

# Citizen Participation through Digital Platforms: the Challenging Question of Data Processing for Cities

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**Abstract**—This paper focuses on digital platforms supporting citizen participation in the era of Smart Cities. Our study presents and analyses two examples of online participation platforms, implemented by two Walloon cities: Mons and Liège (Belgium). These two cases highlight the differences and the similarities between both cities’ interpretation of digital participation, as well as the difficulties they faced, especially considering the data processing by city officials. In light of the challenges observed through those two cases, we suggest that digital platforms might potentially be misused, and somehow bias the whole digital participatory process. We therefore issue recommendations about how to design, launch and manage such platforms and, moreover, suggest that platforms should be supplemented by other digital or traditional participatory processes in order to reach higher levels of participation.

**Keywords**—citizen participation; digital platform; data processing; Smart City; Belgium.

## I. INTRODUCTION

Facing demographic and environmental issues [1], many cities worldwide are looking for a new urban ideal and are moving towards a development strategy based on the Smart City concepts [2]. This “smart” phenomenon gives rise to citizens’ participation, which is a crucial dimension to ensure social sustainability of Smart Cities [3]. Cities consequently face the challenge of organizing such participation as efficiently as possible, which in turn leads to the proliferation of digital platforms for citizen participation. This research aims at studying those popular digital platforms, through the analysis and the comparison of two platforms implemented in two Belgian cities, namely Mons and Liège. How are such digital platforms administered and exploited? What are the assets and the limits of those platforms? How could such digital participatory process be enhanced?

This paper is structured in four additional sections. Section II provides a short literature review about the emergence of citizen participation as a key aspect of the Smart City and summarizes new interpretations of participatory processes in the digital era, including digital platforms. Section III then gives a global overview of both Walloon platforms, while Section IV delves into the results of the two initiatives. Our methodology is briefly mentioned in Subsection A, followed by our analysis of both platforms regarding the topics (Subsection B), the “likes” (Subsection

C) and the priority actions (Subsection D) as implemented by one of the two cities. Finally, Section V focuses on the main limits of both digital platforms and provides recommendations to improve such participatory process.

## II. STATE OF THE ART

Citizen participation has always been an important part of urban governance, this concept being inextricably and intrinsically linked to the very essence of democracy [4]. Participation of the civic society is therefore much older than would appear at first sight, considering that the appeal for participatory action dates back to the events of May 1968 [5]. Since then, recurrent limits (regarding “true” participation) have been continuously reported in the state of the art, and among them tokenism has been considered as one of the main risks for participation, i.e., symbolically hearing the citizens’ voice rather than concretely taking their comments into account or giving them real decision power [6]. Over the past 50 years, the public participation has grown in popularity and citizens are nowadays more and more empowered to take part in decision-making processes in their city, especially regarding current issues, such as environmental and technological developments [7]. Whilst designers and architects integrate their users’ needs and ideas through co-design processes [8], policy makers gradually realize the importance of involving residents in participatory processes in order to collect their citizen expertise, i.e., an intertwined body of knowledge built on their past experiences, local perceptions and field understanding [9].

In the Smart City context, this collective intelligence is now recognized as the main source of smartness, ex-aequo with digital technologies [1]. Until recently, Smart Cities lacked citizen perspective and were essentially focused on the introduction of new technologies [10][11]. This technocentric approach has the disadvantage to impose solutions to the city users, without knowing if those users really want or need them, and thus without ensuring that they will eventually use them [3]. Consequently, citizens have recently been more and more considered as key stakeholders regarding the overall success or failure of the Smart City, since they can choose to accept or reject smart solutions and technologies [10]. The sustainability of the global smart model thus relies on the active involvement of the residents, through citizen participation and co-design processes [3].

Considering the current digital era, enthusiasm for participation has been growing higher than ever and several tools have been developed to collect citizens' point of view. Along with traditional methods (e.g., surveys, panel discussions, advisory boards, workshops, etc.), new forms of digital participation have consequently emerged in the Smart City context. Based on Arnstein's eight-level ladder of citizen participation [6], Douay proposes a classification of those emerging digital participatory processes according to citizens' decision power (see Table 1 below) [12]. This renewed ladder of participation shows that, according to this author, the digital era has not changed the types and levels of participation, but rather offers new and dematerialized tools to achieve them. According to the literature, Douay's model could be complemented by several other examples of digital participatory modes. For instance, sensors and wearables collect information from a large number of people, sometimes unwittingly, and the aggregated data reveals trends and patterns attesting to habits and lifestyles [13]. In the same vein, big data can also be generated from smartphone applications through which citizens can share real-time, geolocated information with the community and the municipality [14]. Additionally, one has to observe that Douay's ladder does not yet include digital platforms for citizen participation. Often assimilated to online suggestion boxes, those platforms become a place to submit ideas for one's city and to vote for the ideas that should take precedence, according to the voters' points of view, and therefore be implemented through concrete projects or policies [1]. In that regard, those platforms enable active, bottom-up involvement of citizens.

TABLE I. LADDER OF PARTICIPATION ADAPTED TO DIGITAL PROCESSES [12]

	Participation type	Activities	Platform examples
Co-decision	Deliberation	Debates and votes	DemocracyOS
	Co-decision	Law or program design	Consultation on the bill for a digital Republic
Contribution	Co-design	Collaborative design of digitals platforms	Hackathons
	Partnership	Co-construction of programs and decision sharing	participatory budget
Civic dialogue	Consultation	Survey	Online votes
	Communication	Dialogue by message exchange	Chat, Hangout
Information	Information 2.0	Top-down communication with the possibility of commenting or reacting (like)	Social networks
	Information 1.0	Top-down information without the possibility of communication	Newsletter

In 2016, the French Digital Secretariat of State has developed a classification of "Civic Technology", based on the Knight Foundation [15] and adjusted to the French context. This classification is divided into "technology for democracy" or "Gov Tech", and "technology for civic engagement" or "Civic Tech". On the one hand, Gov Tech are top-down tools which aim to improve public services and democratic practices (e.g., public spaces reporting tools). Civic Tech, on the other hand, are bottom-up tools, aiming to improve civic engagement of citizens (e.g., participatory budgets). In this classification, platforms of citizen participation are located at the intersection of the two categories. They indeed meet cities' interest in collecting citizens' opinions in a convenient way, while encouraging citizens to get involved in the development of their city [16].

In the European context, these platforms seem to grow as the most popular form of digital participation as many cities use them to reach citizens' views and local concerns [17][18]. Wallonia is no exception: since 2017 cities such as Mons and Liège (among others) launched their first digital platforms for citizen participation. How were both processes organized? What were the results? Where do those platforms rank in the renewed ladder of citizen participation? Are these platforms used as Gov Tech and/or Civic Tech tools?

### III. PRESENTATION OF THE STUDIED PLATFORMS

Respectively called "Demain, Mons" and "Réinventons Liège", the two Walloon initiatives appear similar in many ways, since both platforms are supplied by the same company, CitizenLab. However, they have been customized for each city, implemented independently, and several discrepancies are observed between the two processes. Table II presents a comparison of both platforms and emphasizes their commonalities and differences, often stemming from the choices of the municipality.

As far as the monitoring of the project is concerned, a major difference exists between the two cases. The city of Liège has published the results of the platform in November 2017, and it is not yet the case in Mons, since the project has been put on hold around municipal elections in October 2018. One has to observe that CitizenLab, the provider of the two platforms, did not offer data analysis services in 2017. Both cities received the data in Excel format and had to analyze it. This is a real challenge for cities not used to deal with big data, and might partly explain why Mons at the present time still experiences some difficulties in pursuing with concrete proposals.

### IV. RESULTS

#### A. Methodology

We collected the ideas and votes of both platforms in Excel format. The city of Mons directly transmitted the data to us, but in order to protect citizens' personal data, they only sent us the content visible on the platform.

TABLE II. COMPARISON OF “DEMAIN MONS” AND “RÉINVENTONS LIÈGE”.

Context	City	Mons 95 000 inhabitants	Liège 196 000 inhabitants
	Platform name	“Demain, Mons” = “Mons Tomorrow”	“Réinventons Liège” = “Let’s reinvent Liège”
Timing	Process	One single phase: idea submission and vote at the same time	3 phases: (1) Idea submission (2) Vote (3) Analysis by the city and communication of the results
	Duration	9 months from May 2017 to January 2018	8.5 months from March to November 2017
Information	Communi-cation	- Municipal newspaper - 21 meetings between citizens and the municipal council, in different neighborhoods	- Municipal newspaper - 2 info sessions for the students of the University of Liège
	Inspiration	- weekly email with newly submitted ideas - 22 ideas submitted by the city	- 5 thematic conferences - 20 first ideas submitted by the city
	Updates	Reminder emails	Reminder emails, promotional videos and Facebook posts
Idea submission	Participatory modes	- online platform - paper form to send - 5 thematic workshops	- online platform - 5 workshops with neighborhood committees
	Number of topics	12 topics: multiple choices are allowed	5 (then 7) topics: only one topic per idea
	Number of ideas	909 ideas, including 113 via paper form put online by the city for vote	983 ideas
	Number of ideas’ authors	286 online, unknown for paper form	353
Idea selection	Number of votes	9,960 votes 8,336 likes 1,624 dislikes	94,688 votes 84,130 likes 10,558 dislikes
	Results	No official analysis nor communication of results	77 priority actions

In Liège, we manually collected the data directly from the platform, but since November 2018 the city has made them available on its open data platform [19]. In both cities, we therefore received no access to the personal data of the contributors (age, living place, number of votes, etc.) nor the number or duration of citizens’ connections and so on. As a result, our study focuses on the citizens’ ideas and on the cities’ data management and processing. More specifically, our research is not intended to be an exhaustive analysis of both platforms, but rather focuses on the challenges encountered by both cities in terms of data processing. In further research, our analysis should be complemented by a study of participants: profiles, representativeness, digital divide, pressure groups, etc.

In order to gain a better understanding of the challenges encountered through data processing, we conducted 3 semi-structured interviews: the first one with the Mons Smart City Manager, the second one with the Mons Communication Manager, and the third with the CitizenLab Director of Francophone Markets. In Liège, we were offered no opportunity to meet any of the city representatives

despite our repeated solicitations. We also attended several presentations by CitizenLab during 2018, when they were developing a data analysis method with “Demain, Mons” as an example.

Moreover, in order to be able to conduct critical review of the data processing as managed by the cities, we made our own qualitative and quantitative analysis of the data. The first step of our data analysis consisted in reviewing the whole set of ideas in order to check the number of suggestions associated with each predefined topic. We also checked the consistency between the detailed description of those ideas and the topic chosen by the participants or the city. Beyond the number of ideas, we also studied the allocated number of likes and dislikes, as a supposed marker of popularity for the ideas. However, those figures reveal to be insufficient to get a global overview of the citizens’ proposals, which content and keywords are also important. Therefore, we additionally conducted a more micro perspective analysis and developed a tree-like structure of the submitted ideas, which are organized by thematic clusters.

### B. Analysis of the predefined topics

In Mons, when a citizen suggested an idea, he/she had to link it to one or more topics among the 12 predefined ones, namely: Mobility; Urbanism and heritage; Social cohesion; Culture and tourism; Sustainable development; Employment, economy and trade; Cleanliness; Security; Education and training; Sport and associative life; Local governance; Housing. In Liège, 5 topics were proposed to citizens during the ideas’ submission phase: Energy transition; Social inclusion; Citizen participation; Collaborative practices and creative approaches; Digital revolution. We observe a difference between the two cities: the topics in Mons are more precise and focused on citizens’ day-to-day lives whereas in Liège they are broader and more theoretical. These choices of topics reflect local political projects, and this way guide and may restrict citizens’ proposals. Our analysis of the data reveals some ideas off topics but still relevant for the city. It shows that citizens use the platforms to express themselves, even though their ideas deviate from the topics chosen by the city.

In Mons, in order to process the collected data, the city decided to associate a unique topic to each proposal. The goal was, according to the interviewed city representatives, to avoid duplicates and to be able to transmit each idea to the aldermen and to the concerned technical services for an expert opinion. The possibility for citizens to choose several topics made this selection step complex, particularly because many proposals pointed to several subjects (e.g., “redevelop a green space and create a parking relay”). As we compare the multiple topics chosen by the citizens and the unique ones later defined by the city agents (see Figure 1), we observe that several topics appear popular (for instance “social cohesion” and “sustainable development”)

as they are retained for many proposals, but yet being the main subject for only 30% of the original ideas.

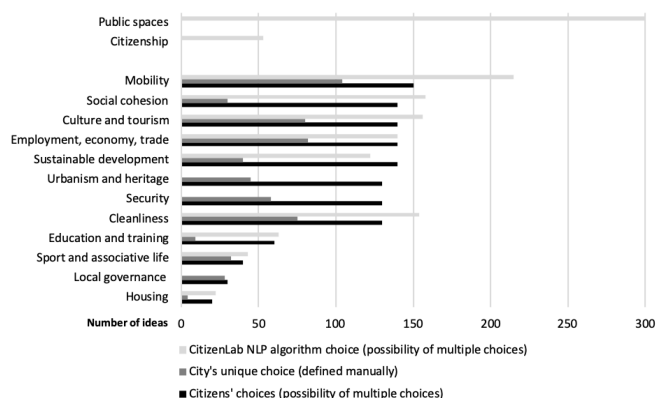


Figure 1. Topics comparison for “Demain, Mons”

We also compared these topics to those proposed by CitizenLab, the platform provider, obtained through their Natural Language Processing (NLP) algorithm. This algorithm analyses the content of the proposals, gathers similar ideas and extracts keywords. The operating details are a trade secret closely guarded by CitizenLab. Some of the main keywords highlighted by the algorithm are identical to the platform’s topics. But interestingly, the algorithm did not keep three topics (i.e., Security, Urbanism and heritage, Local governance) and created two (Public spaces and Citizenship). Yet, “Citizenship” appears only once in the 909 citizens’ text ideas, which are therefore somehow interpreted by the algorithm. Without transparency on the method or open source software, how to be sure that the results reflect citizen ideas? Moreover, the “Public spaces” topic includes the largest number of proposals according to the algorithm, ranking first in front of the “Mobility” topic that was #1 in citizen and city rankings. This is not surprising knowing that “Public spaces” is an inclusive notion concerning every city. Indeed, cycle paths, waste management or car parks can be linked to public spaces. The negative aspect of such a broad topic is its low operationality: it requires skills spread across many technical city services to be realized and it is redundant with topics such as mobility, security, cleanliness, etc. Thus, the predefined topics should remain as precise as possible, or at least correspond to the same level of detail in order to avoid overlaps between topics.

In Liège, of the process the city, has modified some predefined topics and reorganized the classification of citizens’ proposals. These successive changes are shown in Table 3. We observe that the topics were strongly modified after the ideas deposit phase. Three out of five topics have been merged (to become a single “Participative, collaborative and digital city” concept), while five completely new topics appeared, more focused on their terminology and urban-planning oriented. Moreover, the creation of the topic “unclassifiable” is a recognition of

citizens proposals that fall outside any predefined scopes. However, none of these 57 “unclassifiable” ideas is part of the 77 priority actions to be carried out. Thus, the topics’ reorganization after the ideas generation phase and before the voting phase is a function of many parameters: citizen’ ideas of course, but also, and perhaps more surprisingly, general city policy.

Moreover, after the voting phase and before the presentation of the results, two topics were again modified without any impact on the ideas distribution. “Green spaces, greening, urban agriculture” has become “Greening and urban agriculture” and “Equip, plan and embellish the city” was modified into “Green, collective and peaceful areas”. From a technical point of view, one could wonder: how did “green spaces” change from one topic to another without impacting the ideas classification? And, from a semantic point of view: why choose to separate “green spaces” from “greening”, but to associate them with “collective” and “peaceful” spaces? Despite a greener coloration, the topic “Green, collective and peaceful areas” grows closer to the idea of “public space” put forward in Mons by CitizenLab’s NLP algorithm. As for Mons, we observe that this large topic lumps together a variety of sub-questions, which raises again the challenge of low operationality. In that regard, one would wonder why any city would want to bring out the issue of public (green, collective and peaceful) spaces as the main topic. We interpret this as a purely political choice.

To conclude, our study of the topics shows that the choice of topic title can create big variations in the obtained results. To promote objectivity in the presentation of the results, an a priori scientific reflection on the naming of the topics therefore seems essential. In addition, transparency regarding the designation of topics and their modification during the process can avoid accusations of civic washing.

TABLE III. EVOLUTION OF THE TOPICS THROUGH EACH SUCCESSIVE PHASE IN LIÈGE.

Phase 1 Ideas	Phase 2 Votes	Phase 3 Results	Submitted ideas	Selected ideas
Energy transition			30	11
Social inclusion			47	12
Citizen participation	Participative, collaborative and digital city		154	10
Collaborative practices and creative approaches				
Digital revolution				
	Green spaces, greening, urban agriculture	Greening and urban agriculture	110	14
	Equip, plan and embellish the city	Green, collective and peaceful areas	287	11
	Mobility		180	9
	Art, culture, heritage, tourism		118	10
	Unclassifiable		57	0
<b>TOTAL</b>			<b>983</b>	<b>77</b>

### C. Analysis of the “likes” and “dislikes”

The voters had the opportunity to “like” the ideas that they wanted to see implemented, but also to “dislike” some in order to demonstrate their rejection against some proposals. Analyzing the “likes” and “dislikes”, a large discrepancy is observed between the two platforms: there are almost 10 times fewer votes in Mons (around 10,000) than in Liège (around 100,000), while it has been possible to vote for 9 months in Mons and only for one month in Liège. In Liège, the voting phase took place distinctively after the submission phase, while these two phases were concomitant in Mons. Thereby, Liège did two distinct communication campaigns (about ideas submission then about votes), while in Mons, communication was all along centered on ideas submission. We suggest the discrepancy is a consequence of the temporal organization of each process, but is also probably linked to the potential number of voters (around 200,000 inhabitants in Liège; less than 100,000 in Mons).

In Mons, out of 910 proposals, only 360 received more than 5 cumulative likes, and only 15 proposals (i.e., 1.6%) got more than 50. The “cumulative likes” here corresponds to the total number of votes, each “dislike” subtracting one point from the total number of “likes”, each counting for one point. In Liège, 882/983 proposals received more than 5 cumulative likes, and 514 ideas (i.e., 52%) obtained more than 50. Therefore, the study of “likes” as a legitimization marker of ideas has limited interest for “Demain, Mons” but more meaning for “Réinventons Liège”.

To deepen our analysis, we compared the likes to the number of propositions on the same topic. For “Réinventons Liège”, as shown in Table 4 below, this radically changes the ranking. In terms of the number of proposals, the category “Green spaces, collective spaces, peaceful spaces” gathers twice as many proposals as other topics. When we look at the cumulative number of likes, yet, the mobility category becomes the priority concern of citizens, with twice as much likes as the second topic. Finally, when we look at the ratio of likes to the number of proposals, it is the “Energy transition” topic that becomes the main concern, with a ratio 40% higher than the second topic.

TABLE IV. COMPARISON OF LIKES AND NUMBER OF IDEAS BY TOPICS FOR “REINVENTONS LIÈGE”.

Liège/ topics	Number of ideas	Cumulative likes	Ratio likes/ideas
Green, collective and peaceful areas	287	12664 (#3)	44 (#7)
Mobility	180	26446 (#1)	136 (#2)
Participative, collaborative and digital city	154	7760 (#5)	57 (#6)
Art, culture, heritage, tourism	118	10073 (#4)	85 (#5)
Greening and urban agriculture	110	13497 (#2)	126 (#3)
Social inclusion	47	4781 (#7)	106 (#4)
Energy transition	30	6025 (#6)	194 (#1)

In that regard, one would wonder which ranking best reflects the citizens’ expectations. Our hypothesis is that too many similar proposals lead to the distribution of votes, and as a consequence generate a bias effect in terms of (variety of possible) ranking. To improve the process, it would be interesting for a citizen to be informed of the existence of

proposals close to his/her own idea, in order to avoid creating duplicates. Then, before the voting phase, the platform could submit to the citizens an aggregated version of similar ideas, in order to avoid scattering the votes. A smaller number of proposals could also allow each citizen to browse through all the proposals, which was almost impossible to proceed with considering the 1000 proposals of “Demain, Mons” and “Réinventons Liège”.

### D. Analysis of the priority actions

The city of Liège was the only one to go through the whole process and to identify 77 priority actions. Those priority actions have been selected out from every topic, except from the “unclassifiable” one. None of these 57 “out of the box” ideas have indeed been kept as priority actions. Considering the twenty-first ideas submitted by the city, nineteen of them have become priority actions. This pseudo success may reflect two phenomena. On the one hand, the twenty ideas supposed to encourage and inspire participants were projected actions that would probably have been implemented even without the digital platform and the citizen participation. Indeed, those ideas are not necessarily the ones with the highest like-scores: only three of them are in the top 77, but almost all of them will be realized. Furthermore, there is even one proposal that got more “dislikes” than “likes” but still remains a priority action. On the other hand, those twenty ideas impacted the next proposals, which are sometimes similar or even duplicates. Therefore, the number of cumulative “likes” increased and enabled some ideas submitted by the city to rank higher. In addition, even if it was not intended, the first twenty proposals might have put on blinders rather than opened the discussion with the participants, which have certainly been influenced by the twenty-first interpretations of the five imposed topics. This snowball effect testifies either to the importance and the interest related to those ideas apparently reflecting actual citizens’ concerns, or to the potential misuse of those digital platforms in a manipulative way.

Moreover, when comes time to determine the priority actions, logic would dictate to select the ideas with the highest number of votes and to transform them into concrete projects. However, considering the dilution effect of the votes between several similar or even identical ideas, this obvious choice would not exactly reflect the citizens’ voice. Therefore, in order to rank the submitted ideas (and their associated votes) in a clearer way, we established our own thematic clusters by gathering ideas in subtopics (sometimes associating close, or identical ideas), then organizing them in a tree-like structure and thickening the branches according to the associated cumulative number of likes. At the end of every branch, we also noted the identification code of each related idea in order to ease going back to the full descriptions when needed. Figure 2 is an example of a tree-like structure for the Liège platform, which more precisely structures the ideas generated in regard of the most popular topic, i.e., “Green, collective and peaceful areas”. For reasons of scale and readability, we simplify this tree by indicating here the number of ideas for each subtopic rather than the identification codes of all corresponding projects.

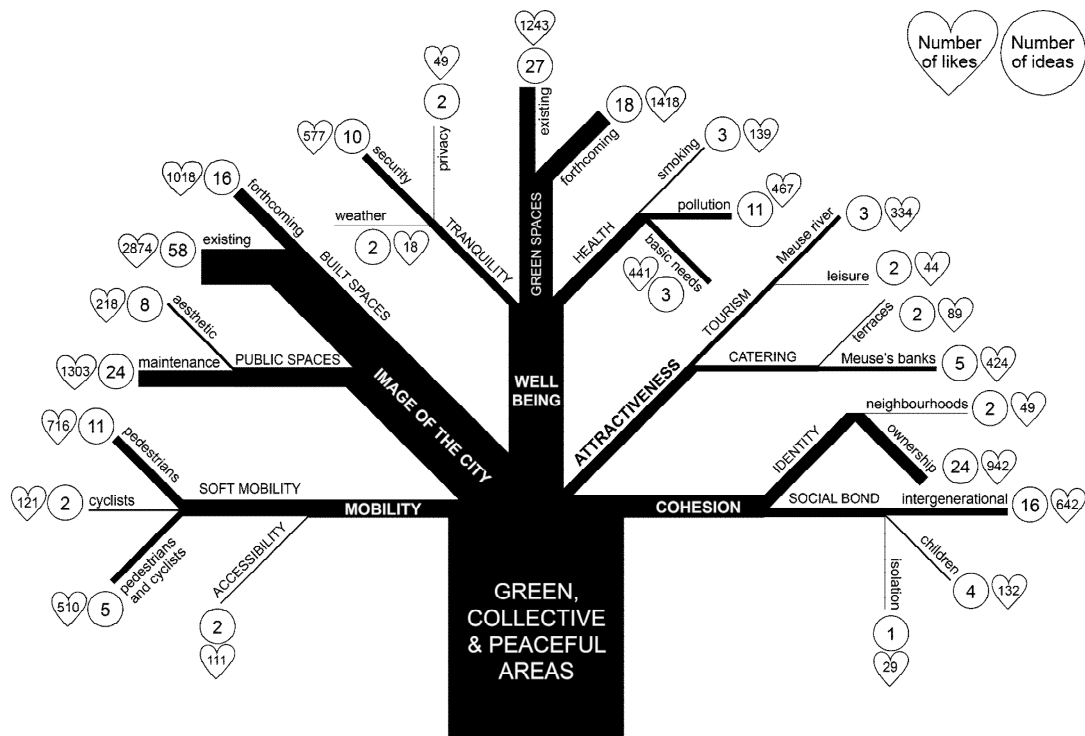


Figure 2. Tree of ideas for the Liège's topic "Green, collective and peaceful areas".

We suggest using the resulting visual map as a decision-support tool, revealing the sub-thematic nodes with the highest citizen interest, i.e., a relative huge number of combined likes and/or proposals that are assimilable and consistent with each other. This could help merging the closest ideas and creating more precise subtopics, which would in turn be useful to navigate on the platform.

### V. CONCLUSION

Our analysis of the data generated through two participative platforms, as well as the analysis of the data processing conducted by both cities, highlight several challenges and paths for future improvements. Our analysis of the topics (subsection IV B) underlines the importance of defining clear and distinct topics, as well as transparency regarding their selection and modifications during the process. Our analysis of the likes (subsection IV C) suggests merging and co-managing similar ideas, in order to decrease the risk of scattering the votes and to ease the global visualization of the ongoing process. To achieve that goal, each proposal must contain only one idea, and keywords can be defined by the citizens in order to facilitate the search for similar ideas and allow to summarize and clarify each idea. Another possibility is to limit the number of characters, like on Twitter, which would reduce the risk to receive ideas spanning over multiple topics, but would also considerably impoverish the qualitative understanding of each idea. Concerning the voting phase, our analysis suggests that citizens invest themselves more when this phase takes place after the idea submission phase. Then, our analysis of the priority actions (subsection IV D) shows the necessity of

making qualitative content analysis in addition to votes. If an algorithm is used, open source software is a first step towards transparency of the process. Thus, it is essential to think about data processing before creating the platform.

For Mons and Liège, these first attempts of citizen participation platforms served as "digital ideas boxes". In Liège, it seems that the tool has been oriented to legitimize actions previously envisioned by the city. In Mons, it seems it mainly helped to adapt the electoral program for the municipal elections, the decision makers currently trying to transform the consultation into concrete actions. We therefore classify the two platforms as Gov Tech and Citizen consultation tools. According to Arnstein's ladder, consultation is part of symbolic participation because citizens don't get a decision power [6], although one might argue that it depends on how the decision makers eventually use the collected feedback. To achieve this goal in a more participative way, it would be interesting to associate platforms with a participatory budget for instance. The proposals receiving the most votes (considering the previously stated precautionary principles in terms of objectifying the total number of votes) would share the participatory budget and the citizens would realize their idea with the help of city technical services. This would also be a motivation for voting, and more votes would mean more legitimacy for the selected projects.

In the same vein, going one step further, it would be interesting to let citizen co-create the platform. Indeed, our analysis demonstrates the impact of the framework and the process on the results (in terms of topic selection, timing for the voting phase, etc.). Leaving the citizens with the

opportunity to co-construct the framework would help to orient the platform towards citizens' concerns rather than reflect political projects. Hackathons or Living Labs would be appropriate ecosystems to conduct such co-creation. Hackathons, as well as participatory budgets are classified by Douay (see Table 1) as co-design tools and constitute forms of "contribution" in regard of the ladder of citizen participation. Involving citizens in every step would promote empowerment and civic engagement, which would make digital platforms a Civic Tech tool. Thus, digital platforms for citizens participation could serve different levels in the ladder of participation, depending on their framework, their underlying process and the goal pursued by the project managers.

Side-by-side with such digital platforms, we suggest that face-to-face exchanges would foster additional debates and offer complementary richness through dialogue. Given the complexity of smart urban challenges, participants indeed often need some support in order to extract and produce concrete ideas from their citizen expertise, based on their past experiences, actual needs and perceptions. We therefore suggest that more "traditional" participatory modes, especially co-design workshops with lay people and professional experts, offers additional added values in regard of digital platforms and enable participants to move from concerns to projects. Moreover, in-person participation gives depth to an idea, does not limit to a one-shot online submission and this way can be enhanced and justified through the workshop

Eventually, we emphasize here that it is normal to encounter difficulties when setting up a new tool, and that our neutral, remote assessment should nurture a process of continuous improvement. In that regard, we particularly insist on the fact that technical and administrative support is essential to ensure that the citizens understand the feasibility criteria before making suggestions that would anyway be automatically rejected by the city officials during the analysis phase. Such technical and administrative support could be administered through the various meetings, info sessions and conferences organized prior and during the whole idea generation process. Additionally, communicating the results of this evaluation to the citizens would be a recognition of their commitment and an encouragement to pursue participation in the future.

In terms of future work, analysis should be conducted about the participants (their age, gender, profession, socio-economic profile, etc.) in order to reach a better understanding of the citizens' representativity, and possible digital divide, and thus analyze the impact such digital participation platforms might have on the representativity issues.

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