Deliverable
D2.2 User engagement guidebook and strategy for senior citizens

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1 Executive Summary

The URBANAGE project aims to assess the potential benefits, risks and impact of using disruptive technologies for evidence-based decision-making in the field of urban planning for age-friendly cities. To this end, a framework for data-driven policy making is to be developed through an inclusive co-creation strategy with relevant end users (public servants and older adults). Task T2.2 *Engagement strategy for older adults,* of which this document is the deliverable, contributes to these goals by setting the most adequate engagement strategies, tools and methodologies to promote inclusive participation of older adults in data-driven policymaking.

A set of guidelines for the engagement of older adults in such policymaking practices are formulated based on (1) current practices and tools for civic engagement; (2) the identification of needs, barriers and opportunities for participation; and (3) an analysis of older adults' attitudes regarding gamification and digitization.

To gather these insights from an end-user perspective, a focus group was conducted at each of the three European pilot sites of the URBANAGE project (Flanders [BE], Santander [ES] & Helsinki [FI]). To ensure consistency in the results, a train-the-trainer session was first organized by IMEC and AGE with the different pilot site representatives: Forum Virium Helsinki (FVH) for Helsinki; the Municipality of Santander (SANT) for Santander; and Agentschap Informatie Vlaanderen (AIV) for the Flemish region. The pilot representatives were each responsible for the local recruitment and execution of the focus groups.

In total, **33 older adults** were consulted, divided over the **three pilot locations**. Their input was recorded, transcribed, and translated into English for analysis. Finally, the analysis of these data was transformed into specific recommendations for next-generation data-driven policymaking practices. Below, we summarize the main conclusions of this deliverable.

The main recommendations for ***engaging older adults*** in data-driven policymaking can be summarized as such:

1. Create a *diverse and complementary offering* of activities and participation modalities for older adults, catering to different motivational drivers and intentions. In this respect, it is recommended to combine both inbound and outbound activities, and institutional and non-institutional options.

2. Offer *consistent, continuous, and structured support* throughout participation activities/programs and to the involved organizations, both on a financial and a non-financial level. This is even more important for participation programs where long-term commitment is expected of the participating older adults.

3. *Promote self-efficacy[1].* Show older adults that their efforts to improve their environment have a clear and tangible impact. Close feedback loops, manage expectations and make contributions tangible.

Additionally, regarding ***digital citizen engagement*** with older citizens, the following recommendations should be taken into account:

1. *Apply a dual-track policy.* When reaching out to older adults for participation in data-driven policymaking, implement a parallel approach that allows both traditional (analogue) and digital interaction. Offer a non-digital alternative for those users who cannot (or will not) use new technologies.

2. *Explicate and highlight the added value* of the (new) technology when introducing or applying it in citizen engagement programs. This may help alleviate the all-too-common feeling of technology being pushed upon the user. Clearly explain how technology is a means to an end.

Finally, the following guidelines pertaining to ***gamification techniques*** for older adults should be considered:

1. *Social influence & relatedness* are the primary motivations for engagement among older adults and should therefore be at the core of any engagement strategy catering to this target group. By contrast, ownership & possession are not considered highly motivational and can be disregarded.

2. A sense of *collaboration towards a common goal* is preferred over a sense of competition and can be a useful tool in designing an engagement strategy for older adults.

3. When setting goals, find the right *balance between the attainability and the difficulty level* of the challenge.

4. Highlight the *greater cause* and communicate clearly on the impact of the delivered input to keep older adults engaged throughout an initiative or activity.

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[1] An individual's belief in his or her capacity to successfully perform an activity or attainment. [22].

2 Introduction

European cities are facing the challenge of adapting to an increasing aging population. At the same time, today's massive data production and enhanced analytical capacities create new opportunities for data-driven decision-making. The URBANAGE project was therefore conceived to assess the potential benefits, risks and impact of implementing a long-term sustainable framework to support evidence-based decision-making processes in the field of urban planning for age-friendly cities. This framework is to be developed through an inclusive co-creation strategy with relevant end users (public servants and older adults) and will be based on a decision-support Ecosystem that integrates several disruptive technologies (multidimensional Big Data analysis; modelling and simulation with Artificial Intelligence algorithms and visualization through Urban Digital twins).

In view of the above goals and strategy, it is apparent that the URBANAGE-project considers older adults to be one of the ecosystem's main beneficiaries. To ensure that the project is relevant to the actual needs and challenges experienced by older adults, their input is required to develop both the pilot use cases (part of *WP6 Use cases*) and the solutions Ecosystem (*WP5 Ecosystem & Integration*). The foundation for this task was laid in *T2.1 Stakeholder mapping & engagement roadmap*, where AGE and partners identified the necessary stakeholder networks, and co-developed a strategy for involving these potential stakeholders throughout the rest of the project. Additionally, this task builds on the efforts delivered in *T2.5 Legal & Ethical framework*, led by the University of Helsinki (UH), in which guidelines were laid out on how to ensure end user participation in an ethical and legal manner and in compliance with all the relevant national and EU level regulations.

The goal of *Task T2.2: Engagement strategy for older adults* and the current deliverable *D2.2 User engagement guidebook and strategy for older adults* is to further investigate the most adequate strategies, tools and methodologies for engaging older adults in co-designing URBANAGE's use cases and solutions for the different pilots, building further on the high-level roadmap delivered in *D2.1 Stakeholder mapping and engagement roadmap*. These insights will then inform the co-creation strategy used in *T2.3 Co-creation for challenges, user requirements and solutions identification* to identify the user requirements and needs recorded in *D2.3 Challenges, user requirements and solutions*. These user requirements, in turn, will assist the technical work packages (*WP3 Data & Intelligence*, *WP4 URBANAGE Digital Twin* and *WP5 Ecosystem & Integration*) in setting priorities and making informed architectural and design decisions.

In addition to its significance to the other tasks and work packages within the project, the insights gained from *T2.2* and *D2.2* are considered relevant to other projects and policymakers that want to include older adults or new technologies in their decision-making processes.

To obtain knowledge on how to involve and motivate older adults in (data-driven) policymaking, a series of focus groups were conducted at the different pilot locations of Helsinki, Santander and Ghent (to represent Flanders). The goal of these focus groups was twofold:

1. Review current practices and tools for civic engagement and identify the needs, barriers, challenges and opportunities for citizen engagement among older adults.

2. Understand how gamification techniques can contribute to the level of participation among older adults, by focusing on what currently motivates them in their daily lives on a conscious or subconscious level.

In preparation of the focus groups, an explorative literature study on the topics of citizen engagement and gamification among older adults was conducted. Next, the focus group methodology and protocol were developed, reflecting the goals described above. Thirdly, the pilot representatives participated in a series of train-the-trainer sessions aimed at ensuring consistency in the execution and reporting of the focus groups, with particular attention to the recruitment process and the methodological approach. Fourthly, the pilot representatives executed the focus groups at the different pilot sites, recording the output for future analysis. Finally, the IMEC researchers analyzed the output based on the transcriptions and translations provided by the pilot sites and transformed them into the insights and guidelines formulated in this deliverable.

First, *Chapter 3 Theoretical background* will provide background information on the theoretical frameworks used for analyzing the two main research dimensions (citizen engagement and gamification) that drive older adults' participation in policymaking processes. These dimensions also inspired the dual design and structure of the focus group sessions. Next, *Chapter 4 Methodology* will provide a more in-depth description of the methodology, including the research material used during the focus groups and the analysis strategy. *Chapter 5 Results* will describe the analysis and the insights gained from the focus groups. The final section, *Chapter 6 General conclusions & engagement strategy* will translate the results into recommendations and strategies to advise policy makers on how to enhance older adults' civic participation and engagement in data-driven policymaking.

3 Theoretical background

3.1 Citizen engagement

3.1.1 Conceptualization of citizen engagement

A closer look at the state of the art on citizen engagement reveals that many different definitions and categorizations of the concept are currently in use. Examples include terms such as *neighborhood engagement, citizen engagement, civic engagement, political engageme*nt, *community engagement,* etc. This broad range of labels and definitions creates a need for the further demarcation of the concept before integrating it into the methodological approach for the focus groups with older adults. Therefore, a framework (figure 1) was developed to delineate the scope of the concept more accurately for further use within the URBANAGE-project.
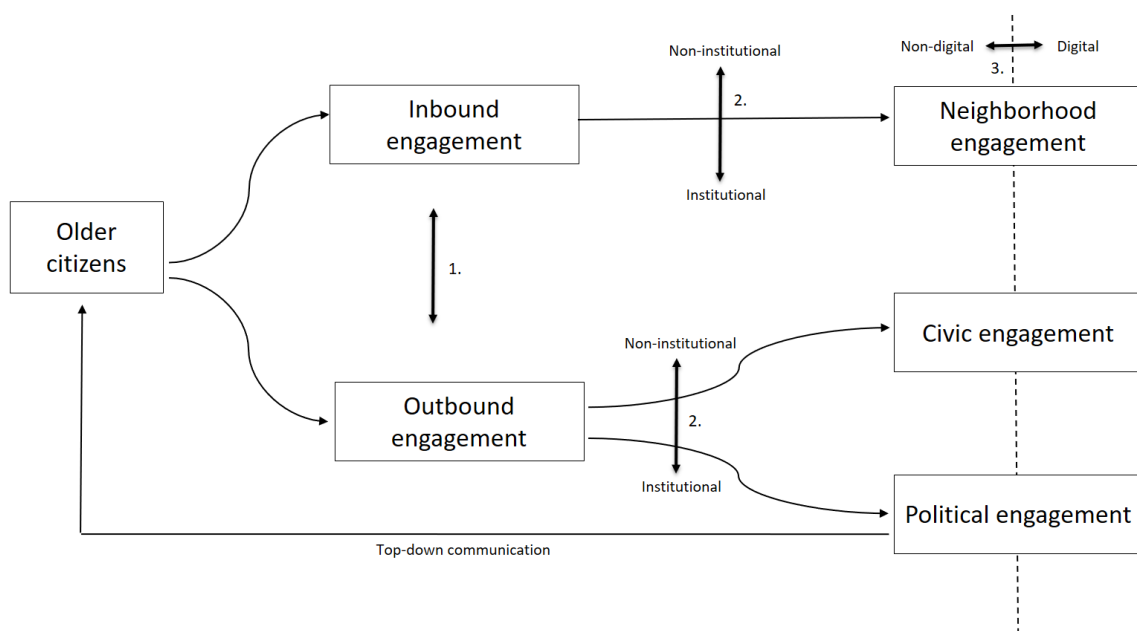
Figure 1: Conceptualization of citizen engagement

The conceptualization above distinguishes three different types of citizen engagement:

1) *Neighborhood engagement*: The involvement of citizens in autonomous group-based activities aimed at cooperation and achieving self-generated group benefits & the improvement or fostering of shared neighborhood assets (***bottom-to-bottom***) [1].

2) *Civic engagement*: The involvement of citizens in activities aimed at addressing neighborhood issues of public concern to policymakers, from an unsolicited ***bottom-up*** perspective [2].

3) *Political engagement*: The involvement of citizens in formal (solicited) participation activities aimed at addressing neighborhood issues (***top-down*** initiated) [3].

This conceptual disentanglement of the concept of *citizen engagement* is inspired by three dualities – each influencing and resonating with the level of engagement of older adults, and the drivers and barriers that explain participation differences. **The next paragraphs briefly explain these dualities**.

The first duality is related to the distinction between ***inbound*** and ***outbound*** *engagement. Inbound engagement* is focused on the local community and the internal capacities to improve the neighborhood by means of a self-governing, inward focused, bottom-to-bottom approach (neighborhood residents joining forces to take matters into their own hands, e.g., tactical urbanism, commons, etc.). This type of engagement is often less formalized (although it can be supported through policy, funding and coaching). *Outbound* engagement, on the other hand, is outward focused and applies collective action to address neighborhood issues at the policy level (neighborhood residents demanding something from policymakers) [4].

The second duality entails the role of the policymaker in the engagement process. The government can be the one who initiates and coordinates the engagement process (top-down, e.g., elections), or the citizen can assert power in an unsolicited manner (bottom-up, e.g., petitions). In our conceptualization, the duality is labelled as ***institutional*** *(formal) versus* ***non-institutional*** *(informal) engagement.* While institutionalized engagement has a closer connection to policymaking processes, it also relies on trust in the policymaker. Non-institutionalized engagement is harder to manage, but is open-ended, which allows for higher emancipatory freedom in, for example, agenda-setting and allows non-institutionalized actors to act as trust brokers in the engagement process.

The third duality that influences the level of engagement of older adults is the medium. Participation and engagement have a long history. The range of participation modalities has developed into a rich, vibrant and diverse set of instruments that allow different types of interaction and involvement in policymaking processes. In the past decennia, new media and communication technologies have emerged, creating opportunities for new types of engagement (e.g., crowdsourcing, participatory sensing, online petitions, etc.). Yet, while these new channels may offer interesting and novel ways for citizens to be engaged, the medium itself also raises barriers that can cause participation inequalities (digital divide-related barriers). Hence, the final duality entails ***digital*** *vs.* ***non-digital*** *engagement*.

3.1.2 Drivers and barriers for older citizens' citizen engagement

This conceptual disentanglement allows to map the state-of-the-art regarding drivers and barriers that explain participation inequalities amongst older adults in policy making. An academic literature review, summarized in the table below, provides preliminary insights into drivers and barriers that can explain different levels of engagement among older adults.

Table 1: Drivers and barriers for citizen engagement

Type of engagement	Drivers	Barriers	References
Neighborhood engagement	• Proximity of resources • Recreational facilities • Public transportation • Social support • Social trust • Sense of belonging in the neighborhood • Religious ceremonies	• Bad neighborhood environment • Bad sidewalks • Obstacles on the road (bikes, garbage bags …) • Perception of bad neighborhood safety • Physical health	[5] [6] [7] [8]
Civic engagement	• Educational status • Self-efficacy • Belief that citizens can make a difference • Awareness of outcomes of the activities	• Perception of small or no impact on the local policy • Perception of not being heard for their actions • Issues of health • Lack of financial resources • Not being informed of engagement opportunities • Bad transportation	[9] [10] [11]
Political engagement		• The use of technology in political activities • Digital literacy • Fear of technology • Lack of knowledge • Lack of skill • Lack of interest • Lack of meaningfulness • Lack of support • Lack of appreciation	[12] [13] [14]

3.1.3 Neighborhood engagement

Different factors, both positive (drivers) and negative (barriers), may impact older adults' engagement in neighborhood activities. The *physical environment* (neighborhood), for example, has a big impact on the engagement of the older citizens in terms of neighborhood engagement [5]. Indeed, the proximity of resources such as local grocery stores, social service centers, recreational facilities and public transportation positively contribute to the level of engagement [6]. Conversely, factors such as a bad physical infrastructure or obstacles on sidewalks can have a negative impact on older adults' participation in engagement activities [7].

Secondly, the *perception of the neighborhood* by the older adult plays an important role as well. The feeling of living in a safe environment, a sense of belonging (feeling that they are part of the neighborhood's social fabric) and trust in and support from fellow neighborhood inhabitants may

impact the willingness to participate in neighborhood activities [8]. Finally, the older adult's *physical health* influences behavior, as the older adult may be prevented from physically participating in activities due to adverse health effects [6].

3.1.4 Civic engagement

For civic engagement, the focus shifts slightly from external factors to internal drivers and barriers. Firstly, the *educational status* forms a driver for engagement activities: the higher the education level of the older adult, the more likely they are to engage in civic participation activities [9]. Secondly, older adults may experience motivation or demotivation related to their *self*-efficacy (the older adult's belief in his or her capacity to successfully perform an activity) [10]. If they feel heard and see the positive results of their engagement activities, older adults tend to be more willing to participate (this phenomenon is also known as "political efficacy"). In line with this observation, low self-efficacy levels have a detrimental impact on engagement. Thirdly, *bad health, a lack of financial resources or not being (sufficiently) informed on possible engagement opportunities* may also prevent them from contributing [11].

3.1.5 Political engagement

For political engagement, the literature review did not reveal pre-identified drivers, yet several barriers were identified, seemingly focusing on internal factors such as a *lack of political knowledge, a lack of skill to participate in political engagement activities, a lack of interest, a lack of perceived meaningfulness, a lack of support from other persons and a lack of appreciation* [13] [14]. In short: older adults want to be heard and experience impact on the policymaking process. In addition, technology, too, can form a barrier, as a low digital literacy and the associated fear of technology may increase the participation threshold for older adults [12]. As such, the use of online platforms or channels for participation or other technology-driven processes may scare older adults.

3.1.6 WHO Indicator framework

The aforementioned drivers and barriers show relevant similarities to the WHO indicator framework, which provides a set of indicators that contribute to an accessible and age-friendly neighborhood – and thusly, to an accessible environment for engaging in neighborhood activities. Indeed, an overlap was found between some of the drivers and barriers and a selection of indicators. To illustrate this point, social determents (e.g. education and social care) and economic determents (e.g. wage, social security) can be likened to a driver or barrier on the level of neighborhood [8] or civic engagement [11]. Other indicators which may improve accessible neighborhoods such as "physical health" and the "functional ability of health" can also be found in the literature review above [6]. In addition, the WHO indicator framework states that older adults first need to be able to meet their basic needs, be mobile and maintain relationships before they can be expected to contribute to society or their neighborhood. These parallels between the engagement barriers and drivers and the WHO indicators further supported the use of the citizen engagement framework in the focus groups.

3.1.7 Focus group implications

The framework illustrated above, disentangling citizen engagement in neighborhood, civic and political engagement, formed the theoretical backbone of the focus groups. As such, the questions asked in the focus groups were structured around these three levels of engagement. Yet, in view of their correspondence to the underlying dualities mentioned before (inbound vs. outbound engagement, institutional vs. non-institutional, digital vs. non-digital), this deliverable will report the insights along the lines of these dualities rather than the types of engagement. This allows for a broader and more widely applicable interpretation of the results which in turn can be translated into guidelines for citizen engagement among older adults.

3.2 Gamification

3.2.1 Conceptualization of gamification

Gamification has been adequately described as 'the use of video game elements to improve user experience and user engagement in non-gaming services and applications' [15]. While research into older adults' motivation to play games and preference for game elements is limited, gamification techniques have already shown potential in the domain of urban planning [16]. Studies, albeit rather limited in longitude, have reported mostly positively augmented engagement outcomes in the context of e-participation [17].

On the subject of gamification studies, the *Octalysis framework* was developed by Yu-Kai Chou to represent a "complete" gamification framework to be used as a tool for applying gamification and evaluating gamified products and services [18] [19]. This framework places emphasis on human motivation-centered design and builds on the idea that people play games and enjoy gamification elements because they appeal to at least one of eight core drivers (hence the octagon shape of the framework).

The Octalysis framework distinguishes core drives inspired by extrinsic motivation (left side) from those appealing to intrinsic motivation (right side). Moreover, the five drivers on the top side of the octagon are considered *white hat gamification principles*, signifying that they are generally considered to be positive motivators. Conversely, the three drivers on the bottom side ('Unpredictability', 'Avoidance' and 'Scarcity') are considered to be *black hat gamification principles*, or negative motivators.

Based on the literature research, it was decided that the *black hat* drivers would not be included in the focus group discussion, as other research already demonstrated that punishment mechanics generally are not liked by older adults [20].
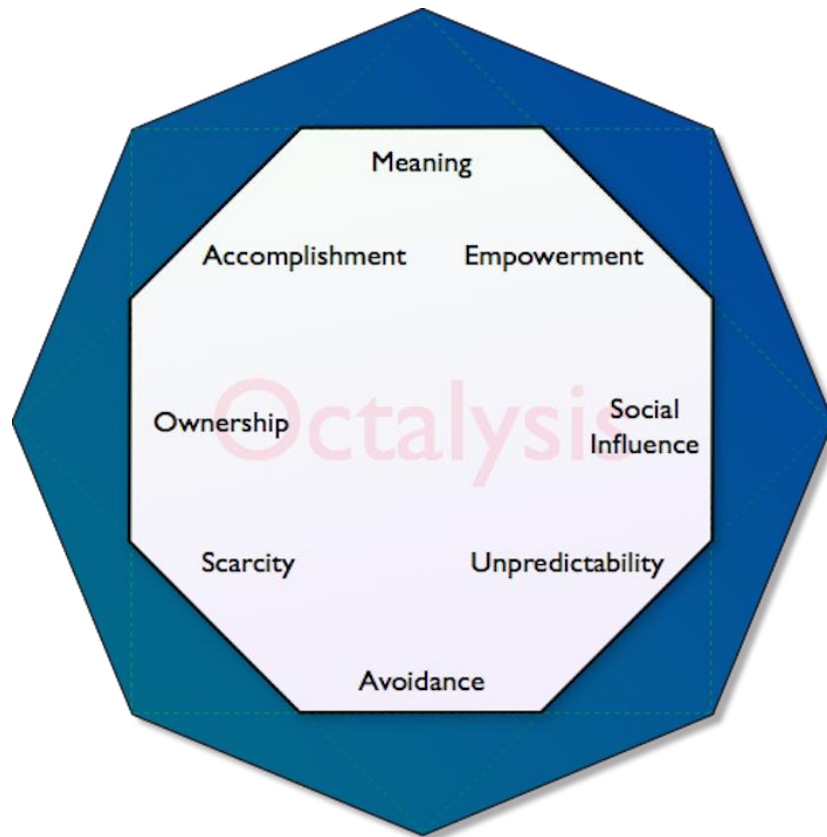
Figure 2: Octalysis Framework [21]

3.2.2 Focus group application

In the following table, a brief overview is provided of how the 5 core drivers introduced in the focus group discussions are defined:

Table 2: Octalysis Drivers used in the focus groups

Epic meaning & calling	The belief held within someone that they are doing something for a greater cause or goal and/or are the chosen ones working towards this belief.
Development & accomplishment	Our internal motivation and drive to tackle challenges and make progress. Neither goal nor reward are the most important, but the act of overcoming the challenge.

Creativity, empowerment & feedback	The drive for people to express creativity, seek strategies and combinations, and deliver feedback to see adjustments and have impact.
Ownership & possession	Motivation inspired by the feeling that the person owns or has control over something, resulting in the person trying to improve, protect and/or accumulate further. This can be a (digital) object or a something less tangible (e.g. a process, an organization, etc.)
Social influence & relatedness	Motivation that comes from social elements. This includes a need for connection through mentorship, social feedback, companionship, but can also relate to competitiveness and feelings like envy.

4 Methodology

4.1 General

Considering the goals of the focus groups, the following research questions were formulated:

- *RQ1: How can we motivate older adults to engage in citizen participation?*
    - What are the drivers and barriers that influence older adults' motivation to engage?
    - How do older adults perceive the application of digital technology in citizen participation activities?

- *RQ2: How can gamification techniques motivate older adults to engage in citizen participation?*
    - Which gamification techniques are perceived as motivational in this context by older adults?

So as to answer these research questions, three focus groups were conducted in total, one per pilot site (Flanders (Ghent), Santander and Helsinki). The full process, from preparation to execution and analysis, can be divided into five steps:

Step 1: literature research (M4)

In the first step, IMEC researchers developed a theoretical framework based on existing literature to be applied to the focus groups. The outcome of this literature review and its relevance to the goals of the focus groups have already briefly been discussed above.

Step 2: methodology and protocol design (M5)

In the second step, the methodological approach was developed further. The eventual protocol consisted of a double parallel focus group in two parts, reflecting the two research dimensions, where each part focused on a separate topic. The full focus group protocol and topic guide are included in Annex B and C.

1. *Part one*: *citizen engagement and digital engagement*

    Methodologically, this section built on using existing pilot-specific examples of the different types of engagement to initiate a discussion with the participants. A more detailed explanation of the examples used can be found in section *4.2 Stimuli.*

2. *Part two: gamification for citizen engagement among older adults*

This part of the focus group used the five white hat drivers from the Octalysis framework as a basis for discussion on which extrinsic and intrinsic motivations older adults may experience when engaging with (gamified) products and services.

Step 3: train-the-trainer with pilot sites (M5)

In the third step, IMEC and AGE collaborated closely to organize two sessions with the pilot representatives. The goals of these workshops were to 1) provide the pilots with guidelines on how to interact with older adults in an inclusive and respectful manner; 2) guide the pilots through the recruitment process and ensure compliance with GDPR and privacy regulations; 3) explain and discuss the protocol and materials needed for the focus groups. As part of the second train-the-trainer session, the theoretical framework for the types of engagement and its underlying dualities and the Octalysis framework were demonstrated.

Step 4: conducting the focus groups (M6-M7)

In the fourth step, the focus groups were conducted at each of the three pilot sites under moderation of the pilot partner. The sessions took place on the following dates:

- 13/07: Flanders, moderation IMEC
- 22/07: Santander, moderation SANT
- 12/08: Helsinki, moderation FVH

Each focus group was conducted live, in accordance with the then-applicable local regulations regarding covid-19. To accommodate the participants and to stimulate an informal atmosphere, snacks and drinks were offered by the pilot partners to the participating older adults. In total, 33 older adults participated in the focus groups (Ghent N = 11, Santander N = 13 and Helsinki N = 9). Due to the strict covid-19 restriction that were in place at the time these focus groups took place, this number of participants is lower than originally intended. However, the internal validity of this research is not significantly affected. A more elaborate sample description is added in Annex A.

The focus groups were recorded (audio) after obtaining signed informed consent from each of the participants and transcribed by local transcription companies. Eventually, these transcriptions were sent to the IMEC researchers for analysis (finalized by M8 of the project).

Figure 3: Pictures of the 3 focus groups in action
(from left to right: Helsinki, Santander, Flanders)

Step 5: Analysis of the focus groups (M8)

In the final phase of this research step, IMEC researchers analyzed the results (see also *4.3 Analysis Strategy*).

4.2 Stimuli

A central pillar of the focus group methodology was the use of stimuli (pilot-specific examples) to make the rather abstract engagement and gamification concepts more tangible for participants. Additionally, these examples could be used as a conversation starter to initiate group discussions. The next section will briefly illustrate some of the examples that were used.

4.2.1 Citizen engagement stimuli

The citizen engagement examples were carefully chosen to represent the three types of engagement (neighborhood, civic and political engagement) and the dualities of inbound vs. outbound engagement, non-institutional vs. institutional engagement and digital vs. non-digital engagement.

The following examples are the stimuli used in the focus group conducted in Ghent (Flanders, Belgium). The other pilot sites were directed during the train-the-trainer sessions to look for similar local examples to be used within the context of the cities of Santander and Helsinki.

Example 1: Mooimakers
(neighborhood engagement,
inbound and non-institutional, non-digital)

Example 2: VZW rond punt
(civic engagement ,
outbound, non-institutional, non-digital)
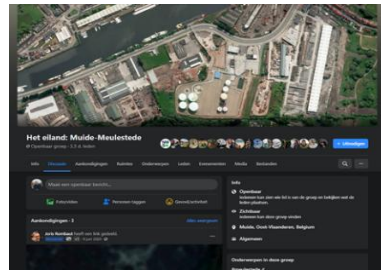
Example 3: Wijkbudget Gent
(political engagement,
outbound, institutional)

Example 4: Hyperlocal Facebook group
(neighborhood engagement,
inbound, non-institutional, digital)

Example 5: SoS Gravesteen
(civic engagement,
outbound, non-institutional, digital)

Example 6: Ruimte voor Gent
(political engagement,
outbound, institutional, digital)

Figure 4: Examples of citizen engagement

4.2.2 Gamification stimuli

To ensure that the focus group moderators were adequately equipped to convey the meaning of the core drivers of the Octalysis Framework, a general example of gamification applied to civic engagement was provided in the train-the-trainer sessions. To this end, the *ZWERM project* was used:
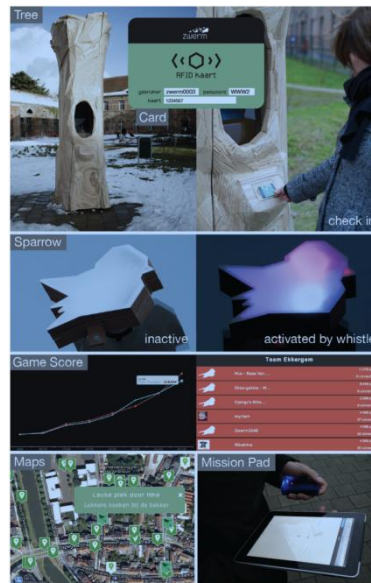

Figure 5: ZWERM project Gent

ZWERM was an experimental project within the city of Ghent that tried to stimulate urban neighborhood organization through gamification. IT locations, shaped like sparrows and trees, were placed in two neighborhoods in Ghent. Inhabitants of these neighborhoods could scan an RFID card at these locations to collect points or could whistle at 'sparrows' for additional points. Other gamified elements such as streaks, leaderboards and missions were incorporated in the project along with, of course, a general sense of competition between the two neighborhoods. In view of the URBANAGE goals, one of the interesting key takeaways provided by the project was that the components and weather conditions for ZWERM were not suited to the physical needs of older adults.

In addition to this general example, the moderators were also provided with some specific examples for each of the selected white hat Octalysis core drives. This enabled the moderators to refer back to these examples when trying to explain an unfamiliar concept to the participants. If relevant, the core drivers were also linked to the ZWERM project to further stimulate the moderators' personal understanding of the core driver. The following examples were used:

- o *Epic meaning and calling*
  - Examples if needed: donating to a cause, buying a brand because they are more sustainable or because they donate part of the profits, helping people, voluntary work, etc.

- ZWERM: sense of identity, creation of identity, being 'the chosen one' to represent your neighborhood, compete for 'the honor of the neighborhood'.

  o *Development & accomplishment*

    - Examples if needed: think about using a schematic or application to count calories or (kilo)grams when trying to reach weight loss goals and rewarding yourself with a cheat meal every now and then. Think about learning a new skill that is challenging to you.
    - ZWERM: challenge and goal to become the best neighborhoods and tracking mechanism with online game scores, point system, leaderboards and collaboration streaks.

  o *Creativity, empowerment & feedback*

    - Examples if needed: knitting, building things (LEGO, model planes/trains), drawing, painting, music, etc.
    - ZWERM: people found novel fun ways to trigger the sparrows (other than through whistling). Applause moments were mentioned as a form of feedback to a creative action. Additionally, strategic thinking was stimulated (finding the most efficient route, engaging and finding others, etc.)

  o *Ownership & possession*

    - Examples if needed: being rewarded with a coupon after a certain level of input or engagement in activities, but also a sense of pride over prized possessions such as a pet, an old timer car or a collection of something.
    - ZWERM: dynamic of card collecting and exchanging emerged. There was also the element of having an end-game cash prize, and personalization was created by participants drawing things on cards.

  o *Social influence & relatedness*

    - Examples if needed: participating in a competition or game for the sake of the competing with others or for the sake of simply 'being together' in a group.
    - ZWERM provided both a competitive and a collaborative element, enhanced by the fact that participants got to meet new people in their neighborhood and were stimulated to play together. This was eventually also evaluated to be an important motivator.

4.3 Analysis strategy

Upon delivery, the transcriptions of the focus groups were analyzed by IMEC researchers in a deductive manner. The theoretical framework, which was developed in an earlier phase, helped structure the analysis and was used to create a code scheme in the qualitative analysis software program "NVivo". The coding was done according to the two-fold structure of the focus groups (1. citizen engagement

and digitization among older adults and 2. gamification for older adults). Each part had its own researcher dedicated to and responsible for the coding and analysis of the findings. After, the researchers formulated the general conclusions together and translated those into useful guidelines for citizen engagement.

5 Results

5.1 Citizen engagement

5.1.1 General drivers & barriers

On the topic of citizen engagement for older adults in general, a series of motivations, drivers and barriers could be identified from the focus groups. Before disentangling the differences between the three dualities, the motivations were mapped on the drivers and barriers that were found in the preparatory literature research phase. The following table provides an overview of these motivations:

Table 3: drivers and barriers for citizen engagement identified during the focus groups

Driver | Barrier	Description
Barriers	
A lack of time	A lack of time of older adults to engage in neighborhood activities. Being busy with other activities and no prioritization of neighborhood activities.
Physical health barriers	A bad physical health causing older adults not to engage in activities.
Bad facilities	A limited availability of facilities to help older adults to engage in activities (both on a physical and a digital level).
Bad past experiences	Previous disappointment with citizen engagement. This causes older adults no longer wanting to engage in future activities.
Bad awareness	Insufficient knowledge about engagement initiatives and activities that are organized in the neighborhood.
Too many events	Information overload and a large number of possibilities makes it hard for older adults too choose because different organizations organize overlapping events.
No feeling of ownership	Low levels of perceived responsibility causes resistance to taking ownership over a problem because this be the responsibility of the government.
Driver	
Civic duty	High levels of civic duty causes older adults to engage in neighborhood-improving activities and initiatives.
Having fun	The fun aspect of engaging in neighborhood-improving activities and feeling interested in the topic of neighborhood activities.
Self-efficacy	Feeling heard by neighbors and institutions makes older adults feel that they can improve the neighborhood with their engagement in activities.
Good awareness	Being well informed through the right channels causes older adults to engage more easily in neighborhood-improving activities.

Based on these drivers and barriers, a few conclusions or lessons can be identified:

1. **Older citizens need both physical and mental facilities to engage.**

The respondents mentioned that their physical health and lower digital literacy often form a barrier preventing them from engaging in activities that contribute to the improvement of their neighborhood. However, when facilities do meet their needs (for example by being offered help in transportation or by having a social network to assist them with the use of technology), they are more able and willing to engage. In terms of digital literacy, support from others is an important enabler which will be discussed further in section *5.1.4 Digital vs. Non-Digital*.

2. **Not all older adults have spare time to engage in neighborhood-improving activities.**

Some participants mentioned that they do not have time to spare to be involved in engagement activities. They indicate that their current social network is sufficient and keeps them busy during the day. An often-heard example is that spending time with their grandchildren takes up a (subjectively) significant amount of time. These older adults therefore either do not feel the need to engage, or they prioritize other activities over citizen engagement activities.

3. **Intrinsic motivation and self-efficacy are the most important drivers to engagement.**

Those older adults who take an active participate role are intrinsically motivated to contribute. This is particularly true for activities related to a topic in which they take a specific interest, and for activities about which they feel that they can have fun when participating. An important caveat, however, is that they also want to see the results of their involvement: being heard and delivering clear added value are important drivers to their engagement.

> *Older citizen: "Once, I set up a petition together with my neighbors. I did it online, and 50 other neighbors were interested and signed the petition. We went to the City of Ghent, the major, deputy majors and the police. I just got an e-mail with a file-number and the note that they were thankful for my application. "Your file has been created". But I never heard anything more about it."*
>
> *Interviewer: "And would you try it again?"*
>
> *Older citizen: "No, I am discouraged and disappointed."*

On the other hand, older adults also indicated experiencing a sense of 'civic duty', which drives them to contribute for no other reason than wanting to improve their neighborhood.

4. **Awareness of activities can be improved by informing citizens through the proper channels.**

In addition to the previously mentioned drivers and barriers, older adults may also refrain from participation or engagement due to a lack of clarity about the options. A lack of awareness of existing

activities (e.g. by communicating through the wrong channels), overlapping activities from different institutions or too many activities in one's neighborhood may all negatively affect an older adult's desire to engage. This, in turn, may result in them participating in fewer activities than they would like to, or even in a lack of participation altogether. Providing a clear overview of the possible programs, activities, or initiatives for engagement through the proper channels can therefore be expected to positively motivate older adults.

Those 'proper channels' refer to the older adults' stated desire to be informed via a dual-track policy that offers both physical (analogue) and digital media carriers:

> *Interviewer: "How would you like to be informed?"*
>
> *Older citizen 1: "I think through word of mouth."*
>
> *Older citizen 2: "Oh, you mean 'how I would like to know'?"*
>
> *Interviewer: "Through the newspaper? Many people read the newspaper, so I don't know, maybe through the radio?"*
>
> *Older citizen 2: "I don't know, does everybody read the newspaper?"*
>
> *Interviewer: "The screens on the busses?"*
>
> *Older citizen 2: "I think the screens on the busses are more of a fit for me. It works for me."*

5.1.2 Inbound versus outbound

The first duality that was described above was the distinction between inbound and outbound engagement, where citizens try to improve their neighborhood either through a self-governing, inward-focused, bottom-to-bottom approach (*inbound*) or via a more outward-focused approach that tries to apply collective action to address neighborhood issues at the policy level (*outbound*).

This duality remerged from the focus groups, where motivations, barriers, and drivers to engage in inward-driven or outward-driven activities became apparent.

1. **Older adults prefer forms of inbound engagement because of its faster, more tangible and more visible impact on their neighborhood.**

A first observation was the importance of perceived impact on the neighborhood. Being heard by local authorities and neighborhood inhabitants and having a visible impact are the key drivers for older adults to engage in their neighborhood. As such, the majority of the participants across the three pilot sites prefer inbound engagement, stating that these forms of participation usually lead to faster and more tangible results. Activities like cleaning up the neighborhood, helping less mobile neighborhood inhabitants with transportation, addressing mobility problems among neighborhood inhabitants and

reprimanding (younger) people for bad behavior were therefore considering appealing by the participants.

2. **Older adults require clear feedback from their local authorities if they are to stay motivated for outbound engagement activities.**

Many of the participants in this research's sample were already involved in citizen engagement activities in the past, both for inbound engagement activities and for outbound engagement activities. One such activity, for example, is addressing local mobility issues together with local authorities. On the subject of outbound engagement, several participants stated that they became demotivated when trying to have impact on local policies:

> *Older citizen: "We addressed the problem with scooters that drive too fast in the street behind our apartment building. I sent an e-mail to Gent Info, but I've never heard anything about it…"*
>
> *Interviewer: "Does that bother you?"*
>
> *Older citizen: "Yes of course. You ask something to the City of Ghent… which has the image of being open to providing information, being open for complaints, questions, you can send everything to them. They state that they solve everything, but most times, it doesn't get solved."*
>
> *Interviewer: "Do you still send e-mails?"*
>
> *Older citizen: "Less, I'm holding back the last few months."*

The above example demonstrates how not being heard can be a major demotivating factor for future forms of outbound engagement. Another factor that limits their participation in outbound engagement activities is the online format that often is used for these activities. Online neighborhood councils and other online channels of interaction are not perceived as having added value, in part because of the limited number of participants, and in part because the inability to speak to a civil servant in person.

3. **Persistency is perceived as a key factor in having impact on an outbound level.**

Whereas some participants stated that a lack of response or impact keeps them from re-engaging with outbound activities, other participants countered this view with the argument that persistency is needed if one wants to have impact. In their view, repeatedly returning to an issue and continuous attempts to reach city representatives eventually pay off. To be this persistent, however, requires higher levels of intrinsic motivation.

> *Interviewer: And would you try it again?"*
>
> *Older citizen 1: "No, I am discouraged and disappointed."*

Older citizens 2: "But I think that you have to keep hitting with the same hammer if you want to accomplish something. That is what we experience: by hitting it once, you won't get the effect that you want."

Interviewer: "So, hitting with the hammer works?"

Older citizens 2: "Yes, you have to keep hitting it. You have got a file number, send it to the deputy major, ask what the status is of this file. Because the date today is the second of June, and the file number was created in… you just have to keep hitting."

5.1.3 Institutionalized versus non-institutionalized

The second dimension of duality relates to institutionalized versus non-institutionalized engagement. This duality describes whether older adults prefer to be part of an organization, or rather be more self-reliant in the way they engage in their neighborhood.

1. **Obligations towards organizations are experienced as barriers in engagement activities.**

During the focus group discussions, several citizens mentioned that they would like to contribute to their neighborhood through activities yet fear that collaborating with local institutions may create too many obligations in the long term. These participants voiced a desire to have sufficient freedom of choice on *when* to engage in neighborhood activities, because they have 'other things to do' as well. Hence, a sense of freedom must be considered an important factor in their volunteering contributions.

Interviewer: "Does anybody feel like they want to engage in a cleaning activity because of other reasons than making the neighborhood a cleaner place?"

Older citizen: "Engaging? I don't, I don't have any time."

Interviewer: "Because you don't have time? What is holding you back then?"

Older citizen: "I am always busy. My grandchildren, we do a little here, a little there. We go here, we go there… and of course the age."

Interviewer: "What do you mean with age?"

Older citizen: "I am eighty years old. I always lived in a big house. I worked in the garden; my grandchildren came by regularly. But now I'm enjoying my little apartment where I live now. But still, I have to go here and there, and I like to do that. But I'm not a member of any organization. I hear that some people here are active at "the Horizon" [local service center]. But I'm not active at any place. I don't want any obligations."

2. **Perceived impact is an important factor in engaging in neighborhood-improving activities**
(non-organizational ad hoc engagement strategies).

As already mentioned in section *5.1.2. Inbound vs. Outbound Engagement*, having a positive impact on their neighborhood is of high importance to older adults, and influences their desire to engage. In this respect, being active in an organization or not depends on the older adult's *perceived potential for impact*.

Some respondents explained that they believe they have more impact when contributing as an individual, for example by cleaning the streets or by being active in an informal care role. These respondents prefer small DIY initiatives that are organized in an ad hoc manner because they trust that their contribution to these initiatives is more focused on those neighborhood inhabitants that truly need their help. Thus, they do not feel that they need to take on a more institutionalized, formal role with a long-term engagement via a local organization to have an impact.

> *Older citizen: "No, but I think… we are from a generation (inaudible). I have always been active in informal care for my parents, my parents-in-law and other neighborhood inhabitants, but there comes a moment where you are burned up. You know how precious your care can be for other people. And then, you want to take care of people who actually need it. I don't want to be stuck at a meeting or something from a certain hour to another. So, I want to be home, if you need help, and I'm available, then I will help you…"*

3. **Organizational support is considered a force that leverages impact.**

Complimentary to the previous point, most participants feel that having impact depends on the organizational support they get during projects and activities, as it improves their position and makes for a more convincing and stronger stance. This perceived increase in impact stems from the structure and consistency which organizational resources may deliver in terms of financials, professionalism, and long-term certainty, enabling participants to contribute on a higher and more consistent level. In short, these respondents feel that they stand stronger together, as a collective.

Additionally, contributing to an organization strengthens one's social network with other volunteers and increases a participant's sense of enjoyment in joining these activities. An expanded and fun network of co-volunteers within an organization can be a strong motivator for future contributions to organizational neighborhood-improving projects.

Simultaneously, however, some respondents mentioned that the - often high - levels of engagement required by organizational activities can be demotivational. When organizations do not meet the volunteer's needs in terms of structure or consistency, it may cause the volunteer to have too many responsibilities to be self-sufficient and thus quit the activities. Likewise, when an official organization's

structural, financial or professional support diminished over time, older adults may start to feel like their contribution is no longer worth the effort.

> *Interviewer: "Actually, I hear something interesting. [Older citizen 1], you mentioned structure. Now you are talking about how you don't want the full responsibility at the end of the project. You meant that you want that the network around any projects keeps on existing?"*
>
> *Older citizen 1: "There are many types of volunteering. When engaging in a collaboration with a local service center, there are professional active people there. But there are also projects where everything is too dependent on the volunteers themselves. You get a little subsidy, but if there is no more money, and the leading figure of the project stops, the projects is threatened to be cancelled. Or if you are one of the last volunteers standing, then you feel obligated to keep on engaging by yourself. I am now in a similar project. You give it two years of your time, and then you have to cancel it in this way."*

4. **Organizational restrictions during engagement activities may limit older adult participation.**

In projects initiated by an organizational entity, restrictions may be placed upon participants in the form of, for example, procedures. The resulting slower processes or financial restrictions may limit the degree to which the older adults can pursue their ideas and ambitions, causing them to experience demotivation and impeding future participation in projects.

> *Older citizen: "I participated last time in the participatory budget, where you could provide ideas. Our group made a proposal for the Vuosaari manor, that it would be a kind of a living room for the residents, where there could be a café, apparently the equipment is there, and the kids' play area, they could have a summer theatre, concerts, associations could have meetings there. But when it was passed forward, they put such a big price on it, I think something like 200 000, I think it placed six in Helsinki, so it never became reality because it would have taken the majority of the money for this area. But it was done, and now that they are selling it, there is a group that is working on the same thing. It would be a great place, there is a paved street where you can walk, cycle, you can push a pram and so on, that you don't necessarily need a car or a bus to get there."*

5.1.4 Digital versus non-digital

As the goal of the URBANAGE project is to enhance urban planning for age-friendly cities through new technologies, older adults' attitudes towards new technologies were considered relevant to the project. Sufficient attention was therefore paid during the focus groups to the way older adults use technology in the context of citizen engagement and participation within their neighborhoods. The results below will first detail the insights into older adults' *general usage of technology*.

1. **The practical added value of (smartphone) technology must be clear.**

The majority of the focus group participants indicated that they have a smartphone which they use on a regular basis. The main drivers for owning and using a smartphone were of a practical nature: access to basic functions such as the clock feature, calling other people, checking bank accounts, taking pictures of their grandchildren and listening to podcasts. Still, a few participants were not in possession of a smartphone, explaining that to them, there is no need as they manage their daily routines without using one. Instead, they rely on traditional, tried-and-true methods such as having a booklet for phone numbers, using a regular watch to keep track of time, and calling people over a fixed landline.

> *Interviewer: "[…] do you have a smartphone?"*
>
> *Older citizen: "No."*
>
> *Interviewer: "Why not?"*
>
> *Older citizen: "Why should I?"*
>
> *Interviewer: "Tell me."*
>
> *Older citizens: "I don't have the need for one. I use my regular telephone at home. I'm happy with that. Sometimes I'm not reachable, but I don't want to be reachable every day because of a smartphone."*

In general, however, both the smartphone users and the non-smartphone owners agreed that the practical added value of new (smartphone) technology is of high importance and must be made clear before they want to use it over more traditional methods.

In addition to their view on and usage of smartphones, participants also discussed their usage of computers at home. Intriguingly, older adults were less skeptical about using their computer compared to using their smartphones, in part because they found it clearer how to use one and have more experience with it. Consequently, the added value of a computer was also considered to be higher.

2. **Lack of knowledge may create a barrier in how to use new technology such as smartphones.**

Both smartphone users and non-smartphone users mentioned that they experience several barriers when using their smartphone. The following barriers returned across the three pilot locations: lower digital literacy leading to insufficient knowledge on how their smartphone works; fear of doing something wrong; fear of having to pay too much for the services on their phone; their peers not using a smartphone, etc. Indeed, one participant indicated that he possesses both a regular cellphone and a smartphone yet prefers using the regular cellphone because it is deemed more trustworthy, does not

require frequent updates (which he did not understand), and causes less concern in terms of potential fall damage of expenses when breaking down.

Again, smartphones and the digital world feeling alien and unknown creates a level of anxiety that may create barriers to participation. To illustrate this point further, another participant mentioned how she was afraid to go to a concert because her ticket was only available digitally as an online document:

> Older Citizen: "I'm going on a trip to a concert with my grandson. We have tickets to go and watch Ara Malikan, I love him."
>
> Older citizen: "My grandson told me: "Look grandma, I have the tickets on your phone." And now I see the tickets every day, but now I don't want to go anymore."

3. **The added value of the large number of applications on smartphones is considered questionable at best.**

Another aspect that older adults do not feel comfortable with in regard to smartphones is the large number of apps which – to them – do not have any practical use or implication. One participant demonstrated this dislike by showing how he had cleaned up his smartphone and had deleted many of the applications because they were not considered useful to him. A sizable part of the respondent population indeed concluded that smartphones are dispensable as most of their functionalities can also be managed through different means.

> Older citizen: "I actually don't really use my smartphone. I have him to make calls, but I do it very rarely. Sometimes I use it to do some internet research. If I expect an urgent e-mail, I'll check it as well. But I've had too many apps on my smartphone, a half year ago, I have cleaned and deleted all my apps, except the ones which I really needed."
>
> Interviewer: Why did you delete them?
>
> Older citizen: Because I didn't need them, and I've gotten a high bill for my internet-use around new year.

Nonetheless, participants also indicated that some applications have a higher practical value and are perceived to be useful. WhatsApp, for example, enhances older adults' wellbeing by facilitating contact with their grandchildren and friends. While this perceived usefulness certainly contributes to WhatsApp's adoption by older adults, its success can also be partially attributed to the bandwagon effect, where people adopt certain behavior merely because they see others behave in that particular way. Indeed, a few participants mentioned that it would be hard to maintain relationships with friends and family if they wouldn't use WhatsApp, especially during the pandemic-related restrictions that were in place during the focus group period.

While the previous section highlighted some attitudes and perceptions relating to general technology and smartphone use among older adults, the next section will focus on discussing the *relationship between digital technology and citizen engagement*.

4. **The practical added value of technology needs to be clear when using it in engagement and participation activities.**

In accordance with the earlier-observed conditions for using smartphones or newer technologies for daily activities, older adults mentioned that the added value of the technology needs to be clear for it to be embraced as part of their neighborhood-improving engagement activities. One example of a valuable implementation of technology is an online platform where neighborhood inhabitants can provide and receive help. In such a scenario, where clear added value is demonstrated, participants agreed on the use of that technology.

> *Older citizen: "I would hope for more interaction between the residents, for example, I would hope for our housing company to have an online channel, through which we could provide and ask for neighbor's help, or recycle goods or discuss the neighborhood matters, or things like that. And something which does not require signing up to Facebook, so the solution is not a Facebook group, but something like this."*

However, technology for participation purposes also is cause for some skepticism among older adults. Across the different pilot sites, the question of why technology should be used if the same results can be achieved without was raised a few times. Their own lower digital literacy (and that of their older peers) combined with their skeptical attitude towards new technologies lead to a generalized preference for more traditional, offline modes of engagement.

> *Interviewer: "Is there anybody here that has joined the civil council already?"*
>
> *Older citizen: "I have joined it a few times digitally. I have always been interested in politics. The civil council is a place where everybody wants to talk. It takes hours. And then it is organized digitally. The civil council gets streamed live in the philosophy that it has to be public. However, if you see the number of people that joins it, there is nobody there. So, people become averse to local politics, and then when it is digitalized, even more people tend to stop following it. If there are twenty persons following it, it will be a lot, I think.*

Adding to their skepticism and outspoken need for clear added value, older adults also perceive the traditional ways of engagement to be more successful, useful, and impactful. As one participant compared online and offline petitions, he sees additional value in the offline variant, stating that it was also an opportunity to gain more information from local inhabitants.

> *Older citizen: What is always interesting about city plans in my opinion, is whose proposal will eventually be accepted. Is it truly the one by political decision-makers or by an office, which says that no, it cannot be changed, too much to do. It has to do with many other things, not just planning, but of course that is something which affects us a lot. Back in the day, before the internet,*

you participated in civic engagement by signing a petition, because people went from door to door collecting signatures and that's how you also got information. I thought it was quite effective. I miss it a little bit, not everything has to be signed online. But of course, it is difficult to choose which one is better, it depends on the context.

5. **A dual-track policy from a top-down perspective is desirable to involve older adults in engagement activities.**

As a result of the barriers encountered by many older adults when using digital media, relying solely on digital means for civic engagements runs the risk of excluding a large part of the older adult population, something which is considered unfair by the respondents. Consequently, they advocate the use of a dual-track policy, marrying digital to non-digital channels, when policy makers expect engagement from older adults. To further this point, some participants mentioned how they feel like we, as a society, have become overly reliant on technology in our daily lives, to this degree that encountering technical errors may lead to the cancellation of activities when no non-digital alternative has been provided:

Older citizen: "I think that you have to follow two tracks. I'm not saying that technology has to be banned, but at the same time we note that – we just saw it - it was close or one of you guys didn't get any power anymore on their laptop [the laptop of one of the moderators had an empty battery]. What would you have done then? I mean, technology has a lot of promises, and it gets a lot more complex. But when it comes to it, in certain situations, we are left with something that doesn't work. I think it is kind of arrogant to say that technology will solve everything."

6. **Technology is met with some degree of skepticism due to higher policies and economical paradigms.**

In the Flemish focus group, a discussion was started on the relationship between technology and 'the powers that be'. Participants mentioned how sometimes, they get frustrated by a technology push from above, especially when the motives behind this push are not clear. More specifically, some participants stated a lack of trust with respect to the outsourcing of communication platforms to external companies like Zoom and Facebook as these activities also entail the partial privatization of participation and engagement initiatives. Local governments using the software of big non-European companies (e.g. MS Teams) is looked at critically by the participants, and was considered to be an example of a higher capitalistic paradigm where the choice for a certain technology can be reduced to an efficiency and profit-driven ethos, affecting even non-for-profit organizations such as local governments.

The participants skepticism towards online forms of civic engagement was further exacerbated by their dislike of sign-on requirements on platforms such as Facebook, as they do not trust the data-sharing policies of these big corporations.

In conclusion, older adults agreed on the use of technology in the context of citizen engagement activities, as provided that there is clear added value and on the condition that these technologies are not connected to privatized (foreign) platforms.

> *Older citizen: "The apps are a part of mobility. You can try to find answers on the level of the neighborhood as much as you want. But when it gets down to it, it all turns to one thing, because that is what it is. There is a whole industry regarding mobility, but actually… These apps are something totally different than what we are talking about. It's about self-driving cars and other stuff. Because that is something where they can get profits from. It has nothing to do with people getting their shoes dirty…"*

5.2 Gamification

5.2.1 General play behavior

To initiate the conversation on gamification, each focus group started the second part of their session by asking older adults what games they currently already play. A distinction was made between digital and non-digital games. The following table provides an overview of the games mentioned in the focus groups, subdivided in a few select categories:

Table 4: Overview of game mentions in focus group discussions

Game type	Game
Card games	Bridge
	Patience (digital)
	Black Lady
Board games	Connect Four
	Scrabble
	Man, Don't Get Angry (and adaptation: Parcheesi)
	Quina (ES)
(News)paper games	Crossword puzzles
	Word seeker and riddle games
	Sudoku
Puzzles	
Quizzes	

A cursory glance already reveals that older adults are mostly interested and engaged in traditional, non-digital games. There were no mentions of digital games - with the exception of Patience, which in itself is a video game adaptation of a traditional card game. The vast majority of participants, however, plays at least one game in one of the aforementioned categories. Card games in particular were strongly represented, followed by newspaper games. The other categories were mentioned but were not as

common. A small number of participants specifically voiced disinterest in ICT-devices for gaming purposes, and felt that this type of games was forced upon them.

Overall, older adults indicated that the role of gaming in their daily life is limited, both in terms of time spent indulging in game behavior and in terms of variety of games played. Most older adults do not attribute a large degree of importance to gaming in their lives, but they do engage in some playful activities. A minority of older adults indicated that while they did not spend much time playing games or find it important, play behavior still was part of the participant's day-to-day habitual life, with the gamified activity being codified into at fixed moment with a fixed partner. In conclusion, it must be noted that older adults' lack of engagement with digital games is more pronounced than initially expected by the researchers.

When probing into their motivations behind playing games, participants generally mentioned one of three main motivators: gaming as a form of escapism, gaming as a pastime, and gaming as a facilitator of social contact.

5.2.2 Epic meaning & calling

This core drive relates to people's intrinsic need for doing things for the greater good. The most common type of activity mentioned by participants is, obviously, charity work or volunteer work. The definition of what 'volunteer work' may entail ranged from helping organizations with large administrative tasks (e.g. filling in registers) to several forms of care activities directed at their local neighborhood or their close inner circle. Some older adults also mentioned examples of them crafting items such as blankets and macramé to donate to people who appreciate them or need them in their inner circle.

Another theme which older adults could relate to, albeit to a lesser extent, is sustainability. One older adult mentioned deliberately not owning a car for sustainability reasons, while another paid attention to primarily purchasing items that are sustainable.

When probing into their motivations for contributing to the greater good, older adults frequently mentioned a desire to help, common decency or humanity and a sense of usefulness as the main drivers. Remarkably, there was a strong agreement that volunteer work is not solely performed for the sake of contributing to a greater cause. Most participants agreed that there is also always the dimension of personal gain: feeling useful, receiving appreciation from others and nourishing a sense of pride were all motivational factors that added do their desire to do volunteer work. Additionally, the participants indicated that 'tackling loneliness' is not only something they do for others, but also for themselves, as a reciprocal, mutually beneficial act.

> *Older citizen: "But I have been a volunteer and they have given me more; I have received more than I have been able to give."*

Lastly, some older adults acknowledged that their level of involvement in activities for the greater good had diminished over time due to time constraints, health or family issues.

When applying these insights to the URBANAGE project, emphasizing the older adult's contribution to the greater cause and the direct impact they may have on their local neighborhood can be strong motivators for participation. Direct and clear communication on what happens with their input and feedback, strengthening their sense of usefulness, is therefore recommended.

Finally, it is important to consider that older adults too may be limited by barriers in their personal life, (e.g. time constraints, health or family issues). To maximize their engagement, the gamification techniques employed should be designed to not demand too great amounts of time and to allow for a certain freedom in when time is allocated to the collection of their input and feedback. In doing so, the accessibility of the gamified experience for older adults with reduced mobility or other health-related challenges should be kept to a minimum.

5.2.3 Development & accomplishment

Setting attainable goals in life for themselves was one of the drivers participants mentioned in the focus groups. In doing so, older adults identified two main categories of motivators as to why they set certain goals for themselves: physical fitness and cognitive ability.

Older adults often display an interest in staying physically active. To do this, they like to practice sports or to engage in light physical activities such as walking. Moreover, many older adults also express a marked interest in staying cognitively fit. Indeed, this was cited to be one of the main motivators behind engaging in certain forms of play such as crosswords, sudokus or puzzles. Learning new skills (such as a new language or craft) was also mentioned as a form of cognitive exercise that older adults may enjoy partaking in. Importantly, older adults indicate that the level of difficulty plays a significant role in their willingness to stay engaged in an activity, as being confronted with strong limitations or too-steep challenges may lead to demotivation and disinterest in continuation.

Another valuable insight gleaned from the focus groups is that older adults tend to set these goals for themselves, and do not feel a pronounced need to share their progress or goal completion with peers. While a sense of pride can factor into their desire to attain a goal, interest in sharing the completion of this goal is limited.

In spite of their limited interest in goal completion sharing, progress feedback mechanisms were perceived as potentially useful and likeable. For progress expressed in a numeric manner, older adults indicated that this is a 'nice to know' but that the fixation should not be on the numeric expression of the goal itself.

> *Older citizen: "Do I still possess the clarity of mind to solve this? Is my vocabulary still rich enough? [...] It's also nice when you can say to yourself: 'me and my partner solved this!', which gives us a sense of pride."*

Finally, older adults signaled that they enjoy the feeling of working together towards a goal and the resultant shared satisfaction upon reaching the goal. While they may also enjoy more competitive

games like card games and certain board games, the main driver is rarely winning but rather the shared experience of playing together.

To conclude, it can be stated that 'Development & Accomplishment' is a potentially valuable engagement driver for civic participation. In doing so, however, it is important to note that the focus should not be on competitive goals or achievement comparison, but rather on cooperation towards a shared goal that must be attainable. Ideally, the activities contribute to their physical or cognitive abilities, while keeping the challenge light enough so as to not confront them too strongly with the potential decline in these abilities. An engagement strategy based on 'Development & Accomplishment' can thus be a powerful tool but may require a few rounds of iteration to find the right challenge-skill balance. To add to this, the implementation of progress feedback mechanisms can reinforce the sense of accomplishment when the focus is not on the personal contribution or input of a participant, but rather on their consolidated progress towards the shared goal.

5.2.4 Creativity, empowerment & feedback

For the participants in these focus groups, creativity and empowerment are mainly expressed in arts & crafts. Older adults mentioned examples of crafting items that can be considered both aesthetic and/or useful, such as 3D cards, knitting and quilting, making rugs, and macramé or paper baskets. They proposed that not only the process of crafting delights them, but that they also enjoy seeing the results of their creativity. While they did not express great interest in receiving feedback on their work, they do like to share their interest with other people and enjoy distributing the tangible results of their creativity as gifts to a community cause or as a present to their inner circle.

> *Older citizen: "Yes, at the course. When I go to the weaving course to make rugs with the loom, it's nice to talk to others about my own work."*

When probed about game principles, strategic thinking was often provided as the main driver for enjoying games (see, for example, playing Connected Four or completing a sudoku). This in in line with the previous insights, as strategic thinking is a driver contributing to the maintenance of cognitive abilities.

In conclusion, "Creativity, empowerment & feedback" can be used as a core driver to solidify the engagement of older adults, but the focus should not be on triggering feedback between older adults. Instead, older adults may be motivated to participate in creative processes that produce tangible products, for example in the domain of arts & crafts. Additionally, introducing a minor element of challenge as a gamified principle to the engagement strategy may bolster its appeal as strategic thinking was considered a main motivator for game enjoyment. This finding is concurrent with the preference for working towards attainable goals as mentioned in the previous section.

5.2.5 Ownership & possession

There was a general agreement among participants that ownership & possession are not concepts they hold dear. Participants rather voiced that with age, they increasingly lost interest in and detached themselves from materialistic possessions. Some older adults did speak fondly of nostalgic objects that either reminded them of deceased friends and family members, or that were passed on to them. Even so, they tended to express a need for detachment from these objects, although this could be experienced as somewhat difficult at times.

> *Older citizen: "I think of myself as being in the phase of detachment. It has to do with a lot of deaths in my area."*
>
> *Moderator: "Detachment."*
>
> *Older citizen: "My husband is gone. My father is gone. I'm like pff. So hence the things that I have, where can that go. I practice detachment. Not in possession but in detachment."*

To conclude, it is recommended to attach low importance or priority to the need for ownership & possession when designing an engagement strategy for older adults, as this core driver did not resonate with the target audience.

5.2.6 Social influence & relatedness

Social influence & relatedness was seen as a key motivator for engaging in activities and games. While some older adults preferred to play games alone, many specifically mentioned socializing and connecting to other people as the main reason for engaging in those types of activities. In those cases where participants preferred to play together, one-on-one activities or smaller groups appeared to be preferred. This insight is in line with previous findings on how participants engage in volunteer work partially out of a desire for social contact. Moreover, these insights also corroborate the idea that older adults prefer to play together or collaborate towards a common goal rather than engage in strong competition or compare goal progress.

> *Older citizen 1: "They played quina and cards and that's it."*
>
> *Older citizen 2: "Board games too."*
>
> *Older citizen 1: "And they socialize and socialize."*
>
> *Moderator: "Sure, and they're chatting for a while, if only..."*
>
> *Older citizen 1: "And they see those of us who go to the office there and say hello."*
>
> *Older citizen 2: "It's just that it's very [far away]."*

> *Moderator: "And usually those games, what do you prefer: playing with other people or playing...?"*
>
> *Older citizen 1: "With other people."*
>
> *Moderator 1: "It's better, isn't it, because it's playing and also being with someone, isn't it?"*
>
> *[...]*
>
> *Older citizen 1: "And loneliness, loneliness is very difficult"*

In light of these findings, it can be concluded that the strongest driver for engagement is social influence and relatedness. Therefore, it is recommended to strongly embed this driver in any engagement strategy directed towards older adults, without social contact becoming a necessity or requirement for participation. This way, the minority group that prefers to collaborate without explicitly engaging in close social contact will not be excluded. In addition, it can be argued that the desire for socialization should be stimulated through collaboration rather than through competition as older adults prefer to engage in activities where they work together towards a shared goal.

6 General conclusions & engagement strategy

This final chapter summarizes the raw analysis as briefly reflected in the previous chapter and transforms it into guidelines for an engagement strategy to strengthen citizen engagement tools and efforts to improve the participation of older citizens. As such, the conclusions and development of the engagement strategy are combined into a single closing chapter.

These recommendations will be structured in a manner similar to the theoretical frameworks and analysis. First, general recommendations for older citizen engagement will be described. Second, recommendations regarding digital citizen engagement will be discussed. And lastly, the recommendations regarding gamification techniques among older citizens will be discussed.

On a final note, it was originally intended to also report findings on potential regional differences. The results from the focus groups, however, did not reveal any noticeable differences between the different pilot sites involved. This strengthens the notion that the following engagement strategy guidelines are relevant in equal fashion to all pilot sites and can be widely applied by other policy makers and projects that intend to engage older adults.

6.1 Guidelines for citizen engagement

Guideline 1: Create an offer of engagement activities to which older citizens with different levels of commitment and engagement can contribute. The older adult needs to be free to choose whether

they want to engage in inbound or outbound activities, or non-institutional or institutional activities.

Not all older adults want to contribute on an outbound and organizational level. While many older adults express a desire to contribute in general, they also note that they easily get demotivated when they are expected to commit on the long term. Additionally, intrinsic motivation and interest in the topics of the activities may also impact whether or not the older adult wants to contribute to these activities.

Guideline 2: When older adults engage in long-term commitments, offer a sufficient amount of consistency and structure in terms of structural support and financial resources.

Older citizens who were already engaged in neighborhood-improving activities in the past tend to get demotivated by bad experiences such as diminished or lacking structural support or financial resources, as they become increasingly burdened with responsibilities. Consequently, they may no longer want to commit to future engagement activities.

Guideline 3: Promote self-efficacy. Show older citizens that their efforts to improve the neighborhood have a clear and tangible impact.

Many older adults express a desire to have impact on improving their neighborhood. Hence, making this result tangible and visible for them and other neighborhood inhabitants may create an extra layer of motivation for contributing to their neighborhood. Local institutions are encouraged to provide a consistent bottom-up feedback loop, for instance by providing prompt answers to questions, or by allowing citizens to follow up on the status of their input. This feedback loop is preferably provided on a communicational, executive and policy level, e.g., by clearly communicating the potential impact of future engagement activities in advance.

6.2 Guidelines for digital citizen engagement

In the following section, guidelines are discussed for digital citizen engagement activities in particular:

Guideline 4: When applying new technologies in citizen engagement activities, clearly state the added value of these new technologies.

Older adults do not refuse the use of technology, but they attach great importance to its practical added value. There needs to be sufficient reason to turn away from the more traditional modes of communication and engagement in neighborhood activities. Answering the question why it cannot be done in a traditional way or explaining the advantages of the new technology over the traditional alternatives is therefore recommended. This can be done by informing them about the practical benefits or the ease of use, and by helping them understand the technology (especially when the technology is still in the early adoption phase).

Guideline 5: When applying new technologies to engagement activities for older adults, communicate transparently about why local policy makers want to apply this technology.

Older adults tend to be skeptical towards new technologies, in part because of a distrust of the underlying motivations inspiring policy decisions or of the underlying economical paradigms. By informing them in a clear and transparent manner on the reasons behind these decisions, older adults can be expected to better understand and accept the new technology.

Guideline 6: Apply dual-track policies. When applying new technologies for neighborhood-improving activities, also offer non-digital alternatives for older citizens who will not, or cannot, use these new technologies.

Not all older adults are capable of using new technologies because of barriers that cannot easily be lifted. These barriers can be practical (no access to an ICT-device) or psychological (resistance to learning new skills, insufficient cognitive capacities or a lack of a supporting social network to assist them in acquiring the necessary skills). By offering only the new technology as a gateway to participation, a significant number of older adults may be excluded or discouraged to participate. The same reasoning can be applied to modes of communication with older adults. Being informed is an important factor in increasing the engagement among older adults, but not all older adults use digital channels. Proper communication flows therefore include both digital and traditional media and channels (e.g. brochures, physical maps, screens in busses, local newspapers, etc.)

6.3 Guidelines for the implementation of gamification techniques

During the focus groups, five potentially positive motivators from the Octalysis framework for gamified engagement were discussed. Based on the feedback collected in these discussions, advice can be formulated towards designers and policymakers on which core gamification drivers to include when devising an engagement strategy for older adults. As such, the following guidelines for designing a gamified engagement strategy for older adults were formulated:

Guideline 7: Social influence & relatedness should be at the center of the engagement strategy for older adults, as they are the strongest motivator. In contrast, ownership & possession can be disregarded as a core motivational driver.

The findings from the focus groups indicate that the need for social contact is the strongest motivator for engagement in games and activities. Thus, it is strongly recommended to introduce and implement these elements in a gamified design for engagement. However, it must also be noted that the social component should not be presented as a necessity or requirement for participation, as this may exclude a minority of older adults who prefer to contribute to a shared goal without needing explicit social interactions.

Conversely, ownership & possession should not be considered a core component for designing a strategy for engaging older adults, as results indicate that older adults generally care very little about this driver. Instead, they voice feelings of detachment from materialistic objects, which they consider increasingly meaningless or valueless.

Guideline 8: In developing an engagement strategy, collaboration towards a shared goal is preferred as a driver over strong competition

While light competition, such as one experiences when playing certain card or board games, is not rejected by older adults, forms of stronger competition are not considered feasible or desirable by them. Older adults prefer game mechanics that promote collaboration, preferably in dyads or small groups. In addition, their preferred strategy seems to be one where they work together on a path towards a clear, shared goal.

Guideline 9: In setting goals, it is necessary to find the right balance between attainability and challenge difficulty.

As stated, older adults prefer to collaborate towards a shared goal. While there is room for strategic mechanics or creative output as means to reach this goal, it is important to balance the resulting level of difficulty with the right level of attainability so as to not discourage participants. In this respect, we recommend keeping the difficulty level suitable low and limiting the game mechanics to a few easy-to-understand principles to ensure long-term engagement among older adults.

Guideline 10: To keep older adults engaged, it is necessary to highlight the greater cause and to communicate the impact of their input.

Older adults like to contribute to a greater cause, on the condition that the cause is clear and that their impact or contribution to the cause is made explicit. Communicating about the potential impact they may have can therefore bolster their sense of usefulness and increase motivation levels. Additionally, regular updates about the impact of their input or feedback may close the loop and is strongly recommended for ensuring long-term engagement. Lastly, it is important to consider that older adults may experience personal issues (e.g. health or family-related) or time constraints that can prevent them from committing to previous or desired levels of engagement. Thus, we advise to apply flexible and adaptable strategies with respect to time commitments, as well as an inclusive approach to potential health or mobility-related issues.

6.4 Closing remarks

With these guidelines, this deliverable contributes to the development of more adequate strategies, tools and methodologies for the engagement of older adults in data-driven policymaking. By means of a series of focus group sessions at different pilot sites, we explored current practices and tools for citizen engagement of older adults, and identified needs, barriers, and opportunities for participation by older

citizens. Additionally, a contribution was made to a better understanding of how gamification techniques can enhance the engagement levels of older adults. These insights and guidelines should enable policy makers to enhance and adapt future engagement strategies.

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8 Annex

A. Overview Focus Groups

- All locations were chosen for their accessibility (reachable by public transport, toilets available, comfortable seating etc.).
- All focus group sessions took place outdoors, to ensure compliance with local covid-19 regulations, and to reduce the risk of infection.
- Each focus group aimed for:
  - 8-12 participants.
  - 50-50 gender split
  - Older adults of different age brackets (focus on those aged 65 and over, as this group is most likely to experience accessibility issues related to the public domain).
    - This target was hard to achieve as some recruitment channels (e.g. Flemish recruitment partners) did not provide this info prior to the session.
  - If possible, each focus group tried to have at least one person with a disability present.

| Focus group	Santander (by SANT)
Date	22/07/2021
Location	Finca Altamira, P.º del Gral. Dávila 73, 39006 Santander
Sample size	13
Sample description	
Gender	3 male, 10 female
People with disability	No
Age	From 68 to 88. Average age: 76.7
Focus group	**Helsinki (by FVH)**
Date	12/08/2021
Location	Vuotalo Mosaiikkitori 2, 00980 Helsinki
Sample size	9 (13 registered, 4 no shows)
Sample description	
Gender	2 male, 7 female
People with disability	No
Age	From 65 to 82. Average age: 70.1
Focus group	**Flanders (by IMEC)**
Date	13/07/2021
Location	Bibliotheekstraat 1, 9000 Ghent, Belgium
Sample size	11
Sample description	
Gender	7 male, 4 female
People with disability	Yes, two participants with a disability.
Age	Not known for all participants. Average age for those known: 75.3.

Pictures of the focus group sessions

Santander

Santander focus group: setting
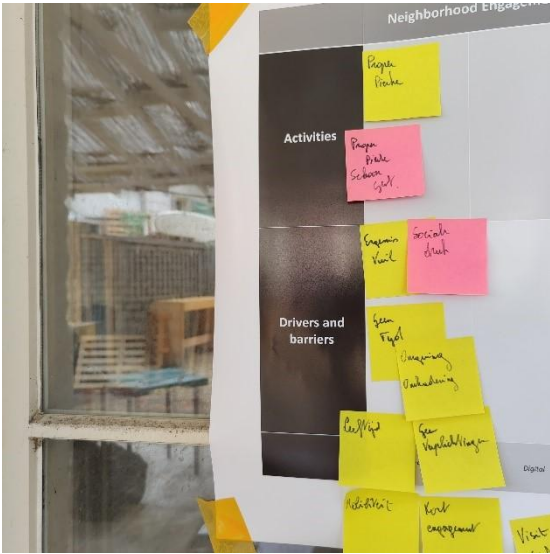

Santander focus group

Flanders
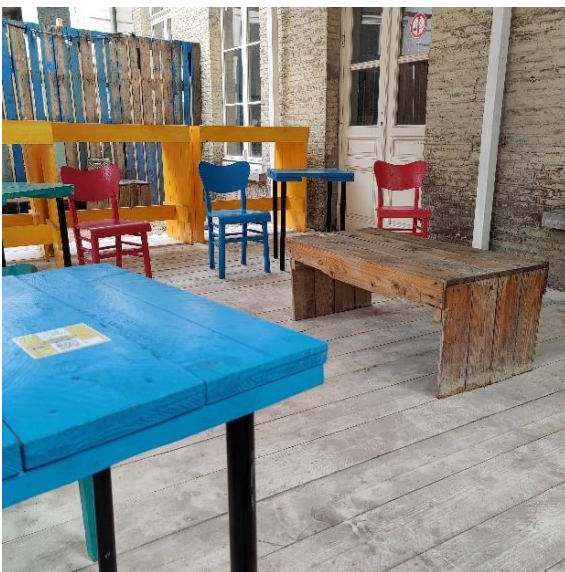
Flemish focus group: setting

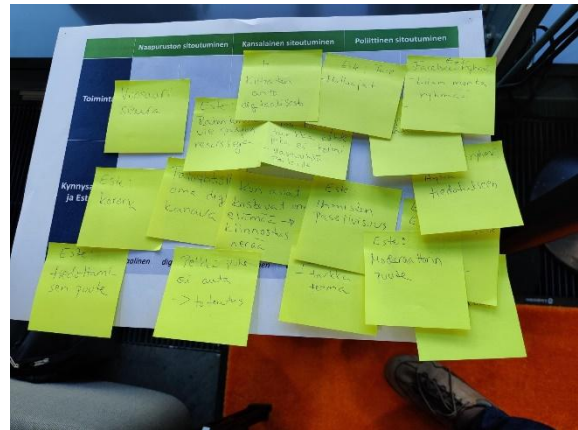*Flemish focus group*

Detail from Flemish focus group

Helsinki

Helsinki focus group: setting

Detail from Helsinki focus group

B. Script / preparatory guidance document

Before D-DAY

Ensure you obtain the following practicalities:

- Writing materials
  - o **a pen for each participant** and **two large marker pens** for writing on boards
- Post-its
- A whiteboard, flipchart or alternative to display A1's
- Coffee and cake/snacks (or an order, so that they are fresh on the day itself)
- 2 recorders
  - o **IMPORTANT:** test the recorders in the recording environment beforehand to ensure audio quality is appropriate and technical issues on the day itself can be avoided.
  - o Position these recorders on a place where every occupant is hearable, including the focus-group moderator. This can also be tested on the day itself.
  - o It may be necessary to download additional software for the microphones/recorders.
  - o If possible: a back-up recorder could be useful

Ensure the following documents are printed:

- 2 topic lists (or 4 to include scribes) for the moderators
- A1 Engagement matrix table
- Printed pictures of engagement examples
- A1 general Octalysis framework
- A1 for EACH Octalysis Core Drive
  - o Ensure that you have all 5 core drives present
- 1 Octalysis score card
- Informed consents (for EACH participant)

On D-DAY before participants arrive:

- The full set-up of the focus-group area can be found in appendix. This does not need to be followed strictly. But make sure all the practicalities are at a convenient place.
  - o Prepare the seating areas for two groups, ensure everyone has a seat (Order the seats in a circle with respect to the corona-safety measurements)
  - o Make sure both seating areas have a (large) table for materials to be displayed on
  - o Put the coffee and cake/snacks on display on a separate table

- Ensure the A1's are able to be displayed clearly in a manner so that everyone can see them.
- Check that the recorders are indeed recording!

On D-DAY:

1. **Welcome everyone and assign seating. Ensure everyone feels comfortable.**
2. **Pass out a pen and an informed consent to each participant**
3. **Explain the goal of the focus group**

"Hello, everyone…"
"We want to make our city a better city for aging citizens. Therefore, we are here today with you to learn from you on how…
You currently are involved in the city and city initiatives, or maybe you are not involved at all, and we would like to know why.
How we can motivate you best to be involved in the city and its initiatives.
To create a city that's a better place for you.

For more inspiration, see slide deck.

4. **Reassure and put at ease participants:**

Remember, there are no right or wrong answers. You are the experts and we are interested in your attitudes, opinions, wants and needs. We need your help!

5. **Explain the informed consent and have everyone sign it. Answer any questions about the form that may pop up.**

6. **Explain the timeline and course of the focus group**

- Two groups
  - One about civic engagement
  - One about what motivates you and how game elements are connected to this
  - Everyone does both groups
  - Each group for approx. 50min
  - 20-minute pause in between for toilet breaks and coffee table

7. **Start focus group** (see topic list)

8. **Thank everyone at the end of the focus group!**

Thank you all. With your combined ideas we can create a better understanding of what we can do and how we can remove barriers to work towards making cities a better place for you. We will now take your input and concretise it. In October, we will organise a interactive session where we work together to create concepts to improve well-being in the city. If you are interested to help us further, you are always welcome to.

Other:
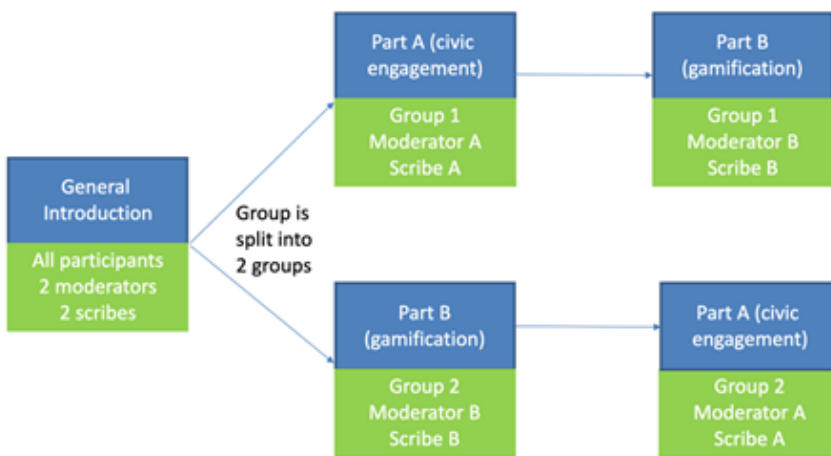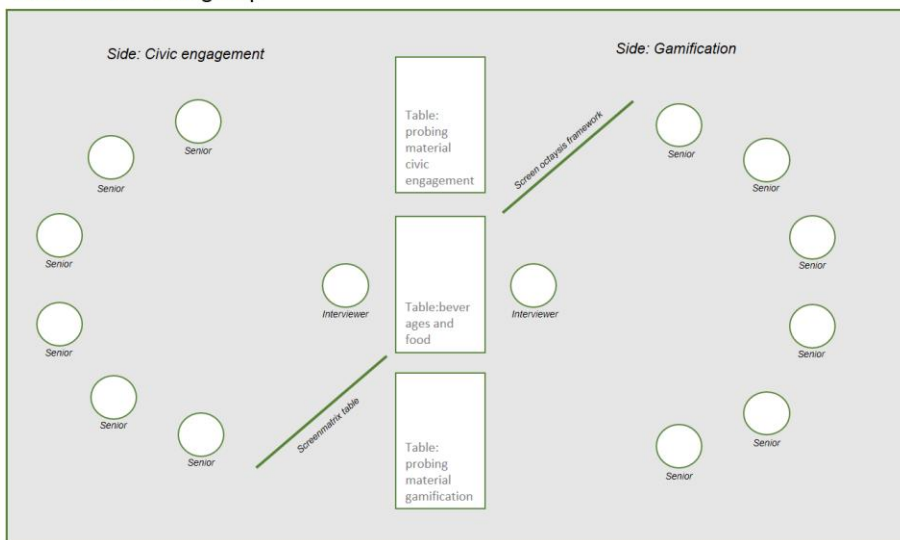
Note: with screen we mean a way to display the A1's, not a computer/ TV screen. This could be, for instance, hanging the paper against a wall, on a flipchart, etc. You couls also lay out the A1 on a table.

C. Topic guide focus groups

Overview and structure focus group guide

- **Part 0: Introduction "senior's neighborhood" (10min)**
- **Part I: Citizen engagement among older citizens (50 min)**
  - **I.I Older citizen engagement**
    - Older citizen engagement "as is". (25min)
    - Older citizen engagement "digital"(25min)
- **Part II: Gamification for senior citizen engagement**
  - **II.I Current game behavior**
    - General
    - Games on phone/tablet
    - Motivations to play
  - **II.I Gamification in the daily life of the senior citizens**
    - Epic meaning/calling
    - Empowerment
    - Accomplishment

Topic list

Part 0: Introduction "senior's neighborhood" (10min)

"Hello my name is XXXXXXXXX, I am researcher for XXXXXXXX. I conduct research regarding engagement of ederly citizens in their neighborhood. We appoint engagement as: "A wide variety of activities where senior citizens engage in, in order to improve the direct neighborhood". To gain insights in this matter, we are here today to discuss how engaged you are within your neighborhood and how we can help elderly citizens in order to strengthen their engagement. In this first part we will discuss how you are engaged today and what barriers you might experience in terms of your engagement."

The interviewer starts the focusgroup with an introduction round:
- *Recording, informed consent*

"We will start with a little introduction round. In order to do this, we will introduce ourselves by telling our favorite activity during a regular day where you use the public space (E.g. visiting a park, going to the grocery store, drinking a coffee,…). What drives you during the day? After this round we will proceed with the focusgroup."

The interviewer starts with introducing him/herself, then all the seniors do the same.

Part I: Civic engagement among older citizens

I.I Older citizen engagement "as is" (20 min)

The interviewer shows a few pictures/ examples (these can be found in the extra document in the project repository) of engagement activities. The interviewer explains what the meaning of the pictures are and discusses them with the seniors by using the questions below. Within the discussion, activities are being identified together with the corresponding drivers and barriers which the older citizens experience during engaging in these activities. Here, the interviewer uses examples from the following dimensions:

- *Neighborhood engagement: non-digital*
- *Civic engagement: non-digital*
- *Political engagement: non-digital*
- *Top-down communication: non-digital*

*/**Note to the interviewer:** Make sure that these examples originate from the context of your area. The examples in the document originate from the context of the city of Ghent./*

According to the input of the older citizens, the interviewer can choose what pictures/ examples to use. We recommend to use at least one picture per form of engagement and one for top-down communication (four in total for this phase).

Questions during the first phase:

- *Did anybody already do some of these activities?*
  - *Can you describe what you did?*
  - *Why do you like these activities?*
  - *If you don't like these activities, why don't you like them?*
- *Are there other activities where you can show your engagement towards your neighborhood that you like to share?*
  - *Would you like to do these activities more often?*
  - *If no, why don't you want to do these activities more often?*
  - *If yes, what is holding you back to do this? When the older citizens mention barriers, the interviewer probes on these barriers to fully understand them:*
  - *Why do you experience this?*
- *Can you explain why you feel this way?*
- *Would you be open to share your own data to add to this example?*
- *When the activities are being discussed, the interviewer asks for drivers and barriers the older citizens experience during the activities.*

The activities that are being discussed during this phase are written down on post-its by the co-moderator. These are then put on the matrix-table (attachment).
When the older citizens mention drivers and barriers during the discussion, these are also written down on post-its and then put on the matrix-table in the right colomn and line.

*/**Note to interviewer:** when asking questions, consider the mechanism where inbound engagement can be manifested in outbound engagement. E.g. when some things regarding the neighborhood are being discussed in a café, will they engage in communicating this towards outbound engagement. Will the senior escalate this in a neighborhood council? If yes, how do they do this?/*

I.II Transition to "Older citizen engagement "Digital"". (5 min)

The interviewer explains that in the next phase of the focus-group we will discuss the technological aspect of neighborhood engagement.

"Ok, in the next phase we would like to talk about how technology can help in this neighborhood engagement. But before we go to the second phase I want to ask who in the group has a smartphone?"

The interviewer shows his own smartphone and asks the following questions:

- Who owns a smartphone?
- Why do you own this?
- When do you use your smartphone?
- For what do you use your smartphone?

"Ok, so now we will further discuss the role of technology in neighborhood engagement. Therefore, we brought a few other examples."

The interviewer starts showing the examples and enters the third phase of the focusgroup.

I.III Older citizen engagement "Digital" (25 min)

In the second phase, we apply the exact same structure as in the first phase:
The interviewer shows a few pictures/ examples (these can be found in the extra document in the project repository) of engagement activities. The interviewer explains what the meaning of the pictures are and discusses them with the seniors by using the questions below. Within the discussion, activities are being identified together with the corresponding drivers and barriers which the older citizens experience during engaging in these activities. Here, the interviewer uses examples from the following dimensions:

- *Neighborhood engagement: digital*
- *Civic engagement: digital*
- *Political engagement: digital*
- *Top-down communication: digital*
-

*/**Note to the interviewer:** Make sure that these examples originate from the context of your area. The examples in the document originate from the context of the city of Ghent./*

According to the input of the older citizens, the interviewer can choose what pictures/ examples to use. We recommend to use at least one picture per form of engagement and one for top-down communication (four in total for this phase).

Questions during the second phase:

- *Did anybody already do some of these activities?*
  - *Can you describe what you did?*
  - *Why do you like these activities?*
  - *If you don't like these activities, why don't you like them?*
- *Are there other activities where you can show your engagement towards your neighborhood that you like to share?*
  - *Would you like to do these activities more often?*
  - *If no, why don't you want to do these activities more often?*
  - *If yes, what is holding you back to do this? When the older citizens mention barriers, the interviewer probes on these barriers to fully understand them:*
    - *Why do you experience this?*
- *Can you explain why you feel this way?*
- *When the activities are being discussed, the interviewer asks for drivers and barriers the older citizens experience during the activities.*
- *Would you be open to share your own data to add to this example?*
- *Specific for the example of "Top-down communication":*
  - *If you could get notifications regarding constructions works, public transport,… would you like to get this on your smartphone?*

The activities that are being discussed during this phase are written down on post-its by the co-moderator. These are then put on the matrix-table (attachment).
When the older citizens mention drivers and barriers during the discussion, these are also written down on post-its and then put on the matrix-table in the right column and line.

"Ok, we will end this part of the focusgroup here. In the other part, we will discuss how games can help elderly citizens in engaging in the neighborhood."

Part II: Gamification for older citizen engagement (60 min)

The interviewer will now explain that we have arrived to a second part of the focus groups, related to game behavior of the senior citizens.
The interviewer will start with questions related to general game behavior, both offline and online.

III.I Current game behavior

"Do you play games? This does not mean digital games, this could also be board games, card games (chess, a quiz, bingo, etc.).

- *What kind of games do you play?*
- *Do you play alone or with other people?"*

Games on phone/tablet/computer

"Do you sometimes play games on your phone? On a tablet? On a computer?

- *What kind of games do you play on your phone/tablet/computer?*
- *Do you play alone or with other people when playing games on your phone/tablet/computer?"*

Motivations to play

- What is it that you like about the games you play?
- What motivates you to play the games you play? (do you play for the competition? the challenge? for social reasons?)

III.I Gamification in the daily life of the senior citizens

The interviewer will now explain the concept of gamification.

"Sometimes, game elements are used as a tool to motivate people to engage in certain activities. When we talk about this, this is called gamification. It's about using things you like about games or elements from games in daily life or activities that are not games. This is often used to make unpleasant tasks more fun or the engage people to participate in certain activities and/or increase their loyalty towards their brand."

A good example of gamification is for instance, collecting 'points' in the supermarket that after a certain amount you can exchange for a discount coupon."

Think also, for instance, about an auction. You are buying something, but when you have the highest bid, it can feel as if you've 'won'.

- *Can you maybe give some other examples of such a gamification technique present in your daily life?"*

The interviewer will now discuss several gamification techniques
according to the Octalysis framework (Chou, 2013).
Supporting material: picture of the framework printed on A1, as well as A1 for each of the five core drives

"We can divide 'gamification' into several categories, of which we will discuss 5 today:"
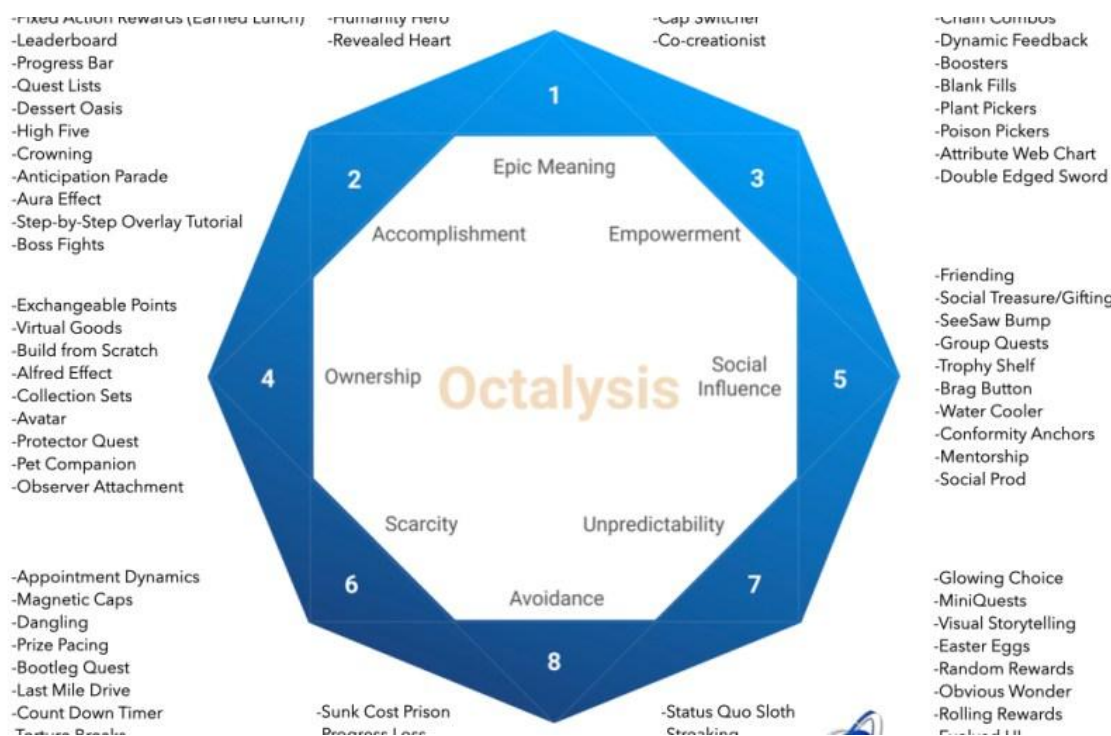
Core drive 1 - Epic meaning & calling

"You doing something for a greater cause or goal believing that you can have a role in making an impact."
<Example if needed: Think about: donating to a cause, buying a brand because they are more sustainable or because they donate part of the profits, helping people, etc.>

- *Can you think of activities or actions you engage in just for the sake of doing something for a greater cause or goal or because there's a greater goal connected to it*
- *Can you describe what motivates you to engage in these activities?*

Core drive 2: Accomplishment & development

"This refers to our internal motivation and drive to tackle challenges and making progress. The goal or reward is not the most important thing, or the reward you receive, but it's about overcoming the challenge itself. Think about that feeling you get when you actually feel yourself improving at something or when you reached a goal you wanted to reach."

<Example if needed: Think about counting calories or (kilo)grams when trying to reach weight loss goals and reward yourself with a cheat meal every now and then>

- *Can you think of activities you engage in where you are kept motivated/engaged because you really wanted to get better at it or you wanted to achieve a certain goal or reward? Or making progress/improving yourself?*

- *Can you describe elements of those activities that keep you motivated to keep engaged in the activity?*
- *Were you able to keep track of your progress? Was there a reward or did you reward yourself for achieving the challenge?*

Core drive 3: Empowerment

"This refers to the drive for people to express creativity, seek strategies and combinations, get feedback and adjust."

<Example if needed: Think about: knitting, building things (LEGO's, model planes/trains), drawing, painting, music,…>

- *Can you think of activities that really draw you in because they allow you to express your creativity?*
- *Can you describe elements of those activities that keep you motivated to keep engaged in the activity?*
- *Do you sometimes share your creative work with other people? What motivates you to do this?*
- *Can you think of activities that keep you engaged because they involve a lot of strategy or the making of meaningful choices?*

Core drive 4: Ownership & possession

"This refers to motivations that stems out of the feeling that the person owns or has control over something and results in the person trying to improve, protect and/or accumulate further. This can be something (digitally) material, but can also be over a process, an organization etcetera."

<Example if needed: Think about: being rewarded with coupon codes after a certain level of input or engagement in activities. Getting points you can exchange for every day your data is being logged, you can then exchange for rewards.>

- *Can you think of activities you engage in in your daily life because you receive something for it in return? (for example: points in the supermarket)*

- *Is there something in your daily life you are proud of owning? think about: pets, old-timers (and taking care of them)?*

- *Is there something in your life you put a lot of effort into to obtain?*

Core drive 5: Social influence and relatedness:

<Example if needed: participating in a competition or game for the sake of the competition with others or just for the sake of being together, in a group>

"This refers to the motivation that comes from social elements. This includes a need for connecting through mentorship, social feedback, companionship, but can also relate to competitiveness and feelings like envy."

- *Can you think of activities you engage in your daily life because it results in social interaction?*