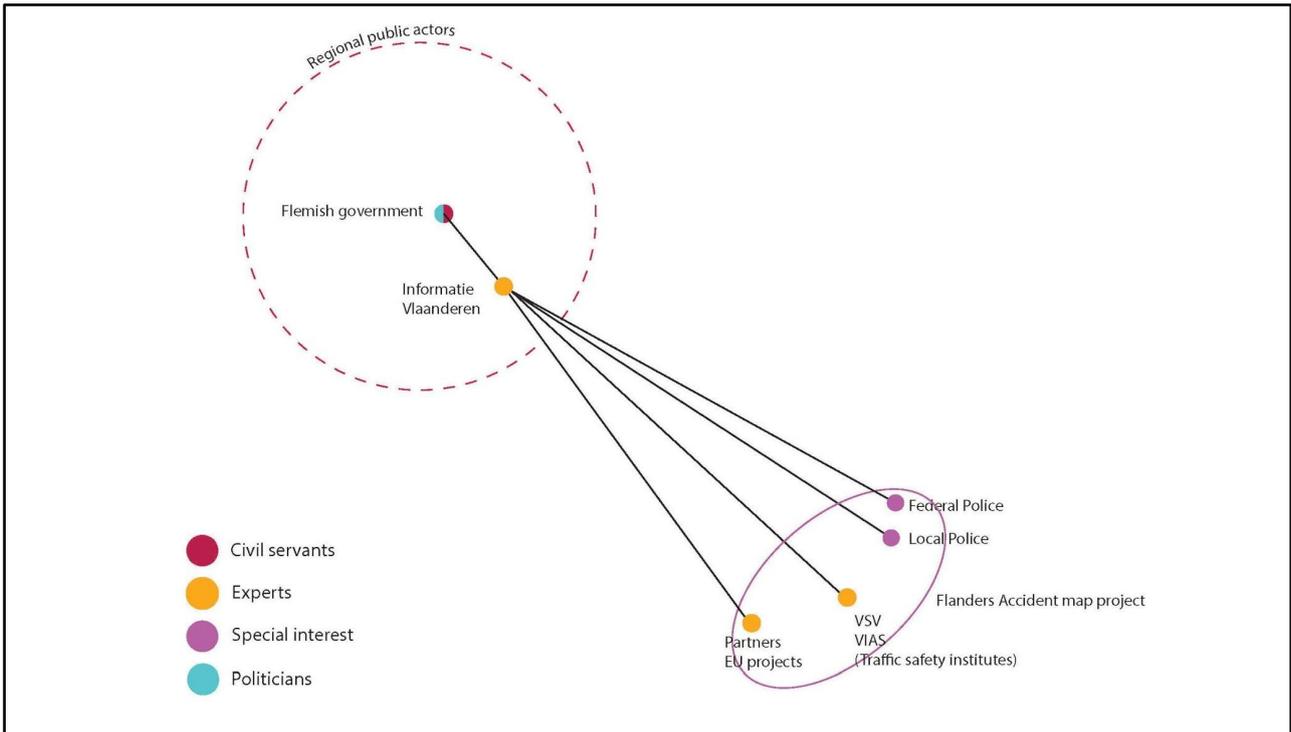


Figure 9: actors network of the Flemish region

Analysis

The network consists of merely a few actors. Only one political actor is involved. This can indicate that the projects are more operative and less policy process-oriented than the other pilots.

This is also represented in the network that shows the type of connections between the actors. For the Flanders Accident map project, 4 out of the 5 connections are data-oriented (data exchange or data management/analysis/visualization). Solely with the Flemish Government a policy-oriented interaction is present where the Flemish Government imposes policies on Informatie Vlaanderen.

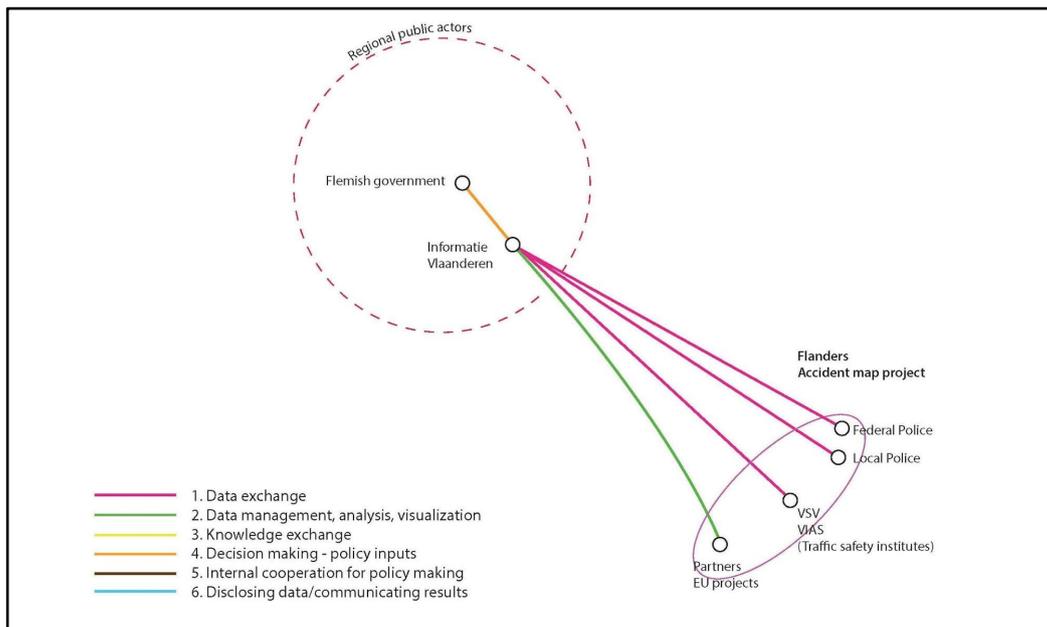


Figure 10: interactions network of the Flemish region

4. Policy making process maps

Next to visualisations of the different actors, interactions and relationships within each pilot city, we wanted to have a representation of the interactions between the different levels of (public) administration, which occurs during the policy making process. A process map aims at merging the main actors of each pilot and visualize them as the role they have in the more general process. Through the interactions between the actors we see how data and visualization in general can be used to aid the policy-making process.

For this, we constructed schemes for each pilot city. The base of the process scheme is the same for all three pilots, but there are some differences in the scheme that show differences in working styles.

The scheme always starts at the top from an urban issue. This urban issue comes to the attention of the policy makers (these are the political actors in the network models). If the issue is straightforward, it is solved through policy making and as a result, a new urban issue might arise. However, if the issue is not straightforward policy makers might require input from the operative sectors of the public administration (these are the knowledge exchange and policy input interactions between political actors and civil servants). The operative sectors of the public administration can work with available knowledge and information, communicate this to the policy makers, who can then make a decision.

Another possibility is that the operative sectors of the public administration push other operative sectors to collect data. This is often done through an office responsible for data and information. This office can coordinate a data exchange with external partners (external companies, citizens, public companies, ...). The office for data and information is also often responsible for data processing and visualization. However, if the data is complex a technical service provider can be asked for help. Once the data is clearly visualized the information goes back to the operative sectors of the public administration, who then delivers the information to the policy makers, who develop a new policy which leads back to the urban issue.

4.1. Issy-les-Moulineaux

We plot the PoliVisu pilot project of Issy-les-Moulineaux on the process map. The urban issue concerned is traffic congestion. The Policy Makers involved in regional and national level are the state, the region Ile-de-France, Metropole Grand Paris, Grand Paris Seine Ouest agglomération. Within the municipality the policy-making actors are the mayor and his deputies in charge of mobility and Smart City, the general manager of the City, the general manager of IssyMedia (in charge of communication and innovation), DGA technical and legal services and DGA finance and smart city. This allows us to see that a large number of policy makers are involved in the urban issue. This can give an indication that achieving a policy change is difficult to attain.

The operative sectors of the public administration that are involved on the regional level is Ile-de-France mobilités. Within the municipality, this is the Senior Official for Technical and legal services, the Senior Official for finance and smart city, public spaces (mobility), smart city sector (ville numérique) and the core actor IssyMedia.

In the developed map IssyMedia has a double role as they are also considered The Office for Data and Information. They exchange data with external parties, such as private firms, and interact with actors that have technical expertise in the processing of more complex data. After visualization IssyMedia communicates the results to the operative sectors, but is also responsible for communication with the public. The idea is that through transparency and communication citizens might make different behavioural choices.

The main difference from the general model for Issy-les-Moulineaux is that the visualized data is also communicated towards the public, as for Issy-les-Moulineaux transparency towards the public is key.

In the map it is shown which position represents the actor responsible for the coordination of the pilot. For Issy-les-Moulineaux this is the Office for Data and Information, which makes them ideally located to have an influence on the policy making process.

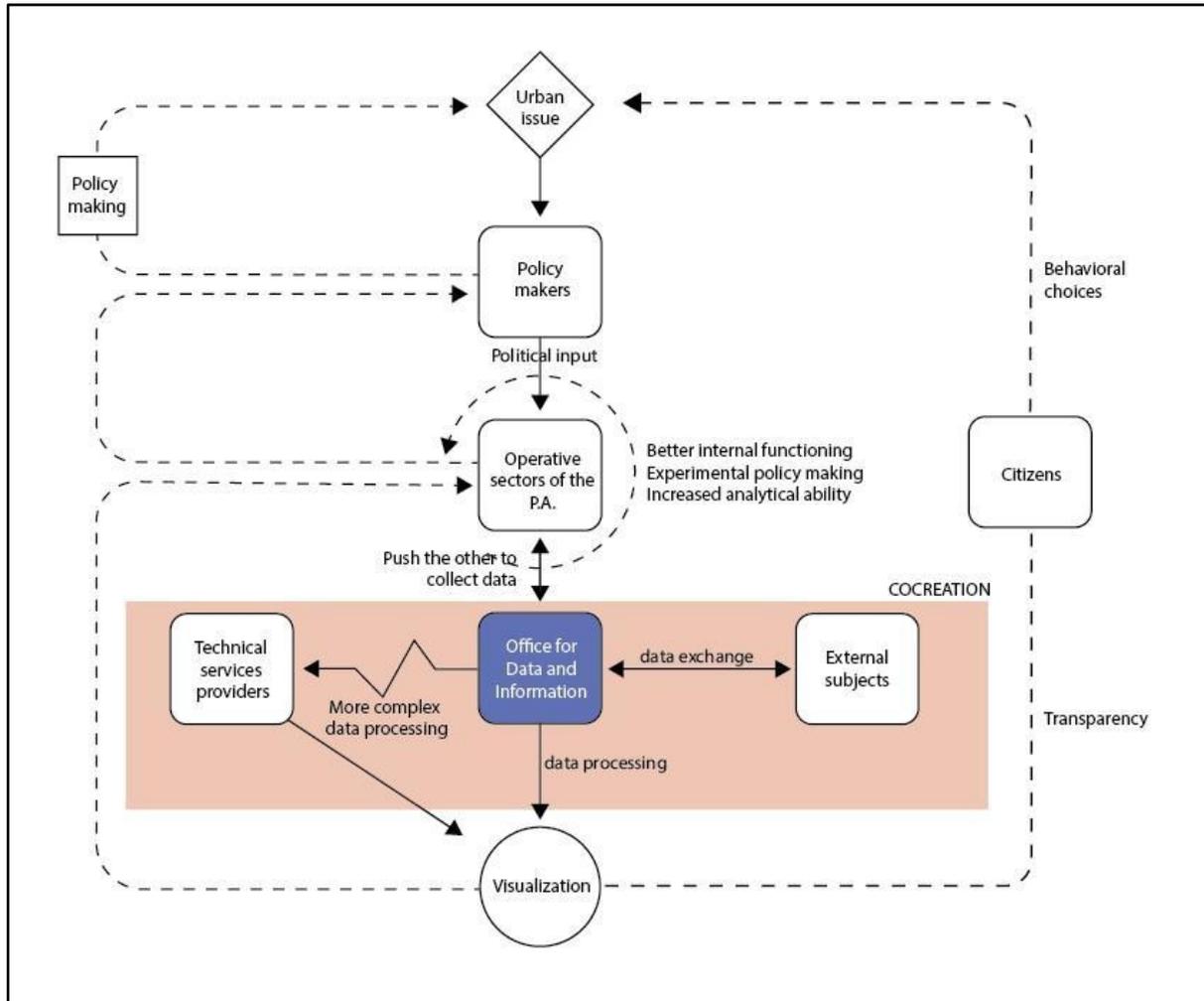


Figure 11: process map of Issy-les-Moulineaux

4.2. Ghent

In the city of Ghent the urban issue concerns the location of student habitation. The Policy makers involved on a regional level is Information Flanders and Smart Flanders. Within the municipality the policy makers are the mayor, the general manager, the cabinets for Education, Mobility, Economy and Trade, Habitation and Urban planning. The Operative sectors involved reside solely within the municipality and are Departments of Education, Economy, Habitation and Urban Development, IVA mobility and the Office for Data and Information. As in Issy-les-Moulineaux the Office for Data and Information has a double role as they are also the link with external partners and technical service providers. The external partners include companies that are external data providers (e.g. Proximus and Fluvius), Institutions for higher education and citizens, here the student officer. The technical service provider included in the PoliVisu pilot is Digipolis, the digital partner of the city of Ghent.

We see that a large amount of policy makers and operative civil servants are involved, which can increase the complexity of the project.

In the map it is shown which position represents the actor responsible for the coordination of the pilot. For Ghent this is the Office for Data and Information, which makes them ideally located to have an influence on the policy making process.

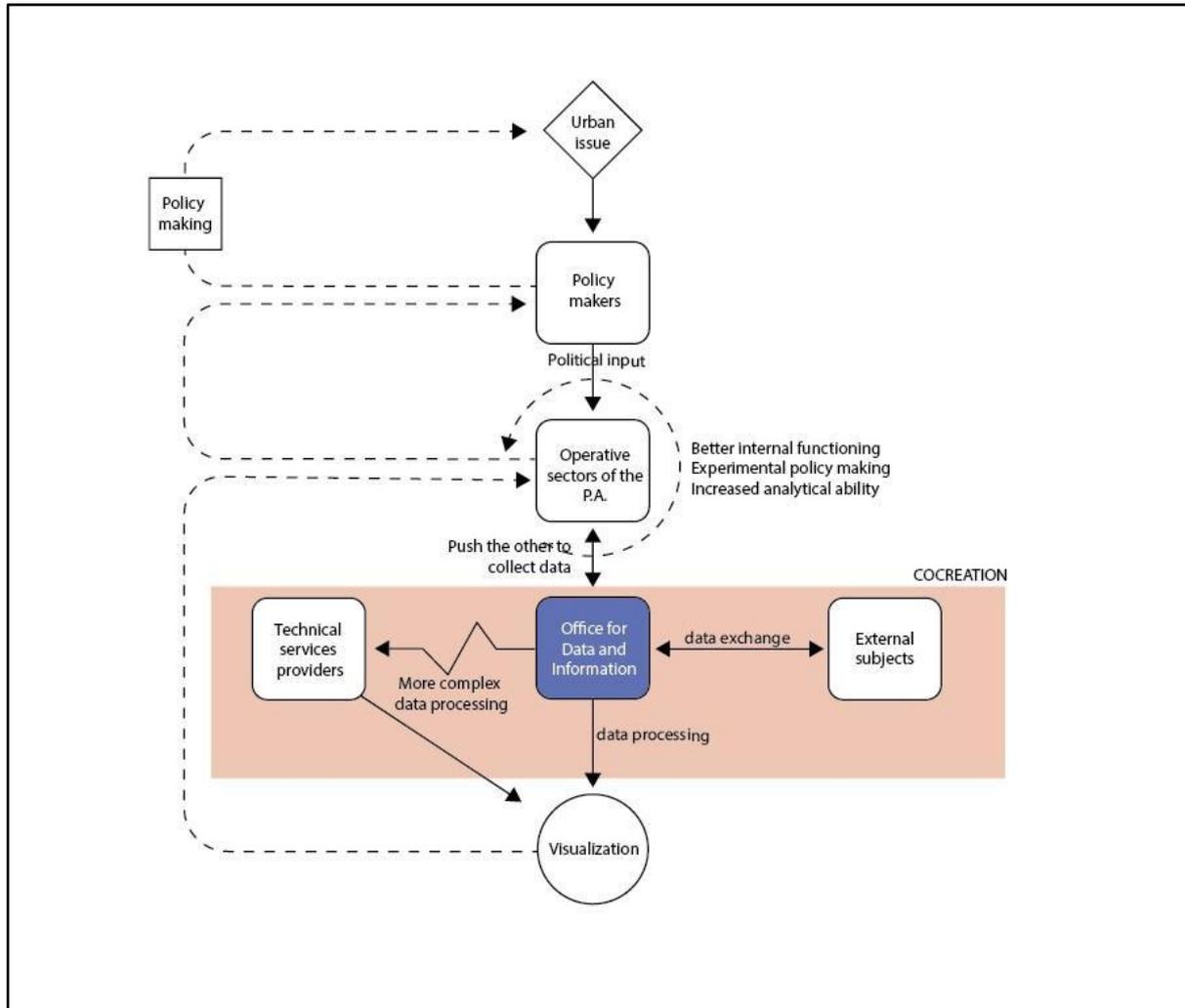


Figure 12: process map of Ghent

4.3. Pilsen

The Urban Issue for the city of Pilsen is traffic congestion. The regional Policy makers involved are limited to the Pilsen Region, but the policy makers within the municipality are plenty. These include the mayor, the city districts, the city council ZMP, the board of counsellors RMP, the transport commission, the smart city commission and the municipal secretary. The Operative sectors involved are the department of security, crime prevention and crime management, the office for services to the population, the smart city department, the technical office and the department of transport. The technical office here serves as the office for data and information that interacts with operative sectors of the public administration, external partners and technical service providers. This technical service provider is SITmP (information technology administration of the city of Pilsen), this is also the core actor for the PoliVisu Pilot. The external partners include city-owned companies: UKRmP (urban planning institute of Pilsen), SVSmP (the management and maintenance of public properties of the city of Pilsen), PMDP (Pilsen transport company), Teplarna (central heating company) and Vodarna (water company). Connections with truly external companies also exist, these are RSD (state owned traffic company), CEZ (electric company), O2 (telecommunication company) and INNOGY (gas company).

Here we see that a lot of external partners are involved. This makes sense as the core actor is a technical service provider that needs and is able to deal with a lot of data. However, coordinating interaction with this many actors might prove to be demanding, especially since the connection occurs through another actor (technical office).

In the model it is shown which position represents the actor responsible for the coordination of the pilot. For Pilsen this is the Technical Service Provider, which shows how difficult it is for the pilot coordinator to have an influence on the policy making process.

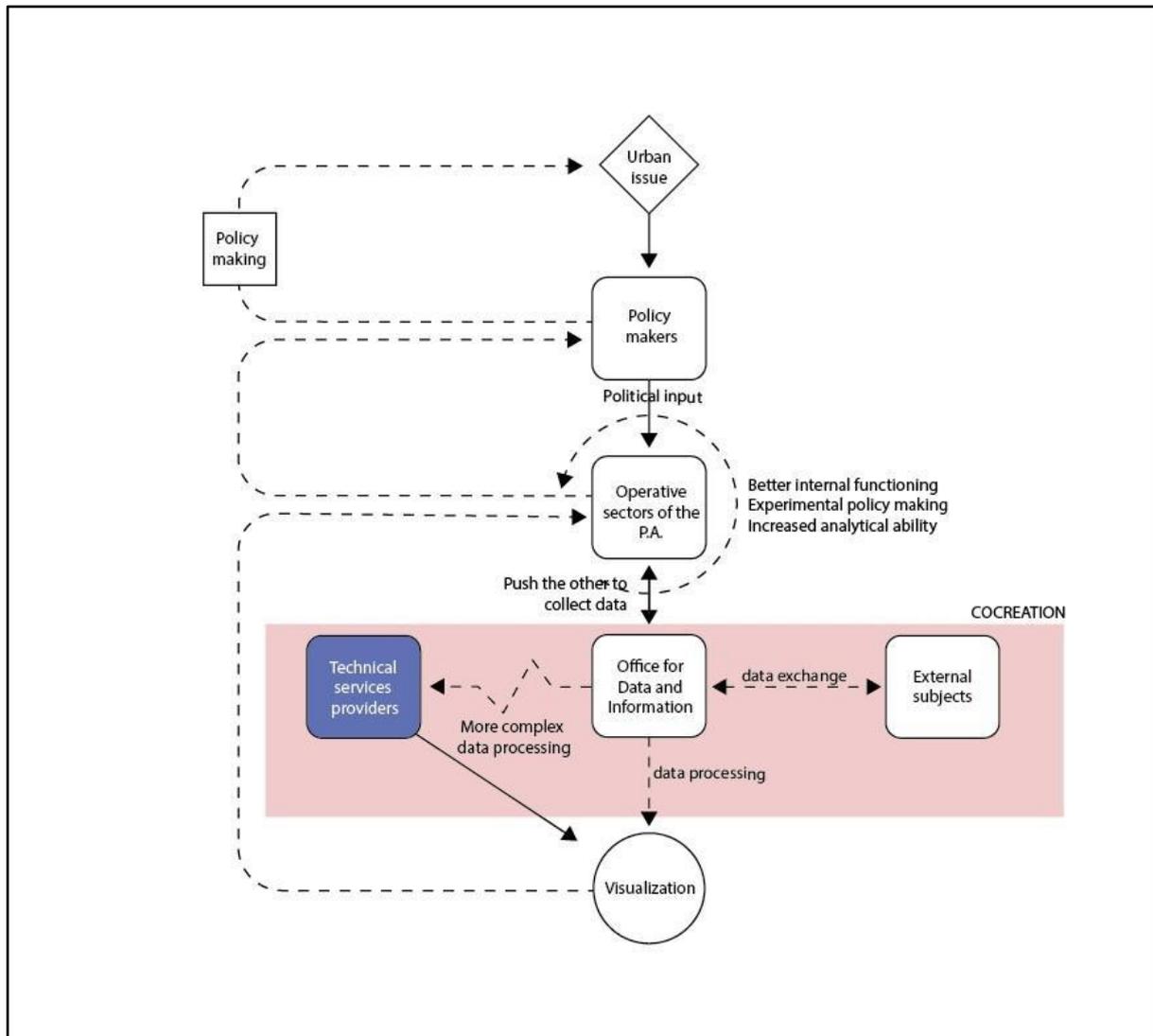


Figure 13: process map of Pilsen

5. Conclusion

A few differences and similarities between the pilot cities can be identified. The Mechelen pilot is not included in this comparison since it is very different from the original PoliVisu city pilots.

Similarities

When concerning the similarities, it is reassuring to notice that the general structure remains the same over cities. The municipality consists of political and operative actors. There is a top-down influence from regional and national actors. Lastly, there is an interaction with external partners. These external partners can be companies or citizens.

A second similarity is the vastness of the networks. They show that, even for a pilot project, a huge number of actors is involved which dramatically increases the complexity of the project. For every pilot a large number of policy makers, member of the operative sectors of the public administration and external partners are involved. Communication between all the actors, influencing the policy makers in the correct manner, communication with the public, it shows that this is a very complex process that is largely interconnected.

A third similarity is directly related to section 5. Very similar process maps can be constructed for all pilots, and are applicable to the policy making process. It shows how actors with a specific function (policy maker, operative member, office for data and information, ...) interact with each other and how all of them are necessary to have data-supported policy making in local government.

Differences

While the general overview is very similar between the actors, there are some striking differences, that clearly shows the uniqueness of the different pilots.

The first difference concerns the interaction with the public, with the citizen of a city during the pilot. Issy-les-Moulineaux pays a lot of attention to communication with and transparency towards the public. Ghent on the other hand pays more attention to co-creation with the public, involving the relevant actors in the decision-making process. In the network of Pilsen the interaction with the public is not very present.

The second difference is related to the connections and the autonomy of the pilot cities. Issy-les-Moulineaux is under strong influence of the broader region and therefore the policy making process is more complex and requests high level negotiations. The same is applicable to Pilsen, since the actor coordinating the pilot is a city-owned company it has only a few connections to the policy-making actors of the municipality. This renders it rather difficult to influence the policy-making process. In Ghent on the other hand the actor coordinating the pilot has a lot of connections, both within the municipality and with external partners. This has the advantage of being directly included in the policy-making process, but also poses the risk of a bottleneck.

General conclusions

This deliverable had as goal to 'paint' for each pilot a policy network canvas. By using social network analyses, we visualized the most influential actors (public and private), which affect the (big) data policymaking.

These figures can prove to be very helpful when planning the pilot activities in the coming pilot cycles. Not only can this help us to better understand the context in which a pilot is acting, we also must take these findings into account when we are discussing the successes and the pitfalls of the different pilots in deliverable 3.8. In 3.8 an expansive overview of learning and pitfalls of the pilots is given and we start from the perspective of the policy-making model.

The policy-making model is divided into 3 steps, policy design, policy implementation and policy evaluation. This is a circular model, because when one policy problem has followed all three steps until evaluation, a new policy problem may arise. This is represented in the process maps of the cities. The process is always circular. The process maps also show that at least policy makers are involved in this process, but that this can expand to operative members of the public administration, a data-handling office and even external subjects (here: companies or citizens). The process map visualizes the practical implications of the policy-making model.

One important aspect that is present in every step of the policy-making model is the interaction with the citizens. The networks show that the pilots can learn from one another regarding co-creation and interaction with citizens. Issy-les-Moulineaux attempts to involve the public by being as transparent as possible. Ghent on the other hand involves citizens with special interest in the pilot project by having a civil servant that is directly interacting with them. Pilsen involves citizens by monitoring their actions and the influence of adaptations in traffic on their behaviour. The pilots can share amongst each other how every approach is working for them, and where they encountered difficulties.

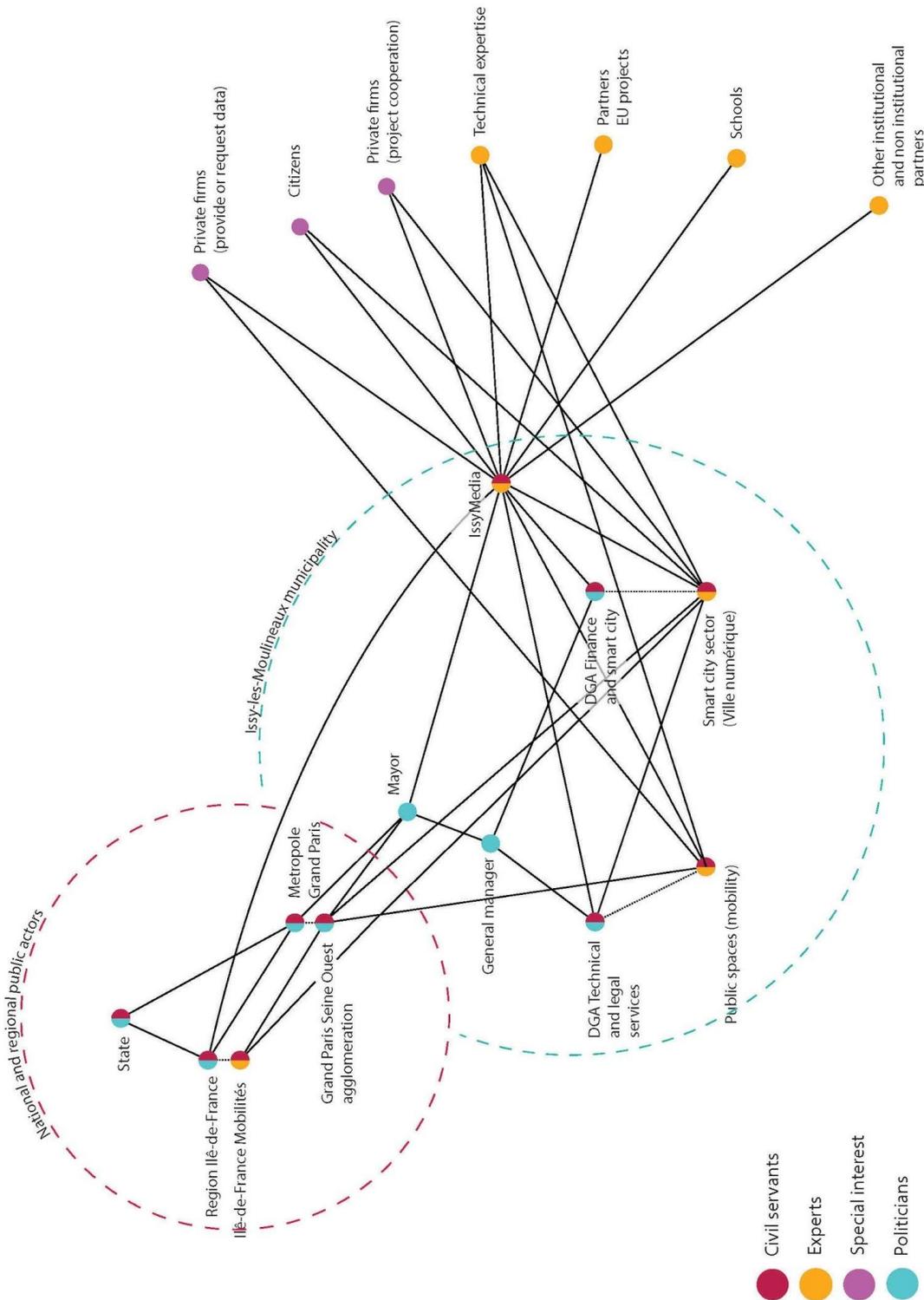
A similar rationale can be applied when external partners are involved. Interactions with external partners, whether they are providing technical expertise or relevant data, happens differently for the actors. Ghent receives technical support from a city-owned company and receives data from an external partner. In the city of Pilsen most companies involved in the project are city-owned. In Issy-les-Moulineaux, on the other hand, this is not the case. There are advantages and disadvantages of having city-owned companies but this reality is often related to political decisions which go beyond the scope of this deliverable. However, it proves to be valuable for cities to consider the differences in approach of collaboration with companies that are completely external or government-owned.

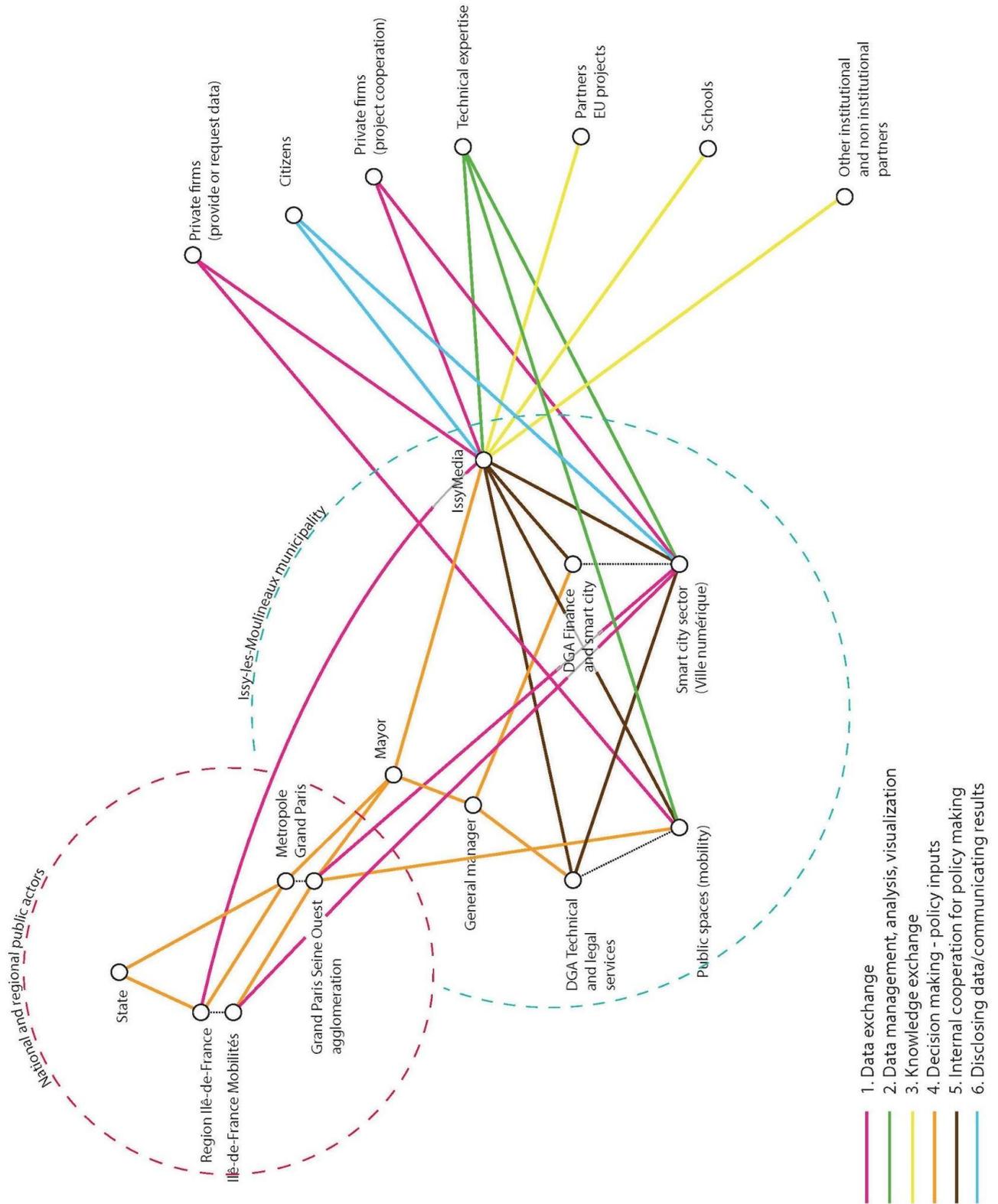
In short, in this deliverable it was shown, through a network analysis and process map, that a lot of similarities exist between the structure and processes of local government in the pilot cities. The differences that exist in the interactions with the broader region, within the municipality or with external partners such as companies or citizens provide valuable information on how the policy making process can be improved. This information on differences and different approaches in the PoliVisu pilots is the scope of deliverable D3.8.

6. Annex 1

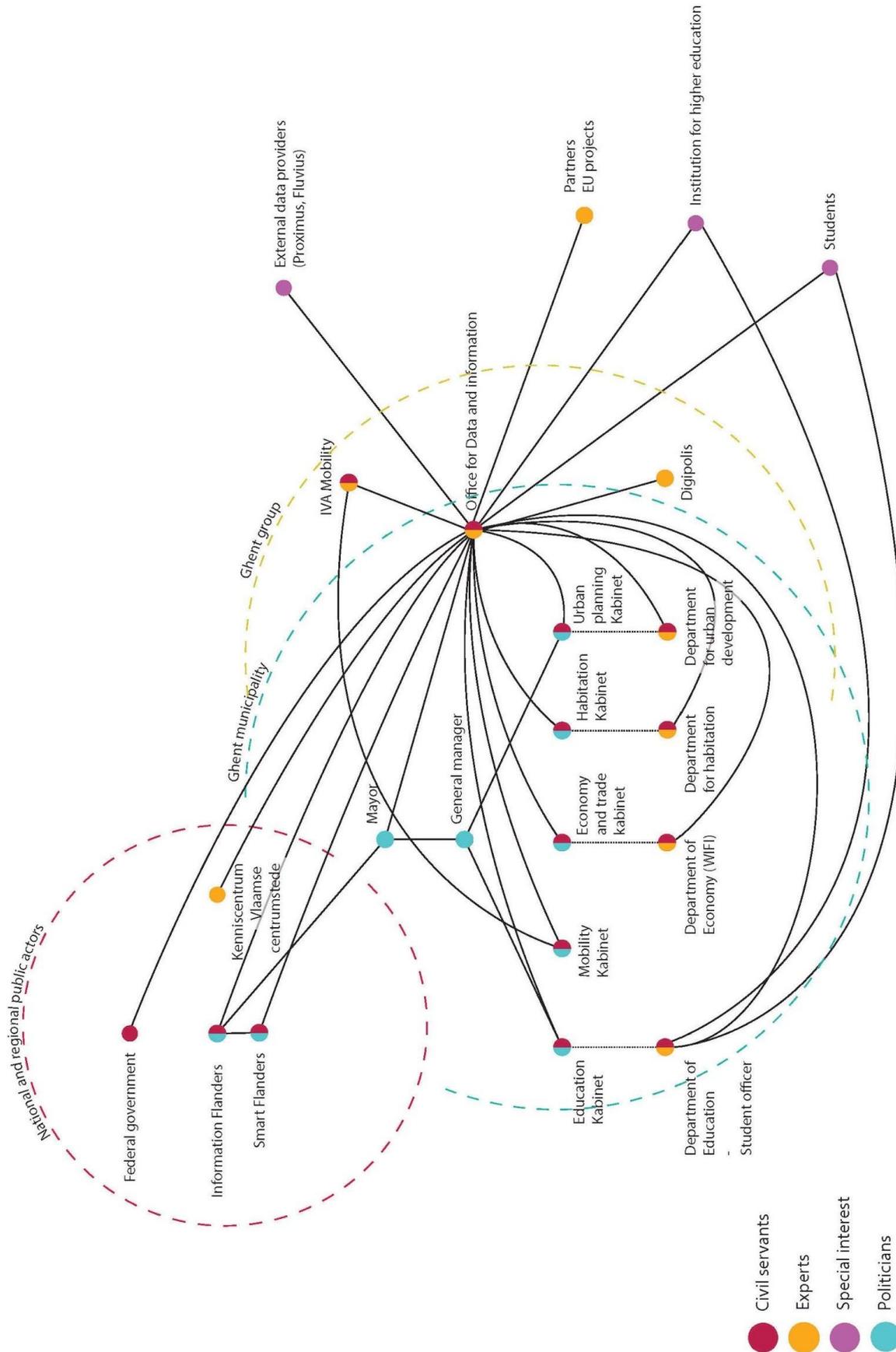
Because the images might be too small in the text to read, large and high-quality versions of the networks are added in the annex.

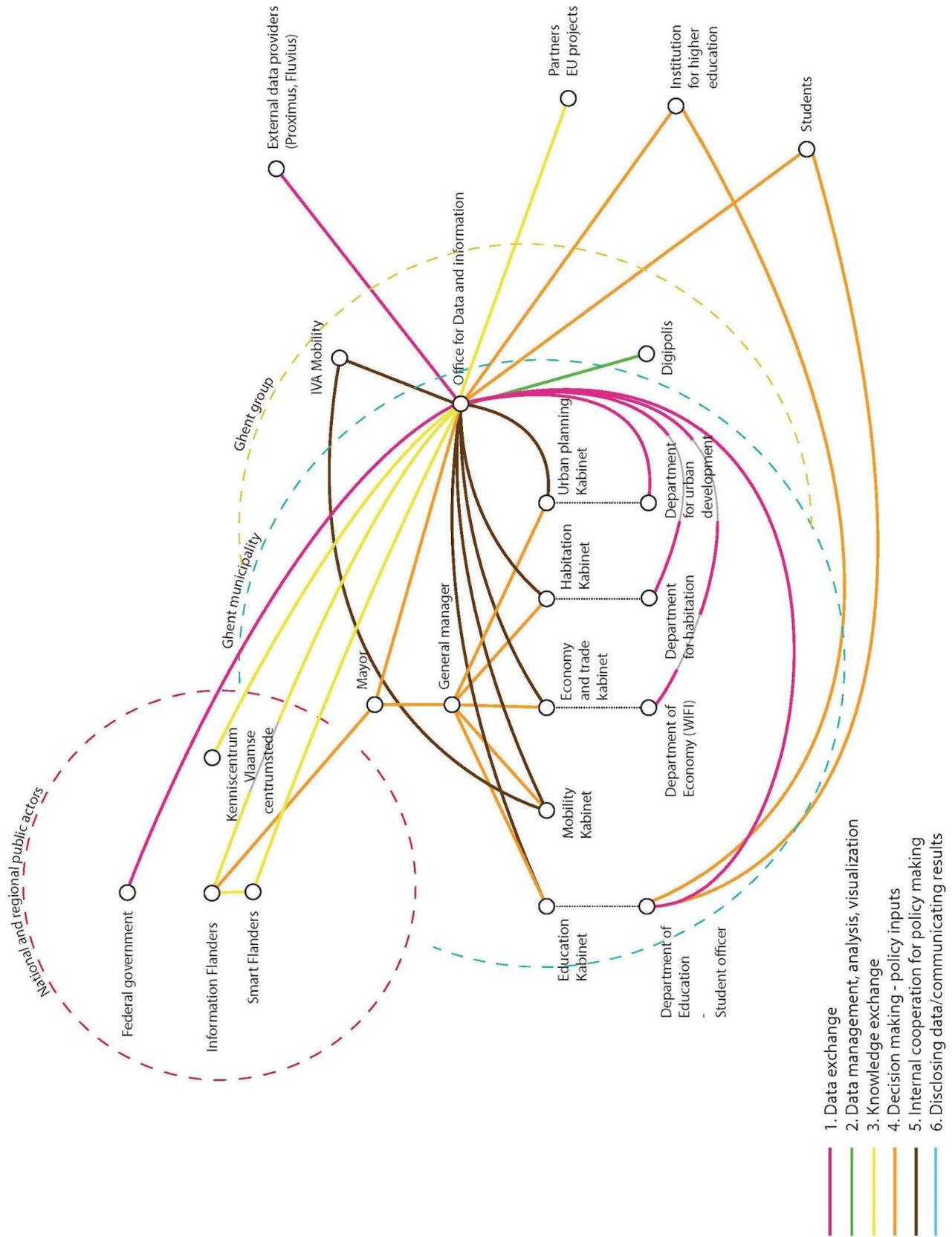
6.1. Issy-les-Moulineaux networks



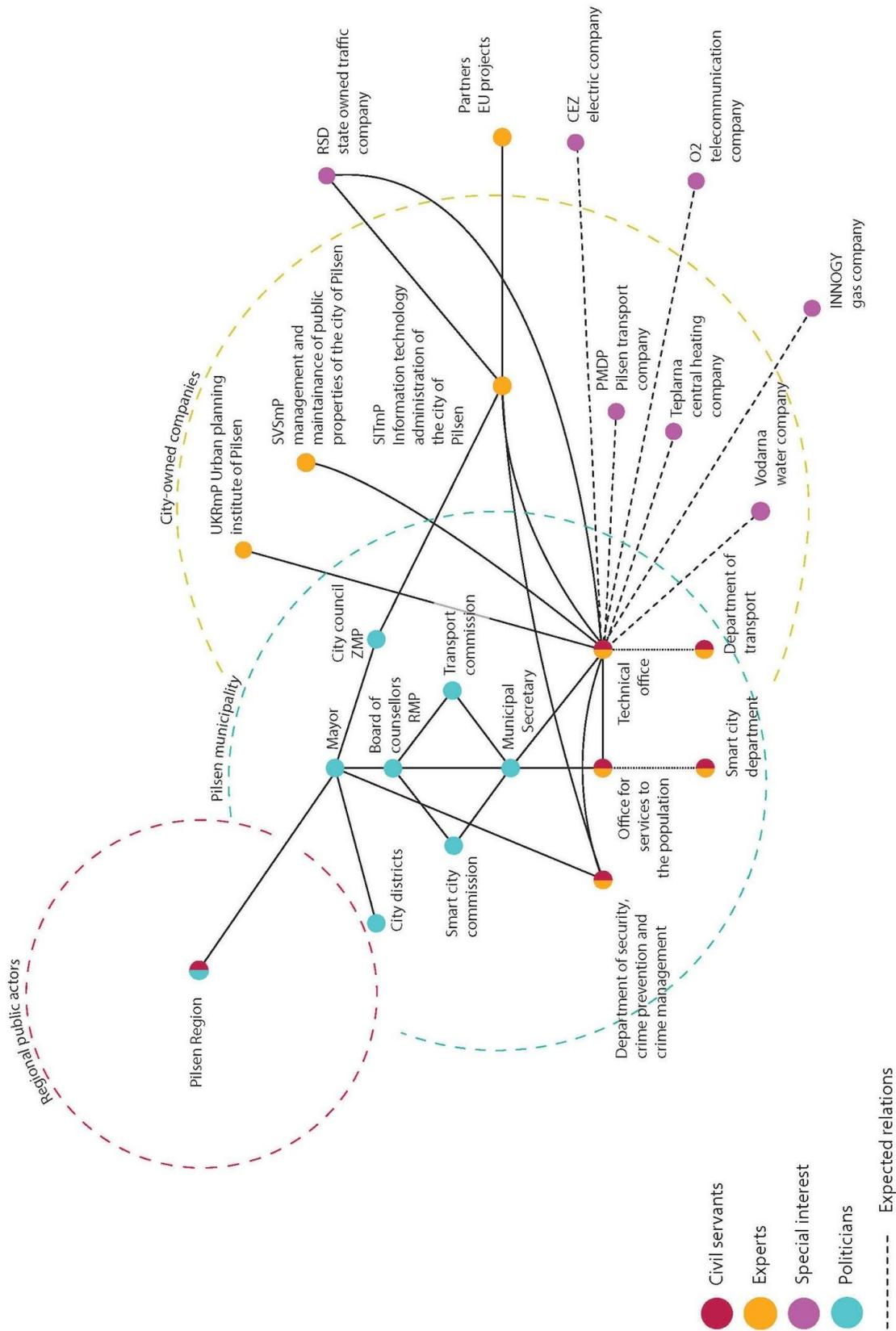


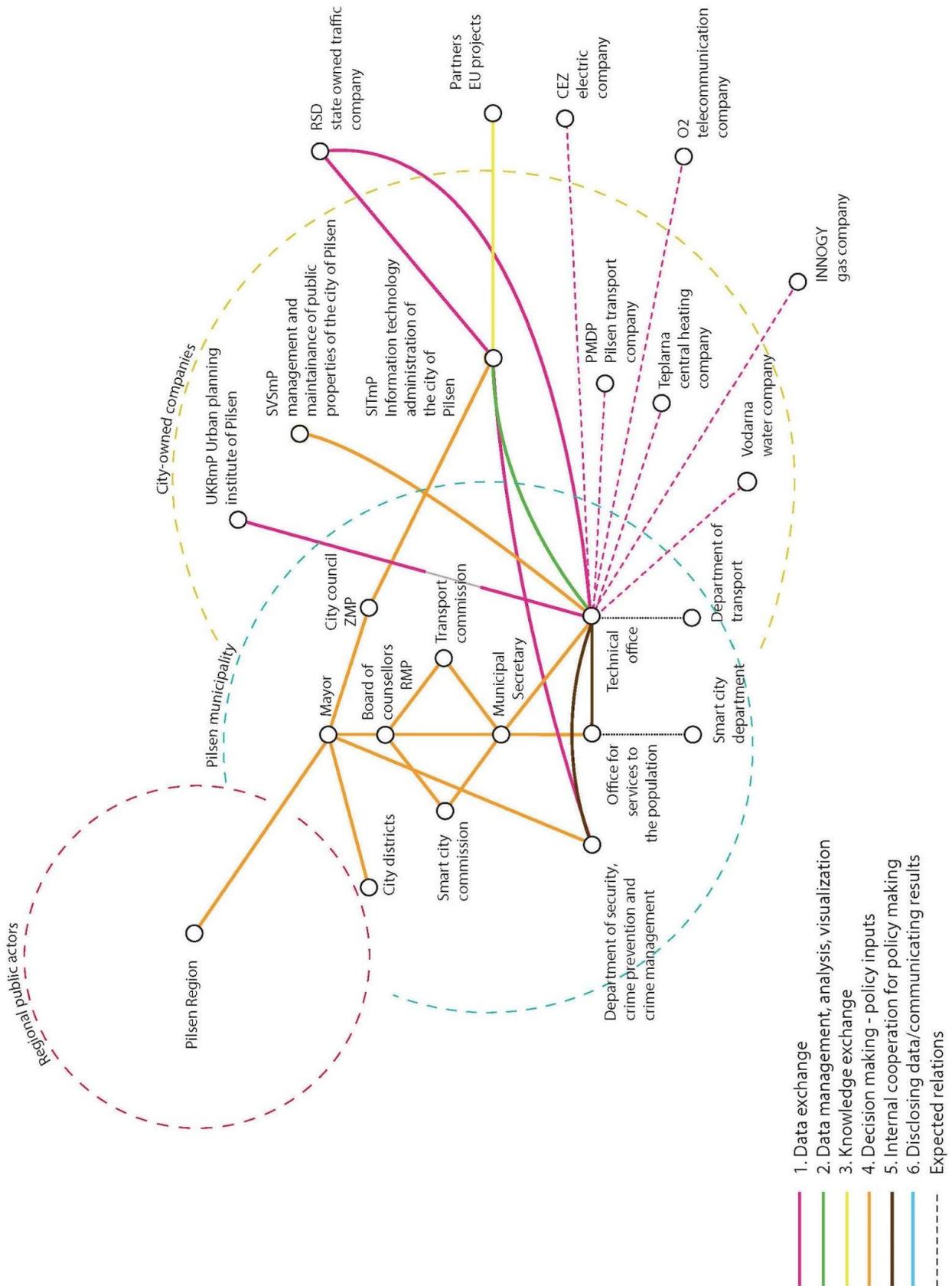
6.2. Ghent networks



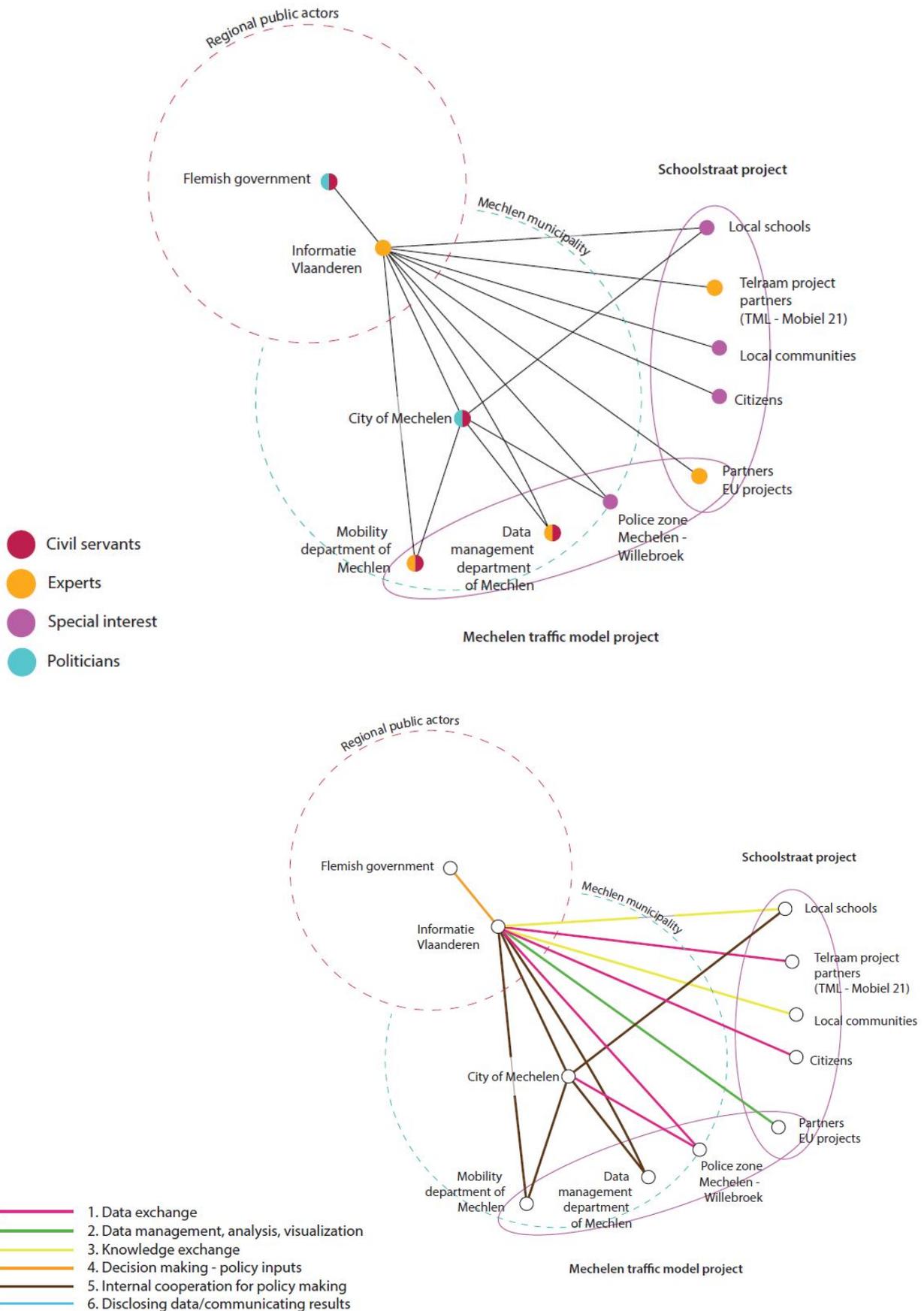


6.3. Pilsen networks





6.4. Mechelen networks



6.5. Flanders region networks

