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## Streamlining the implementation process in urban mobility: Lessons from the ECCENTRIC Project in Madrid

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### Abstract

Success of implementation of innovative measures is usually associated to “strong local leadership”. The reference to leadership may be considered as recognition of the difficulties innovative measures face to move along local decision-making processes. These processes would generally be poorly suited, if not hostile, to deal with innovation, and process-related barriers would be overcome only with the help of political authority.

This paper explores the reasons why local decision making processes are poorly suited to innovation in urban mobility and identifies options for process reform. It builds upon the experience of ECCENTRIC, a Horizon 2020 funded project within the EU’s CIVITAS initiative, running from 2016 to 2020 and implementing 50 innovative measures in 5 European cities, including 11 measures in Madrid. CIVITAS requests a process evaluation of all the measures, looking at the context in which measures are implemented.

Based on the process evaluation experience in Madrid, this paper argues that this approach to process evaluation is insufficient. The evaluation process should include a more fundamental aspect: The consistency of each measure within the dominant values in the local public policies being applied by the city. In those measures with a transformative ambition, process evaluation should take into consideration their compatibility with the political vision and values in the city. In order to keep the original ambition of innovation, there is a need for reforms in the decision making processes within municipalities, establishing *ad hoc* procedures that can properly deal with innovation.

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## 1. Introduction

This paper explores ways to facilitate the successful implementation of innovation in urban mobility. The implementation of innovation is not difficult solely in this area. In fact, this is an issue for research policy at large, well-acknowledged by governments (OECD, 2015). In the transport sector, implementation of innovation is jeopardized by many factors including regulatory frameworks reluctant to changes, insufficient relationship between researchers and implementers or fragmentation of the sector among modal silos, eager of their autonomy (Aparicio & Munro, 2014).

In the field of urban mobility, many efforts have been made to bridge the gap between research and implementation through demonstration projects. The CIVITAS initiative has probably been one of the longer-lasting experiences. It started in the EU in 2002 (in fact, it was preceded by a handful of pilots), and financed since then by the last Framework Programmes for Research and Development, including the current one, Horizon 2020. In spite of almost two decades of demonstrations, the implementation of innovation on urban mobility remains slow (EC, 2009 May, 2015). These demonstrations offer an excellent factual basis to explore how to streamline implementation. CIVITAS has developed a process evaluation framework to identify and assess the existent barriers and drivers during implementation, and the stakeholders involved (Dziekan et al, 2013). The lessons learnt from process evaluation should facilitate the adoption of innovation in cities.

The central hypothesis in this paper is that this approach to process evaluation leaves aside some crucial questions which could help to explain success and failures in cities. The approach relies mostly on a “market” vision of urban mobility and sees innovative measures as products that have to gain the favor of consumers (transport users, service operators or public decision makers). Such an approach may be close to reality for some measures with a highly distinctive profile and autonomy, and offering a general advantage to all. However, many innovative measures in urban mobility do not have such characteristics: they provide incremental gains, and frequently distribute gains and losses unequally among social groups.

Such measures are better evaluated from the perspective of the wider public policies at stake. Public policies focus on “the public and its problems” in accordance with the well-known definition of John Dewey (1927). Peters (1993) defines public policy as “the sum of government activities, directly or indirectly affecting citizens”. As such, the implementation of innovation is usually embedded within local public policies. It can be expected that the implementation of innovative measures will be facilitated when local public policies perceive these measures as useful tools to achieve whatever vision or objectives public policies are aiming at. To be implemented, innovative measures need to become part of the “government activities” or, at least, to be tolerated by these government activities.

There are many elements to consider in the analysis of public policy: political (how decisions are made), administrative/legal (how bureaucracies shape policies), economic (efficiency in meeting objectives), sociological (how groups influence and are affected by policies), philosophical (values and ethical choices behind policies), and more. The purpose of this paper is undertake a broader consideration of innovation within the context of public policies. It builds upon the experience of ECCENTRIC, a Horizon 2020 funded project with the EU’s CIVITAS initiative, running from 2016 to 2020 and implementing 50 innovative measures in 5 European cities, including 11 measures in Madrid.

The paper builds upon two additional hypotheses. The first one is that implementation of innovation generally challenges and stresses local decision-making structures, and have to face a hostile environment. This hostility is usually overcome through political leadership and support from decision-makers, and this support mostly arrives when decision-makers see a potential in these innovations to support their agenda, vision and objectives, as they are translated into particular public policies. The second research hypothesis is that many innovation actors tend to replace this complex environment by a market-like vision, seeing innovation as a product to be introduced in a “mobility market”. Under this perspective, citizens become mere users and local institutions (and private operators) become “providers”. The risk here is to produce measures not consistent with the citizens’ priorities, even if they apparently satisfy their demands as consumers (the user/citizen divide). A simplified market vision makes it difficult to engage into a dialog with decision makers and local structures which could facilitate implementation. More decisively, this approach can be founded on a particular vision of the values at stake in public policies, one that stresses individual responsibility, following the neoliberal tradition. A similar analysis can be made of approaches that see innovation

primarily as a public good, and as a way to reinforce communities and their well-being. In this case, public policies are mainly inspired by the value of solidarity (Nagel, 1986). In real life, innovators are likely to meet city leaders that pay attention, in different proportions to the values of responsibility and solidarity, and will be successful in getting innovation implemented to the extent that their proposals can fit within the dominant values. Following both hypotheses, a typology of measures is established and applied to the ECCENTRIC project, currently under implementation in Madrid.

The paper is structured as follows: the first section after this introduction presents an overview of the current experience and limits in the implementation of urban transport innovation; it is followed by a discussion on public policies from a philosophical perspective, looking at the values at stake, with a focus on urban mobility; the next section presents the current process evaluation applied in CIVITAS, identifies its implicit values and provides an alternative analytical framework with a typology of measures; this typology is subsequently applied in the next section to the measures of the ECCENTRIC project in Madrid. The last section concludes with some recommendations to improve process evaluation and some discussion on the options to facilitate the implementation of innovation in urban transport.

## **2. The challenge: Implementing innovation in urban mobility**

Innovation has been at the heart of the European Union's transport policy for at least 3 decades. Innovation was initially seen as a way to improve efficiency, avoiding congestion and to reduce the environmental impacts of transport. This interest also includes urban mobility. The green paper on urban mobility (EC, 1995) is followed by different policy papers that ultimately result in the Action Plan (EC, 2009). and the urban mobility package (EC, 2013). In this process, innovation takes an even more central role, as the challenge of climate change mitigation gains in relevance. The European Union provides support to innovation in urban mobility by including urban-related topics within its transport topics since the IV Framework Programme on Research and Development, in the early 1990s. Considering that research projects on urban mobility are not sufficient to introduce the necessary changes in urban mobility, the European Commission includes a few demonstration topics in the calls made at the end of the 1990s. These early demonstrators proved to be successful to increase the interest of local decision makers and other stakeholders to implement innovative and disruptive measures in their cities, and since 2002 a number of demonstration topics has been included in many calls for research proposals under the common label of "CIVITAS" (City Vitality And Sustainability). Since then, CIVITAS has been considered as "an engine of urban mobility innovation" (EC, 2013).

The evidence in Europe (Rommerts, 2012) is that "policy transfer" (the key channel for the implementation of innovation) happens through informal networks of individuals in the EU (mainly working bottom-up). The EU approach has been to create similar informal networks among decision makers (covenant of mayors, policy advisory groups, and some networks of cities: ICLEI, Polis, Eurocities...).

This approach is consistent with the fact that there are no "innovation-friendly" regulatory and institutional frameworks. The approach builds upon "mouth-to-ear" or "peer-to-peer" communication to adopt innovative measures. In fact, this approach has known some success, and some innovations have become usual practice with time, such as parking regulations, car sharing or biking promotion. Another relevant impact of CIVITAS was the consolidation of the Sustainable Urban Mobility Plan (SUMP) concept, a methodology to establish alternative transport planning schemes in cities focusing on sustainability values. SUMPs have become all but compulsory for cities to gain access to some national and EU funds, including participation in some research projects.

In spite of its long-life and popularity, the innovation approach followed in CIVITAS has some limits in terms of a slow speed of transfer, a prevailing "top-down" approach, and difficulties for transferability of measures to cities that are facing very different contexts. CIVITAS has attempted to address these barriers by encouraging a customized, heavily contextualized approach in the projects funded. This approach follows the "living-lab" concept, an approach to the development and implementation of innovation originated in the ITC sector at the turn of the century, in order to better suit products to users: "Living Labs are an emerging Public Private Partnership (PPP) concept in which firms, public authorities and citizens work together to create, prototype, validate and test new services, businesses, markets and technologies in real-life contexts, such as cities, city regions, rural areas and collaborative virtual networks between public and private players." (Niitamo et al, 2006). The living lab concept was not explicitly used by CIVITAS

until recently, once it is recognized as a valuable tool for testing and implementing socio-economic and not only technological innovations. Franz et al (2015) consider living labs as a tool for implementation, and consider that they allow to take into account the socio-economic context. In this sense, they are equally valid for technological and social innovation, and they also allow to integrate the various actors/stakeholders, and to explore co-creation (although co-creation is a different issue, and perhaps an overestimated one). Transfer of the concept to the urban environment has also its limits, particularly (1) the lack of a long term perspective (and sufficient time for implementation: as most projects run for 2-4 years), (2) insufficient involvement of public authorities, and (3) lack of a clear research question for the living lab effort.

The first issue has been addressed with the development of SUMP almost as a prerequisite to apply for CIVITAS funding (and with an enormous effort to develop support, guidance and good practice for SUMP design). The second one has been shyly addressed through a “Policy Advisory Committee” for CIVITAS, consisting of elected city councilors and mayors. As for the third one, the research question remains in general too wide, targeting the promotion of sustainable mobility. In some cases, cities join forces within a project around some urban commonalities in the area targeted, be these historic centers, port districts, or peripheral neighborhoods.

The CIVITAS experience illustrates on the pros and cons of addressing urban mobility with a highly autonomous and sectoral perspective. Following its living-lab roots, CIVITAS helps practitioners to fit their products (mobility measures) to each local market (cities or districts within cities). CIVITAS is interested in process evaluation as a way to identify potential levers to get measures customized and approved to different contexts. This “fitting-to-market” paradigm has shown some limitations: in terms of results, the reduction in in car use and associated emissions has remained low in spite of the enormous effort, as it has also been the case in terms of structural changes (very low path of change, at best); in terms of local governance, there have not been significant reforms in the targeted cities; in terms of innovation, the field is still dominated by incumbent industrial players, with quite moderate successes for newcomers in all fields.

Since 2007, the economic and financial crisis has reduced the capacity of most public stakeholders, and particularly cities, to sustain their efforts on innovative mobility solutions. Since then, the capacity of action for cities has deteriorated, due to weaker financial muscle, and the priorities of the various social players have changed, probably with less interest in mobility issues compared to other public policies.

### **3. The current debate on public policies and social values, and its consequences on urban mobility**

The CIVITAS approach to urban mobility policy can be better analyzed from the perspective of what public policies are about and how they are shaped by the social values prevalent at each time and place. Public policies are linked to shared (or prevailing) values in one society, and for this reason, public policies change in time (Craig, 2015). Following Wolff (2015?), the dominant social values in public policies changed dramatically between the 1950s and the 1980s, from solidarity to responsibility, in the context of the conservative revolution, and the sharp criticism of conservative thinkers like Friedman (1962) and Nozick (1974) to liberal, social policies.

The aftermath of the 2007 crisis has raised a renewed interest in solidarity. Furthermore, this turn has been coupled with a more nuanced attention to the meaning of justice, fairness and equity. The contributions of thinkers such as Fraser, Sen or Young have expanded the Rawlsian understanding of equity as a question of distribution of public goods towards a more complex understanding of the concept, to integrate cultural dimensions and the need for full recognition of the others (Young, 2008; Fraser, 1998; Sen, 2009).

The change in social values is translated into a change in the analysis of the outcomes of public policies. The prevalence of individual responsibility over solidarity changes the way public policies are assessed, meaning that the traditional focus from effectiveness (e.g. number of people served by transport systems) and equity towards efficiency (minimizing the relative costs for transport provision per capita) or cost-equity. This approach has been prevalent since the 1980s, although it was occasionally challenged by a more nuanced concept of effectiveness-equity (Nagel, 1986 and 2002).

As fairness in public policies moves beyond distribution of public goods and individuality, to embrace the questions of citizenship (participation in decision making, Fraser 1998), and community (recognition of particular social groups, their culture, values, priorities and needs, Young 2008), there is a need to revise the design and approval process of

public policies at least in two aspects. Firstly, in what refers to access to the design and decision-making process of individuals and groups (new approaches such as collaborative planning and design or “co-creation” emerge). Secondly, in what refers to the identification and due consideration of the perspective and needs of particular social groups.

Since 2007, the economic crisis raised also concerns on the ability of public policies to deal with vulnerability and with stressed places and societies. A similar sensitivity towards vulnerability also emerged on the environmental front, as changes in climate could compromise the functionality and living standards in many cities. These concerns have resulted in an interest for urban resilience, and a search of public policies able to adapt to unexpected changes in the natural or socioeconomic environment. Based on evidence in what has happened in cities in the last 10 years, local governments are encouraged to develop robust governance systems, rooted on wide participation, transparency and accountability in order to be able to adapt to unexpected challenges (EEA, 2016).

We can find in public policies related to urban mobility some traits of the relevance of considerations on responsibility, solidarity and equity. For example:

- Sustainability as a paradigm strongly and increasingly associated to efficiency. In order to gain influence, sustainability has been associated to particular quantified indicators (e.g. GHG emissions, or modal split). Facing different options to attain sustainability targets, efficiency has usually been privileged to define public policies.
- Individual responsibility often results in a reluctance to establish what can be considered as boundaries or limits to individual freedom. An approach on individual responsibility favors actions such as “awareness-raising” or “price signals”, leaving up to the individual the final choice. The reluctance of some political and social groups to impose restrictions to car use in the name of “freedom of choice” is a good example of how widespread this vision remains in many cities.
- The distributional perspective in urban mobility has a long and strong tradition, reflected in the provision of minimum mobility services within cities through infrastructure, services and integrated fares and ticketing schemes.

By reviewing the continuing barriers to effective policy development (focusing on SUMP), May (2015) identifies some areas in which “further research might usefully focus”. This list of barriers is also relevant in what refers to the gap between innovation and implementation, which cannot be come as a surprise, as SUMP largely rely on innovative measures. The barriers refer to the usual planning activities (understanding good practice in partnership working; improving the processes of benchmarking and target setting; testing the application of option generation methods for policies and packages; assessing the effectiveness of different approaches to financing), to the involvement of stakeholders, and to the decision-making process at large (identifying good practice in stakeholder involvement at all stages in the policy process; understanding effective political decision-making and leadership), as well as to monitoring and evaluation (evaluating alternative approaches to policy implementation; continuing to evaluate novel policy instruments and, in particular, policy packages).

This research agenda can be seen as (1) a recognition of the lack of valid references for policy makers to implement innovation: from the early stages of identification of stakeholders and targets to monitoring and evaluation, (2) a claim for a planned approach, based on consistent policy packages, and not on isolated measures, and (3) a claim to focus research on processes (i.e. on public policies), and not on particular technical measures: the difficulties to achieve the expected outcomes in urban mobility policies is not coming from lack of technical tools, but from the inability to get policies approved, legitimized and implemented.

In practical terms, these discussions are relevant for ECCENTRIC in what refers to the policy style behind each measure. Some questions can be relevant from the analysis: (1) how relevant are the perspectives of efficiency, effectiveness, and equity in each measure; (2) how are individuals engaged (and empowered), (3) how are particularly vulnerable/marginalized social groups involved, and (4) how is each measure context (as reflected in the living lab approach) conceptualized, and which are the values underlying such conceptualization. These questions are integrated within an analytical framework in the next section.

#### 4. The analytical framework: citizenship, formalization, barriers and drivers, flexibility

##### 4.1. CIVITAS approach to process evaluation

The CIVITAS approach to process evaluation is developed in Dziekan et al (2013). This document summarizes the lessons learnt from projects financed by CIVITAS I (2002-2006), CIVITAS II (2005-2009), CIVITAS PLUS (2008-2013) and CIVITAS PLUS II (2013-2017), and from the horizontal support actions METEOR (CIVITAS I), GUARD (CIVITAS II), and POINTER (CIVITAS PLUS). The process is understood as “how measures are legislated and planned”. More precisely, “process evaluation focuses on the internal dynamics and actual operations of a measure in an attempt to understand its strengths and weaknesses. The process evaluation searches for explanations on the delays, changes, failures but also success of the measure... Finally, process evaluation usually includes perceptions of people close to the measure about how things are going or went” (Dziekan et al, 2013).

Process evaluation in CIVITAS focuses on identifying process barriers and drivers. “Process barriers are the events or the overlapping conditions that get in the way of the process to reach your measure’s objectives... Process drivers are events or overlapping conditions that stimulate the process to obtain measure objectives”. Both can be considered as corresponding to different fields: political or strategic, institutional, cultural, stakeholders’ involvement and communication, planning, organizational, financial, and technological. Process evaluation takes the perspective of the innovators, the stakeholders actively engaged in the implementation of the measure: “The activities you undertook to make use of the drivers or to overcome process barriers... are probably the most interesting part for the reader of your report. It shows how problems have been solved and how positive factors have been utilized for carrying out the measure implementation process more efficiently” (Dziekan et al, 2013).

The main weakness in this approach comes from its focus on each measure implementation instead of looking primarily to the policy processes happening in the city. The measure-centrism invites the evaluator to treat the barriers and drivers equally, independently of the “fields” they belong to. In a way, measures seem to be seen as “products” that have to be placed in a “market”. The analysis on barriers and drivers follows the approach of marketing studies, trying to identify how to increase the “marketability” of the measures under consideration.

##### 4.2. An alternative framework for process evaluation of sustainable mobility measures

It is worth noticing that the extensive list of “fields” for barriers and drivers identified by Dziekan et al (2013) are of a quite different nature. Considering the approach to public policies sketched in the previous section, three main clusters or categories could be identified:

- Barriers and drivers referring to the means necessary to implementing the measure. This would include the fields, “planning”, “organizational”, “financial”, “technological” and “spatial”.
- Barriers and drivers referring to the conditions in the living lab or socio-economic and spatial context in which the measure is implemented. This cluster would include the fields “political/strategic”, “cultural”, and “involvement and communication of/with stakeholders”.
- Barriers and drivers referring to the prevailing concept of what public policies should be about. This cluster would include the fields “institutional”, “problem-related”, and “positional”.

Although barriers and drivers within any of these clusters can be decisive for success or failure in measure implementation, their significance is quite different. Barriers and drivers belonging to the “means” cluster are expected to be linked to knowledge and resources. They are probably the ones May (2015) refers to while asking for further collaboration between cities and the research community, and they are also the ones research and demonstration projects are typically requested to deal with.

Barriers and drivers within the “market cluster” are typically analyzed under the framework of the living lab approach. Franz et al (2015) provide a comprehensive analysis of the application of the living lab approach to innovation in cities, and highlight four main elements, which could serve to characterize a city lab. Three of these dimensions are similar to the fields proposed by Dziekan et al (2013): the project or measure objectives during the living lab in the short and long term, the motivation and goals of stakeholders involved, and the involvement of stakeholders and citizens at large in the measure. The fourth dimension, added by Franz et al (2015) relates to extent

to which the results can be generalized, which is obviously useful to establish a typology of living labs, but does not seem relevant from a process evaluation perspective. The reference to transferability is however quite significant, as it highlights the relevance on contextual or living lab conditions for the success and failure of innovation: innovative measures are adequate only in particular contexts.

The influence of the three clusters above on measure implementation is different: virtually any measure can face barriers and drivers under the “means cluster”. Some of them will also face barriers and drivers under the “market” cluster. And only a few of them will also face barriers and drivers under the “public policy” cluster. Considering the contents of measures, and the respective roles of decision makers, transport specialists, and other social and economic stakeholders, it is possible to establish the general profile of measures that will be most likely to fall under any of these three situations.

The first group of measures would correspond to those that can be strongly influenced during its design and implementation by barriers and drivers within the “means cluster”: planning, technology, financial resources... These are likely to be measures with a strong technological content. They are likely to be primarily oriented to traffic and mobility management by public authorities and municipal technical services. The relevance of the context is low or non-existent, and the perceived political risk associated to implementation is low. They are likely to be seen with strong interest by transport professionals, with indifference by citizens and with mild interest, at best, from decision-makers. These measures are usually assessed through conventional methodologies, such as CBA, and process assessment is relevant only to identify potential ways to improve management and decision-making mechanisms within the organizations involved.

The second group of measures would correspond to those that can be influenced by barriers and drivers within both, the “means” and the “market” cluster. These are typically measures of a strong technological content, suited to provide marketable products. The private sector is likely to be strongly involved in these measures, but this interest is highly volatile and may disappear even while the demonstration is still under preparation or in progress, if better opportunities appear elsewhere or the contextual conditions are perceived to change. Living lab demonstrations are essential for these measures, although the size of the living lab is usually big, as measure promoters are interested in wide transferability, rather than particular niches. Public authorities are often seen as attractive supporting partners, as they can help to the marketability of the measure through incentives and regulations. These measures are well analyzed through a living lab approach.

The third group of measures can be influenced also by barriers and drivers within the “public policy” cluster. They are typically measures with a high political profile, mobilizing all kinds of social and economic groups, and getting keen attention from decision makers. Technicians and civil servants have to work under strong pressure to meet the conflicting demands of stakeholders, and usually push the measure forward through a volatile environment. It is likely that these measures will be localized in living labs of a limited size within the city, and with clear borders. Notwithstanding the relevance of “means” and “market” barriers, it is crucial for these measures to be aligned with the key social values that inform public policies in the city at stake.

This typology of innovative measures can be useful at two levels: (1) at the project level, to identify those measures that can be interesting to propose for demonstration in a particular city; (2) at the policy level, to identify the underlying opportunities and barriers that should be used or removed in order to achieve policy reform. This typology is applied in the next section to the measures deployed by the ECCENTRIC project in Madrid.

## **5. Lessons from CIVITAS in Madrid: a review of the implementation of 11 measures**

### *5.1. The ECCENTRIC project in Madrid*

The CIVITAS (City VITALity and Sustainability) initiative has been funded since the early 2000s within the EU’s Framework Programmes for Research and Development. It focuses on implementation, providing support to innovation and demonstration projects conducted by European cities. CIVITAS provides a platform for real testing of innovation within the sustainable urban mobility (SUM) paradigm, aiming at pushing forward SUM practice in European cities and, accordingly, focuses on the deployment of green, clean technologies and low-carbon mobility.

However, CIVITAS also addresses other challenges, such as planning and participation, and the needs of broad vulnerable groups (Tekir, 2014; Dotter, 2016).

ECCENTRIC (Innovative solutions for sustainable mobility of people in suburban city districts and emission free freight logistics in urban centers) is one of the three demonstration projects funded by CIVITAS within Horizon 2020. ECCENTRIC started in September 2016, and involves the cities of Madrid, Munich, Ruse, Stockholm and Turku. These cities have in common previous experience in the implementation of sustainable mobility policies and measures, and similar contexts: city centers already transformed in attractive, livable urban areas, and with rising demand to implement high quality and viable solutions for neighborhoods outside the city Centre. Briefly, the challenge for these cities is to implement innovative SUM solutions in peripheral city districts called city-labs.

The city-lab in Madrid is Vallecas, at the south-east of the municipality, with 328,000 inhabitants. The area consists of several well-defined neighborhoods, all of them with a population that has consistently decreased in the last 10 years (1.23%). The only exception is the neighborhood Casco histórico de Vallecas, which almost doubled its population (+96.7% or 38,218 inhabitants), due to the new development known as Ensanche de Vallecas, one of the main new residential areas planned by the 1997 Land Use Plan, which started to materialize within the past decade. The location of the city lab and different areas within the city lab are shown in Fig. 1.

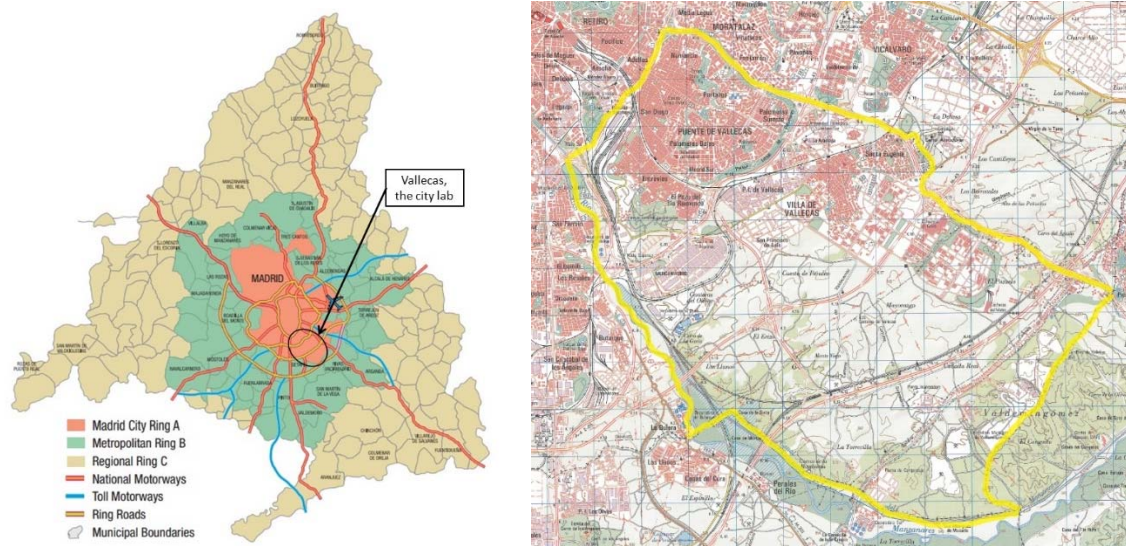


Fig. 1 Location and Structure of Vallecas, the ECCENTRIC city-lab in Madrid

The ECCENTRIC project does not explicitly describe a vision for the living lab in Madrid, but this can indirectly be identified through the challenges the project intends to address. These challenges refer to:

- Lower than average income compared to the whole city: 25% below the city average in Puente de Vallecas and 9% below the city average in Villa de Vallecas.
- Young population: The percentage of elderly is significantly lower to the city 27.7% average: 18.6% in Puente de Vallecas and, due to the influx of young families in the new Ensanche, only 12.0% in Villa de Vallecas. Children (below 15) account for 19.2% of the population in Villa de Vallecas, much higher than the value in Puente de Vallecas (14.5%) and the city average (14.5%).
- Weak economic base. The number of jobs in both districts is low; Puente de Vallecas has lost its traditional industrial activity, and the residential character of Villa de Vallecas has dramatically increased with the construction of Ensanche. The ratio of jobs to employed population in each district is just 37% in Puente de Vallecas and 67% in Villa de Vallecas.
- Traditional high-density neighborhoods: Density is very high in most of the neighborhoods in Puente de Vallecas, particularly in San Diego (364 inh/ha) and above 220 in Numancia, Palomeras Bajas and Portazgo;



densities are much lower in Palomeras Sureste (135 inh/ha), and Villa de Vallecas (116 inh/ha in Santa Eugenia and only 16 inh/ha in Centro histórico, with still some of the land of Ensanche under development).

- Heavily impacted by pro-growth policies and metropolitan infrastructures: The large natural areas in Villa de Vallecas were mostly dedicated to the new housing development of Ensanche during the real estate bubble that led to the financial crisis. The city laboratory is separated from the city Centre by the M-30 ring road, both districts are separated by the M 40 ring road and the other two ring roads, M-45 and M-50 go along the new Ensanche.

It can be concluded that the project aims (1) to increase the share of sustainable mobility modes in the living lab; (2) to improve livability in the living lab, including reduction of traffic accidents and risks, improvement of public space to encourage walking; (3) to reduce gaps with respect to the city average, through the provision of better mobility services (public transport, biking infrastructure...) and a more attractive environment, which could attract additional economic activity and jobs. The project's vision for the living lab strongly relies on the usual priorities of the sustainable mobility paradigm, with a relatively modest reliance on technological innovations, and some specific concerns on social equity.

The project in Madrid includes 11 measures, of very different nature. They are presented in Table 1. The measure code in the table will be used to refer to the respective measures throughout the remaining of this paper.

Table 1. The measures of the ECCENTRIC project in Madrid

CODE	Measure Name	Measure Description
2.3	Adaptive parking management based on energy efficiency and occupancy	In the demonstration area, a comprehensive road safety study will be carried out, supported by an analysis of previously defined urban parameters and the development of a GIS-based application that collects road safety incidents. The security perceived by citizens will also be analyzed by monitoring the mentions that are expressed by users on social media and other sources of information in text format and which allow the processing of this information for analysis. The GIS tool will also be used to monitor the traffic safety measures included in the SUMP.
2.8	Mobility management strategies for vulnerable groups with a gender approach	Study of mobility and accessibility focused on vulnerable groups (children and elderly), identifying actions through a collaborative process and building upon inputs from recent psychology research. For children's mobility, the methodology will build upon the successful results of the previous project STARS. The actions will be based on the projects implemented in Madrid regarding health and active life for the elderly.
3.3	Open platform for multimodal mobility information and services	Within the package of measures focused on the study of mobility as a service (MaaS), a multimodal platform of services with open data on demand and a consolidated database of public transport services in real time is being created. In addition, an open mobility data portal with multimodal information from different sources (public and private transport, traffic, public bicycles, air quality, etc.) will be created as a basis for the development of new mobility information services and products.
4.1	Innovative and participative approach to traffic safety at neighborhood level	The Municipality of Madrid will design and implement a smart parking management scheme that will be tested in the demonstration area. The system will include the priority for HVOs and clean vehicles, within working hours from Monday to Friday and at no cost for the user.
4.6	Pedestrian friendly public space outside the city Centre	This action will improve conditions for pedestrians in one of car-oriented areas of Villa de Vallecas. The pilot will implement a high quality pedestrian itinerary using physical design measures and new technology tools, and will improve the quality public of space devoted to pedestrian and social life
4.7	Enabling cycling outside the city Centre	Updating of the Bicycle Master Plan 2008-2016, prioritizing the shared use of road space in the demonstration area. Bike ownership will be fostered through the implementation of innovative parking solutions for residents and for users of public transport hubs in the demonstration area. The potential of the Anillo Verde Ciclista (64 km-cycling ring road of cycling infrastructure surrounding the city) to boost cycling mobility in the area will be analyzed, improving its connectivity with the demonstration areas.
5.1	High-level public transport service	The objective is to provide an efficient service to increase the bus patronage in areas that are suffering a lack of high-quality public transport. It will review different solutions for high-level service bus corridor in the laboratory area. One 3-km pilot section will be implemented, as a starting point of a future longer corridor. The construction works will include rearrangement of

CODE	Measure Name	Measure Description
	corridors in peripheral districts	road crossings; parking; signals bus stops, connection with other PT services; etc. Bus lines will operate on the new corridor during the pilot.
5.8	Electric and hybrid buses for public transport	The objective is to provide the best possible service with the cleanest bus fleet in areas that are suffering lack of high-quality PT offer. Service needs will be analyzed to select the best suited electric and/or hybrid bus solution. The new buses will be assigned to serve the pilot PT corridor. Buses performance will be monitored and assessed with a view to feed future renewal plans of the city bus fleet.
6.2	Test fleets, policy incentives and campaigns for the uptake of electric vehicles	The municipality will foster the use of electric vehicles by local companies, working with key agents in pilot projects. Expansion of the electric charging network will also be promoted, including at least 3 new charging points. Performance of electric vehicles in the pilot companies will be assessed, and strategies will be designed to promote a wider uptake of clean vehicles. The municipality and its companies will play an exemplary role through the procurement of electric vehicles in their fleets.
7.1	Consolidation Centre with EVs and local regulations for clean urban freight logistics	This measure will help to taking advantage of new technologies, to better fit the needs of a multiplicity of actors. A deeper understanding of the urban logistics sector will be necessary as a basis. The pilot will include the implementation of regulatory reforms to encourage the use of cleaner delivery vehicles (from offering access privileges in traffic restricted areas, to denying access to certain areas to regular delivery vehicles). A pilot urban consolidation Centre for last mile distribution will be implemented.
7.6	Prototype for an ultra-low emission cargo vehicle	This measure aims at developing a clean cargo prototype adapted to the specific needs of Madrid's urban delivery sector. This prototype will be a 5.5-ton electric vehicle, assisted with a gas generator system for refrigeration. The prototype will be tested under real operation conditions in order to fine-tune its design and performance, and promote the further uptake and commercialization of the improved vehicle by other stakeholders.

The link of the measures to the living lab is very different. Only four measures (measures 2.8, 4.6, 4.7, 5.1) are clearly targeting Vallecas. Another three measures (measures 2.3, 4.1, 5.8), although taking place in the district, have not been tailored specifically for the living lab: they refer to technological innovations, which could be demonstrated in any other part of the city. Finally, four measures are taking place at a city-wide level, with no impact on the living lab (measures 3.3, 6.2, 7.1, 7.6).

The three groups above fits well with a clustering based on the typology sketched in the previous section. The “means cluster” would include measures 2.3, 4.1, and 5.8: all of them are measures of a technological content, aiming at improving the management of existing public policies (parking access control, road safety and public bus emissions); they are likely to be pushed forward mainly by civil servants in charge of the respective technical services, and are not expected to raise a tremendous interest from the side of citizens or decision makers. They are expected to provide incremental improvements, of a medium to long-term range, as the measure is expanded from the demonstration to the whole the city.

The “market” cluster also refers to measures with of a technological content, but providing solutions to be primarily used by private stakeholders. These are technologies mature enough, but needing a favorable environment or context to become fully competitive compared with incumbent solutions. They are keen in getting “incentives” from public authorities, justified by their better environmental performance. This is the case of measures 3.3, 6.2, 7.1, and 7.6.

The “public policy” cluster refers to measures strongly associated to a particular context, and needing strong leadership from local authorities. The need to mobilize a variety of stakeholders, gain sufficient support, and move through administrative procedures poorly fitted to support them. Furthermore, the mobility component within each measure, although central, has to be combined with a variety of other considerations of a social, urban, or economic nature. They can gain a prominent political profile. This is the case of measures 2.8, 4.6, 4.7, and 5.1.

## 5.2. Stakeholders, barriers and drivers within each cluster of measures

The process evaluation undertaken in the 11 project measures, showed strong similarities among the measures within each cluster. The process evaluation followed the methodology developed by Dziekan et al (2013), common to all projects under the CIVITAS initiative.

The process evaluation was undertaken through surveys conducted to the stakeholders that had (or should have) been involved in the design and implementation of each measure. These stakeholders were grouped in seven categories: decision-makers and technicians of the regional government, decision-makers and technicians of the local government, members of the ECCENTRIC team, transport operators, official participatory platforms, civil society, and political parties.

Stakeholders were asked about their own involvement in each measure, in terms of influence and interest. Influence refers to their perceived capacity to shape the final contents of each measure and to facilitate its implementation; interest refers to the relevance they gave to each measure, in accordance with each stakeholder's priorities and agenda. Stakeholders were also asked about their perception of the other stakeholders' interest and influence. Other questions to stakeholders referred to their perceived level of attainment of the expected results and about the barriers and drivers during the design and implementation of the measure.

The preliminary results show that measures under the "means cluster" (measures 2.3, 4.1 and 5.8) mobilized a reduced number of stakeholders: mostly technicians from the municipality and from the project team. The potential final users of these measures were, respectively, employees at the office building where the new parking concept was implemented (the main office of the municipal bus company, EMT), citizens that could be interested in gaining access to the city's information on road accidents, and users of the new hybrid buses. However, these did not prove to be significantly interested in measure implementation for different reasons: in the first case, parking access did not represent a significant change in terms of parking availability; in the second case, the information available was not providing much added value for citizens or social groups compared to conventional sources, and did not facilitate their eventual campaigning for safety improvements; in the third case, users did not appreciate relevant changes in quality compared to the previous buses serving the pilot line. The main barriers identified for the stakeholders interviewed referred to minor planning issues (such as minor difficulties to establish technical specifications), and "organizational" (identifying the adequate service in charge within the municipality, and push the measure through the bureaucratic procedures for procurement and implementation). The main drivers were "financial" (the EU's grant as a big facilitator of measure approval and implementation), and "technological" (interest in testing new technologies). It is worth highlighting that the main difficulties for implementation experienced by measures 2.3 and 5.8 came from what could be categorized as "spatial" barriers: Initially measure 2.3 was planned to be implemented in one of the office buildings of the municipality, but decision makers decided this could be controversial at a time of strong political distress in the city, and the measure was applied in another building. As for measure 5.8, the vehicles were initially expected to serve a line within the living lab, but the bus company (EMT) could not find a way to assign the buses to the depot serving that area, due to their internal rules for vehicle and driver assignment.

Preliminary process evaluation results of measures under the "market cluster" (measures 3.3, 6.2, 7.1 and 7.6) showed a more complex context. In terms of stakeholders, besides technicians from the municipality, the region (public transport authority, CRTM) and the project, a major role was played by decision-makers within private (or eventually public) companies exploiting (now or in future) the technical solutions tested by the measures. The nature of such stakeholders was quite diverse: for measure 3.3, major players would be the providers of mobility information (such as car sharing services, taxis, or private parking managers), and the myriad of companies potentially interested in making use of the open platform to develop new apps; for measure 6.2, private companies with large car fleets in Madrid proved to be crucial for the expansion of the measure beyond the limited realm of municipal fleets. For measure 7.1 and 7.6, the commitment of decision-makers at the participating logistics companies were crucial to undertake the necessary changes for alternative distribution practice with clear environmental benefits, but no obvious economic gains, at least initially. The main barriers identified during the process were "cultural" (difficult to change working practices at both, the municipality and the participating private companies) and "involvement and communication of/with stakeholders" (difficulties of the regional public transport authority, CRTM, as the leader of the open platform in measure 3.3 to effectively communicate and engage small private operators- car sharing, taxi coops...- to share their

information). The main drivers were “political/strategic”: decision makers in private companies eager to be associated with electro-mobility, in measure 6.2 or with “green urban logistics” in measure 7.1 and 7.6.

The map of stakeholders for measures within the last cluster (“public policy cluster”) is significantly more complex. Besides the ones mentioned above, it includes decision makers in public institutions (municipality and regional government, i.e. the public transport authority), and the civil society (mainly within the living lab, and also through some participatory platforms established by the municipality). More interestingly, the influence of technicians clearly decreases compared to measures within the two previous clusters, and decision makers, particularly within the municipality, are perceived as the most influential actors by all other stakeholders. The main barriers identified during the process are “institutional”: administrative structures, procedures, and regulations, which make it difficult to design and implement all the measures in this cluster. This has been the case for measure 2.8, in which apparently simple proposals decided with the elderly within a co-creation design procedure, faced unexpected delays due to the difficulties to identify the right unit within the municipality and the proper budgetary line to implement them. More serious institutional barriers have been faced by measures 4.6 and 4.7, which have not been able to find a viable approval process, and had been to be modified to fit within the bureaucratic machine, losing in the way some of their more disruptive elements, including a strong co-creation process with residents. It was initially thought that the consistency of these measures with the mayor’s vision of a sustainable city and a neighborhood-centered focus on urban regeneration would serve as a strong driver to facilitate the implementation of these measures. However, these expectations did not materialize, partially due to financial constrains (the new mayor inherited a billionaire debt, due to the motorway tunnels built by her predecessor), but more significantly due to the inability to establish appropriate measure management channels within the municipality to sustain robust design processes and to guarantee funding.

### *5.3. Streamlining the implementation of sustainable mobility measures*

The results of the process evaluation suggest a different strategy to streamline the implementation of sustainable of mobility measures. Streamlining seems feasible with minor changes in the case of measures within the “means cluster”. In this case, the barriers may refer to the “planning”, “organizational”, “financial”, “technological” and “spatial” fields, and can be addressed through minor reforms within existing structures and procedures. These are the recommendations usually found at the termination of demonstration projects. They typically call for dedicated structures within institutions to deal with innovation (through autonomous agencies, horizontal services or other solutions), to earmark resources encouraging services to innovate in order to gain access to these additional funds (the approach followed by the CIVITAS initiative and by similar programs at the national level or even within municipalities), or to strengthen the relationship with the research community (as in May, 2015). Recommendations may also include a call to better-tailored measures to specific spatial contexts, through more ambitious participatory and co-creation processes, participatory budgeting and other actions.

The recommendations above are generally insufficient to deal with the barriers implementation process face in the case of measures within the “market cluster”. To be successful, these measure require to put in the market competitive alternatives to the existent options, to reach final users, and to get the support of committed private or public stakeholders eager to take these innovations to the market and make them widely available. Much has been discussed in terms of how public action can speed up the access to market of innovative technological solutions: financial support and incentives during the deployment stage, supportive regulatory frameworks, public stakeholders as early adopters, risk-sharing between the public and the private sectors... The experience from the ECCENTRIC project in Madrid merely confirms these recommendations, and the difficulties (balanced by the significant potential) to establish the appropriate cooperation framework that can lead to successful implementation.

The recommendations above are scarcely useful for the implementation of measures within the “public policy cluster”. The difficulties for implementation of these measures primarily rely neither in rigid, inappropriate or underfunded public bureaucracies nor in the reluctant involvement of private partners. They face a more substantial obstacle: a public policy model that cannot accommodate such measures. Public policies, including urban mobility policies, remain dominated by the values of responsibility and efficiency. Public bureaucracies select measures on the basis of their efficiency (e.g. cost compared to benefits or targets achieved), and public action is justified by its ability to empower users to choose alternative options to the undesirable ones. Sustainable mobility measures under this

cluster do not fit with this paradigm: their impact is of a long-term nature, and it is spread over a wider range of fields. Consider, for example, a measure to improve the quality of pedestrian networks in a neighborhood, such as ECCENTRIC measure 4.6. If successful, it can modify travel patterns, increasing short-distance trips and changing modal split, but these impacts will affect people's behavior and become significant only in the long-term; furthermore, their main impacts may be of a completely different nature, for example, increasing livability and social bonds within the neighborhood, or be of a character more doubtful to be valued, like increasing real estate prices and displacing low-income residents and small businesses. This does not mean that we should oversize our repertoire of indicators; on the contrary, it will probably be wiser to move away from the efficiency approach to a more nuanced monitoring and assessment framework.

Measures within the “public policy cluster” are consistent with a long-term vision of the city, which includes but is not limited to mobility issues. They contribute to create the conditions in which alternative behavior is not only possible, but is actively supported by public institutions. They do not primarily attempt to provide alternatives to users, but rather to empower citizens to gain ownership of their physical and political environments, by creating the conditions to increase social bonds, and to access to the public sphere regardless of the particular personal circumstances. They cannot really be legitimized by their ability to increase the options to people, so that they can responsibly make sustainable choices; on the contrary, they are legitimized on the basis of solidarity: they provide more balanced conditions to all, decreasing inequalities. Their impact evaluation could be assessed, if necessary, not in terms of efficiency, but in terms of their effectiveness in improving social equity. As it is well known (e.g. Nagel, 1986), the cost of these measures increases with the ambition in terms of solidarity.

These measures are not likely to be successfully implemented within a mobility project framework, like the ones promoted by CIVITAS. They need to be embedded within urban policies based on the principles of solidarity and effectiveness, which are occasionally promoted by local leaders in some cities to address major city challenges. It is only in a context of transformative change that mobility measures can yield the expected results in terms of sustainability.

This is not to say that these measures cannot be implemented autonomously. In fact, this is the way many cities are dealing with pedestrian areas, bike expansion or children, elderly and other social groups' mobility. The point is that (1) the implementation of these measures remains, at best, at the fringes of the local bureaucracy, requires enormous resources and political leadership to move forward, and cannot be streamlined within the municipality, and (2) that the impacts of these measures remain uncertain, sometimes generating gentrification and displacements, or increasing motorized mobility elsewhere in the city.

The living-lab approach is consistent with a vision of public policies from the values of solidarity, effectiveness and equity. It offers an opportunity to build up a shared and integrated vision among stakeholders, and to gain their involvement. But a living-lab approach cannot be narrowly limited to mobility issues. With its sectoral approach to urban mobility, the CIVITAS initiative (in the case of Madrid and, probably, in most of the participating cities) is successfully developing more favorable institutional and regulatory environments for the implementation of technological innovation in cities. This is positive for the implementation of measures within the “means” and “market” clusters. But it cannot successfully support the implementation of measures for which changes in policies are necessary. For doing so, it would be necessary to get out of the “mobility bubble” and reach out to broader urban policies based, not based solely on the values of responsibility and efficiency.

There have been attempts to provide a wider basis to urban mobility actions. The most relevant one has been the development of Sustainable Urban Mobility Plans (SUMP). SUMP integrates as essential principles those of stakeholder participation, clear setting of objectives and transparent and accountable implementation. Regrettably, they pay too much attention to the values of efficiency, and keep looking to people more as responsible users than as engaged citizens. Under SUMP, many cities have identified measures of a “public policy” nature, but they have faced enormous difficulties to implement them and, when implemented, the impact of these measures in terms of equity and solidarity have been uncertain (Schwedes et al, 2017).

## 6. Conclusions

The implementation of innovative mobility measures in cities is jeopardized by a multiplicity of barriers. The approach followed by demonstration programs like CIVITAS is inspired by the actions usually taken to bring innovations to markets: identification of existing barriers and search of ways to overcome them through a mix of public financial and regulatory support and consumers' awareness.

This approach may be adequate for measures of a technological content, but do not deliver the expected results in the case of measures of a more complex nature, which need a public policy framework consistent with the values of solidarity implicit in most of them. Furthermore, these measures do not seem to be successfully implemented from a sectoral policy: they need to be embedded within broader policies including the social and spatial dimensions they are related to. One of the reason of the difficulties for such approach is the prevalence of a conservative culture in public policy, in which values such as individual responsibility or efficiency have gained prevalence in the last 40 years, at the expense of the traditional values of solidarity, effectiveness and equity.

Evidence from the measures of a particular CIVITAS project, ECCENTRIC, in Madrid illustrates the insufficiency of an approach to the implementation of innovation in urban mobility from such a sectoral perspective. The sectoral perspective of CIVITAS is useful to streamline the implementation of some measures, but insufficient to push forward those measures requiring changes in urban public policies.

All innovative measures require substantial time and resources to be implemented, sometimes demanding additional efforts from local civil servants, with hardly any rewards. This is an often forgotten organizational barrier to implementation that can be easily addressed if cities increase the support provided to them; this support, currently limited mostly to technical assistance, could be better managed through adequate project management structures within the municipality. In fact, some European cities have created agencies or other structures with this purpose.

Planning barriers are also common to the implementation process in all measures. Many cities have rigid planning processes, poorly suited to deal with innovation, or hardly formalized procedures, which makes it difficult to define in advance the roadmap towards implementation. In the last decade, Sustainable Urban Mobility Plans have become increasingly popular among European cities, but they do not serve to establish adequate channels to implement non-conventional measures, of an innovative character. Furthermore, the lack of formalization of planning practice in cities (with the exception of zoning and land use plans) is not favoring the development of a strong civil society. There is a need of a clear regulatory framework for the development of such plans, in order to articulate the dialog between professionals, decision makers and the civil society. This would contribute of the need that public policies have to provide an account of the past, the present and the future (Wolff, 2012 or 2015).

The consequence of this lack of formalization is that the implementation path for innovative measures is created "as the measure goes". This requires considerable efforts, and strong support from decision-makers at the top of the municipal bureaucracy, and many times in spite of this support, the strong routines within the administration can make it very difficult to reach the demonstration stage of an innovative measure.

Citizens' involvement is strongly pursued in the CIVITAS initiative, and included in all innovative measures. Ironically, it seems that the actual implementation and even acceptance and satisfaction from users of many innovative measures is not clearly linked to a higher degree of public participation. This situation indicates how difficult the actual involvement of citizens is in practice, but it should not be taken as a justification to weaken the participation effort. Successful or not, measures implemented with poor public discussion respond to a context in which city dwellers are treated more as "users/consumers" than as "citizens". As long as innovative measures aim at creating a different culture in cities, with stronger and more accountable governance, as CIVITAS claims, implementation without participation is further consolidating the very same passive attitudes that jeopardize the attainment of sustainable mobility objectives. In some cases, poor participation may reflect the fact that mobility issues are not a priority for citizens, or that the innovative solutions under discussion are not appreciated by citizens for different reasons, such as the fact that their mobility priorities are far away from the issues addressed by these measures. In this case, poor participation should serve to revise the research and innovation agenda cities are pursuing, with the support of national governments and EU institutions, in order to narrow the gap between the innovation agenda and actual people's priorities, especially those of vulnerable groups. Critical circumstances, like the recent economic crises, are likely to have further widened the gap between the innovation agenda and many citizens' needs.

Design and implementation of innovative measures is also jeopardized by a pervasive ambiguity towards car use. Although a general objective in virtually all measures is the reduction of car use by other transport modes, measures are rarely backed by actual supporting actions restraining car use. In spite of overwhelming evidence, the design of measures remains dominated by the pious thinking that improved conditions in other transport modes do serve to attract car users on the basis of their personal responsibility and awareness. This is a well-known area desperately in need of bolder action.

Those measures with a strong market focus heavily rely on the contributions of the private partners. Their commitment with measure implementation is in many cases volatile, as other opportunities emerge or unexpected barriers pop up. In some cases, (particularly when their financial muscle is weak), they look for immediate benefits, and try to shape the measure to short-term goals, losing the long-term picture. The ability of public stakeholders to gain more robust commitment from private partners through public incentives or promises for regulatory reforms may be effective, but only in very specific cases, in which the measure is well aligned with the short-term interests of these stakeholders.

Ironically, those measures with a public policy focus can face significant difficulties for implementation in a context of political reform pushing for more participatory decision-making processes. Innovative measures need detailed explanation and discussion with those participating in open decision-making processes, and can be beaten by conventional measures more familiar to them. As some municipalities are introducing and expanding co-creation design, participatory budget and other channels to wider citizens' involvement, additional efforts are necessary for innovative measures to reach as wider audience and to focus discussions on long-term outcomes rather than short-term outputs. Furthermore, measures targeting particular social groups (including vulnerable ones) need to build up wider coalitions well beyond the usually small group of direct beneficiaries, so that they can gain the necessary support to be approved through the participatory process. The bottom line is the fact that the expansion of budget participatory processes should be coupled with a stronger focus on the values of solidarity and effectiveness in social policies; otherwise, these processes risk to reinforce the position of already socially dominant groups and elites.

In many local governments, decision-making has become more centralized and top-down in the last years. The traditional way urban mobility innovation expanded in the past in Europe relied heavily on exchanges of information within informal networks of practitioners and transferability (Rommerts 2012), but this way becomes hardly effective with strongly centralized local bureaucracies. Within a centralized and top-down environment, it can be claimed that there the strategic vision of the bunch of key decision makers at the top becomes decisive, and innovations will be relevant to the extent they can prove their contribution to such visions. An example of the current relevance of strategic visions in cities is the influence of newly created networks of political leaders, such as the EU Covenant of Mayors or, at a more modest scale, the CIVITAS Policy Advisory group: in both cases, there is an attempt to get mayors (and their closest advisors) as vectors of innovation.

All measures need to follow various internal approval procedures for approval, assignment of resources, procurement or building permits, etc. These procedures are streamlined to get conventional actions accomplished, but are poorly suited to deal with innovation. In the case of measures with a public policy profile, standard procedures can delay and even stall implementation. Furthermore, decision-making is difficult for these measures, as many different services may claim to be competent. Experience shows how in many cases there is a need for direct intervention from top local decision makers to overcome these administrative barriers, but this cannot become normal practice. In many cases, those in charge of measure implementation prefer to reshape these measures, so that they lose their initial strategic and wide scope, and emphasize their non-controversial, technological aspects. In this way, they are transformed into “means” or “market” measures, losing their transformative potential and innovative interest. In order to keep the original ambition of innovation, there is a need for reforms in the decision making processes within municipalities, establishing ad hoc procedures that can properly deal with innovation.

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