Aalto-yliopisto
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DESIGN
FOR
GOVERNMENT

Streets ahead

Integrating streets in the accessible travel chains

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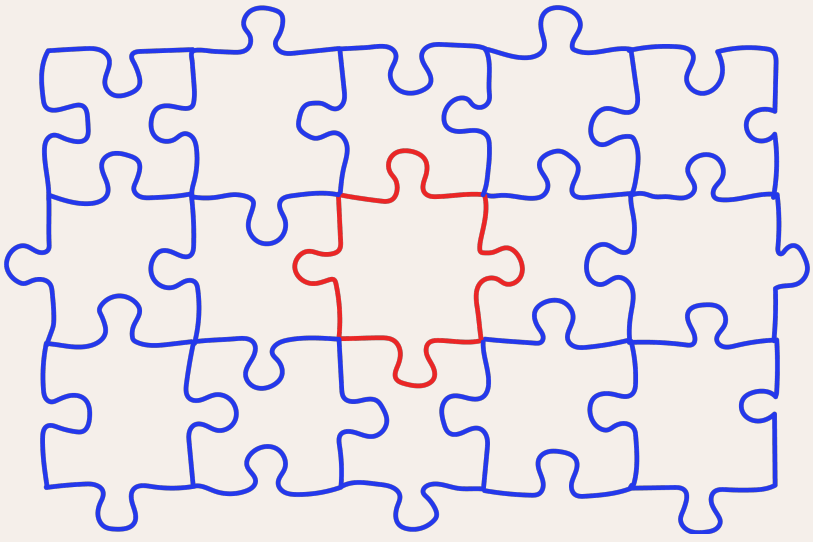


Glossary

When studying the public transport chains some specific jargon is used. Below is a selection of those terms you'll come across when reading this report.

Digiroad

Digiroad is a national database that contains the geometry of the Finnish road and street network featured with the most important road attribute data. It is in use free of charge as open data and taken care of by VÄYLÄ, municipalities and ELY.

Digitraffic

Digitraffic is a service operated by Fintraffic offering real time traffic information.

Digitransit

Digitransit Platform is an open source journey planning solution that combines several open source components into a modern, highly available route planning service.

Door-to-door

A concept that considers a travel in its all, from the departure door to the arrival door

First and last mile

A concept that emphasizes the portion of the travels that are usually walked by the travelers. Typically they are the distances between the traveler's starting point and the first transportation vehicle and at the end of the travel after the last vehicle and before the final destination's door.

MaaS

Mobility as a service (Arias-Molinares, 2020)

TEN-T

Trans European Transport Network is a key instrument for the development of coherent, efficient, multimodal, and high-quality transport infrastructure across the EU. It comprises railways, inland waterways, short sea shipping routes and roads linking urban nodes, maritime and inland ports, airports and terminals (European commission, 2023).

Transport travel corridors

Axes of importance to transport goods and/or people in Europe and getting subvention to be developed in priority. Finland is part of two of those corridors the North Sea-Baltic and the Scandinavian Mediterranean TENtec Interactive Map Viewer

Travel chain

A travel that includes more than one transport mode.

Rail (or track) gauge

Is the distance between the two rails of a railway track. All vehicles on a rail network must have wheelsets that are compatible with the track gauge. Since many different track gauges exist worldwide, gauge differences often present a barrier to wider operation on railway networks. (Wikipedia, 2023) In most of the European tracks the gauge is 1435 mm but in Finland it is 1524 mm. This is a challenge to connect trains in Europe (European commission, 2023).

Main actors of the public travel chain in Finland

LVM : Ministry of transport of communication

Governmental agencies
Väylävirasto, Väylä: Finnish transport and infrastructure agency
Fintraffic: Traffic management public agency
Trafficom: Finnish transportation and communication agency

Regional level
ELY: Centre for Economic Development, Transport and the Environment. The Ely centers are responsible for the regional implementations and development tasks of the central government.

Service providers
Operating at National scale
VR : Government owned railway company on national level.
Onnibussi: Private coach operator
Matkahuolto: Finnish service and marketing company for bus transport of people and goods.
Operating at Regional scale
HSL: Helsinki Regional Transport Authority
Nysse: Tampere Regional transport Authority

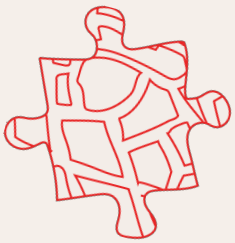
Executive summary

About the course

Design for Government (DfG) is an advanced practice-based course within the Creative Sustainability master program at Aalto University.
Throughout the course, the students collaborate each year with different ministries, agencies, regional and municipal administrations to tackle current national-level policies through a project brief.
During the last three months, the students have been working on two different project briefs, where our group has collaborated with the Ministry of transport and communication, with the project “Accessible travel chains”.

Accessible travel chains

The project brief addresses the current challenges of making the transport options and mobility services in Finland accessible for all. The project brief is part of the National Transport System Plan for 2021-2032 (LVM, 2020), which is the national strategy, guidelines and vision for the Finnish transportation system for a long term perspective.



Our focus

Since three groups had the same brief, we decided to divide the focus areas to cover more ground, and offer our partners a more comprehensive set of proposals. Meanwhile some groups focused on the digital aspect of accessibility, we wanted to focus on the traveler’s experience, and the practicalities regarding accessibility from the start to the very end. In other words, the first and last mile is a small piece in the bigger journey, yet essential to make the travel fully accessible. Therefore, we saw it as a valuable piece to include in the national transport strategy, and came up with the proposal The Task force.

“If you don’t know what it means, you’re streets behind”

— Urban dictionary

Human-centered research

The first stage, or in other words, the research phase started in March with a particular focus on human-centered research, meaning that the users and stakeholders concerned by our brief are at the core of our research.

Throughout our work, we have been following the double diamond framework (see Figure 1) This framework shows two objectives, at first learning about our topic and brief, identifying challenges, and in a second phase developing solutions turning the previously identified challenges into opportunities. Therefore, rather than simply assuming what the problem is, we saw the value of actively reaching out and speaking with people who are affected by the issues of the accessible travel chains.

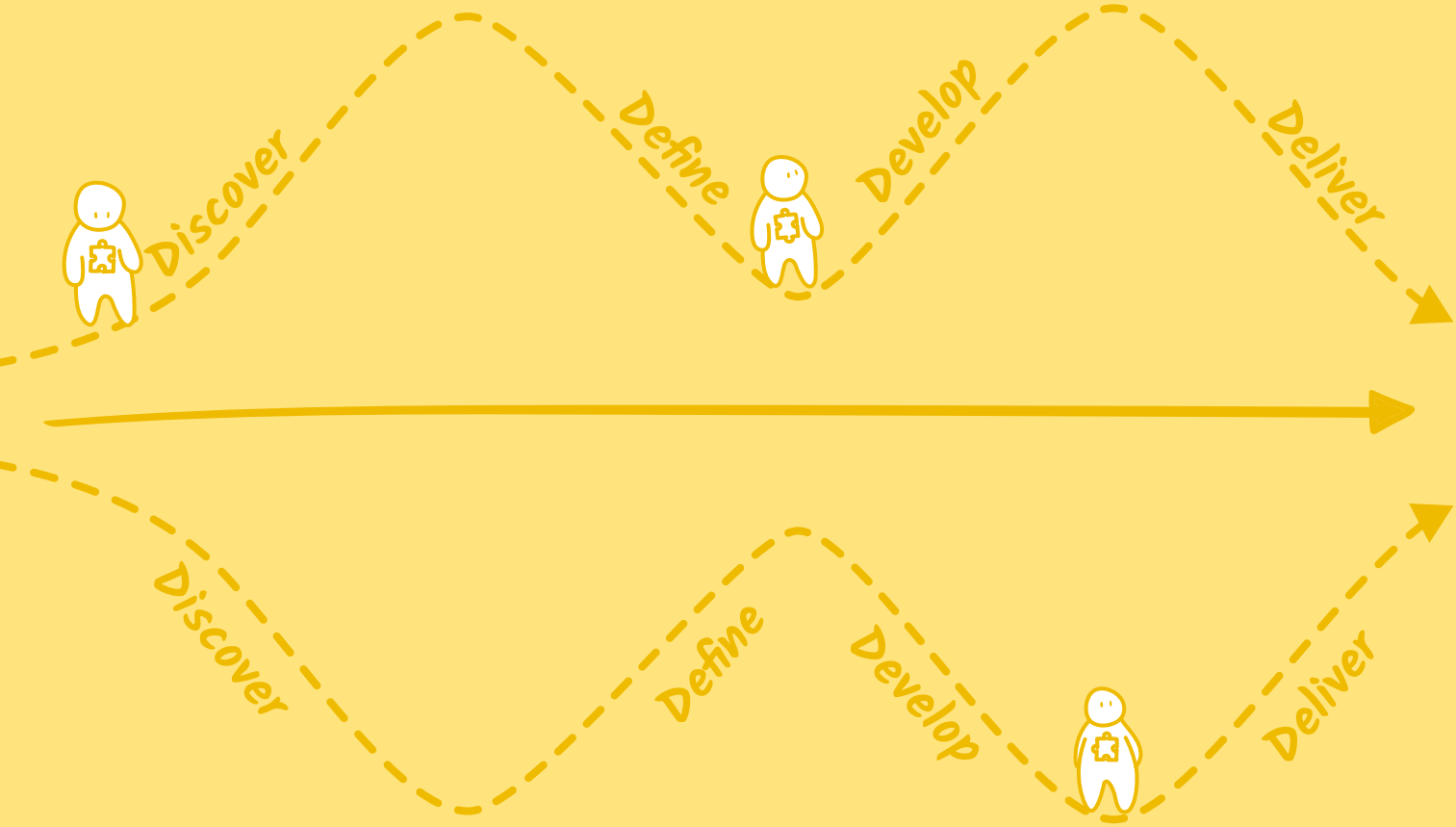


Figure 01 — Visualization of the double diamond framework (Design Council)

Figure 02 — Roundtable

Roundtable

Together with the other groups involved in the project brief, we organized a roundtable discussion with our main stakeholders, which was held on the 8th of March 2023. The main stakeholders consist of representatives from Trafficom, the Ministry of transport and communication (LVM), VAYLA and Fintraffic.
The aim of the roundtable discussion was to unpack the brief, highlight the challenges perceived by each party, and to understand the relationship between the stakeholders. The stakeholders were asked to draw a map of their place in the ecosystem of public travel chains, and their relationship to each other. In addition, it was also a way to show the flows of funding and data sharing. The figure below shows the result of the exercise:

> *"When it comes to the future of the multimodal travel chains, I think we have emerging new modes of transport, we have to combine these things much more tightly"*
>
> — service provider

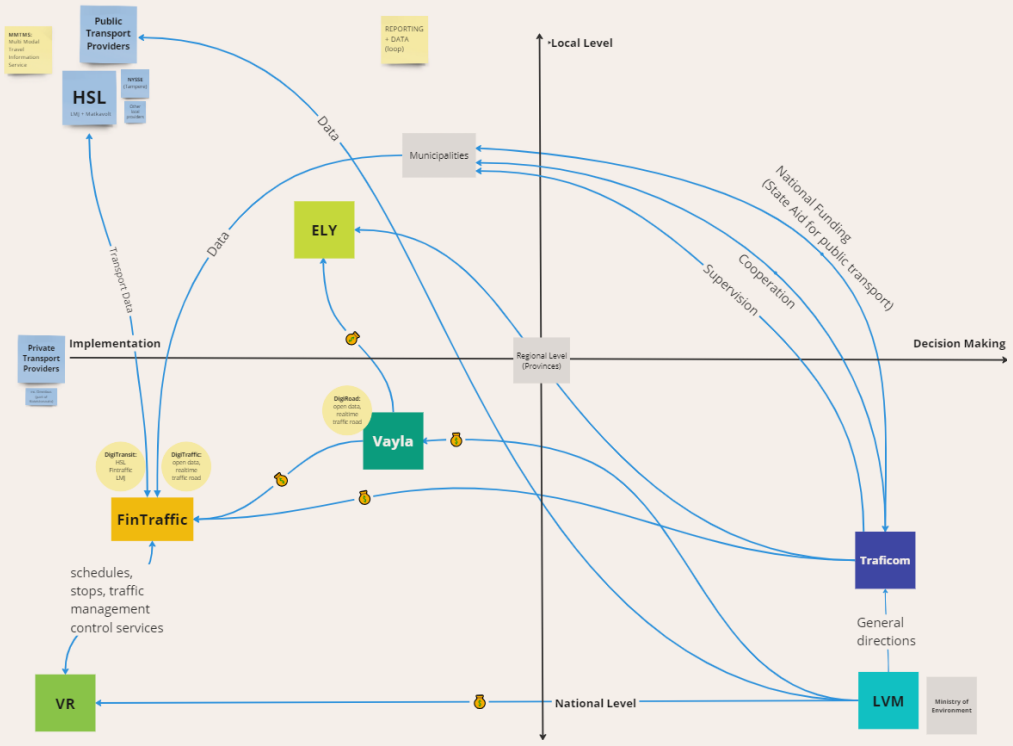


Figure 03 — The stakeholder map after the roundtable discussion

Desktop research

Since the Finnish travel system is complex, it was essential to start identifying the different roles of the stakeholders and the relationships. From there, we read through the National Transport System Plan for 2021-2032, published by the Finnish government in 2020. It helped provide us with knowledge of the current situation of the public travel chains in Finland, and the ambitions to develop them.

We looked at other countries, especially the Nordic countries and their current collaboration in the field, to gather inspiration and benchmarking examples. Some of the projects we found were the ODIN project, which focuses on data sharing within the Nordic countries (ODIN, 2023).

MaaS is combining multiple modes of transport (public or private) in one single application that is also providing a single platform to purchase tickets from various service providers of the trip. In Finland, The MaaS system is developing under the application Whim, and the process is taking a user-oriented approach. (Arias-molinares, 2020). Hence, the concept has been valid for our work regarding accessible travel chains. Additionally, In the beginning of the course, we read Dadashzadeh et. al's (2022) paper "Inclusive mobility as a Service (MaaS): Key performance indicators and a Conceptual Framework for Evaluation", which explains the concept of smart mobility and accessibility in relation to Mobility as a service (MaaS). The paper was a good start for our continuous work and research in the field of transport systems and services.

> ***"Transport and communications will merge through digitalisation, intelligent transport and increasing information, which will significantly alter areas such as goods transport"***
>
> *— The National Transport System Plan for 2021–2032*

Interviews

Together with the other groups working with the same project brief, we conducted a total of 11 interviews to better understand the interaction between each stakeholder of the travel chain, and hear everyone's perspective about the accessibility barriers in the public travel chain. All of the interviews were recorded and transcribed with consent from the interviewees.
At the roundtable discussion, interviews were held with the stakeholders to collect further information about the project, their visions and current challenges.

Following a human centered approach, it was important to collect perspectives both from the main stakeholder point of views, but also from the users. We therefore contacted the Finnish user's association Kynnys to collect first hand knowledge about the challenges encountered by people with special needs in public transports. We also conducted an interview with a wheelchair user. Both of them pointed out the digital excellence of the Finnish system but also its limitations, especially when it comes to real-time data and feedback systems.

> ***"Well, then, winter is a challenge.[...] I don't have a subway here very close, there is no subway from here it's maybe 7 kilometers to the nearest station, but I may go that distance by car or taxi and then continue from there by subway because the stops are always there indoors."***
>
> *— a wheelchair user*

> ***The bus stops are really not prioritized. They first plow the car roads and throw all the snow from there to the bus stops.***
> ***That is perhaps the problem, who to prioritize***
>
> *— a wheelchair user*

Another aspect that was pointed out was the difficulties for anyone with mobility impairment to even reach the public transports in winter due to the snow or slush.

We had interviews with the main service providers in the area, VR and HSL, to gather perspectives about their current work in the field of accessibility, and their current challenges. In addition, to not only focus on the Helsinki metropolitan area, we conducted an interview with a representative from the service provider for the transport in Tampere (Nysse).

Furthermore, We had interviews with representatives from the association of the municipalities (Kuntaliitto), and a representative from the Finnish transport association, as a way to understand the local level challenges of public transport and accessibility. Finally, we conducted an interview with a designer from PwC in Norway, who had worked with transport information in the UK.

Two interviews, one with VAYLA and one with a mobility specialist from RAMBOLL consulting office, were conducted after the first research process. Those interviews were held to validate our ideas, and not primarily to gather perspective.

System analysis

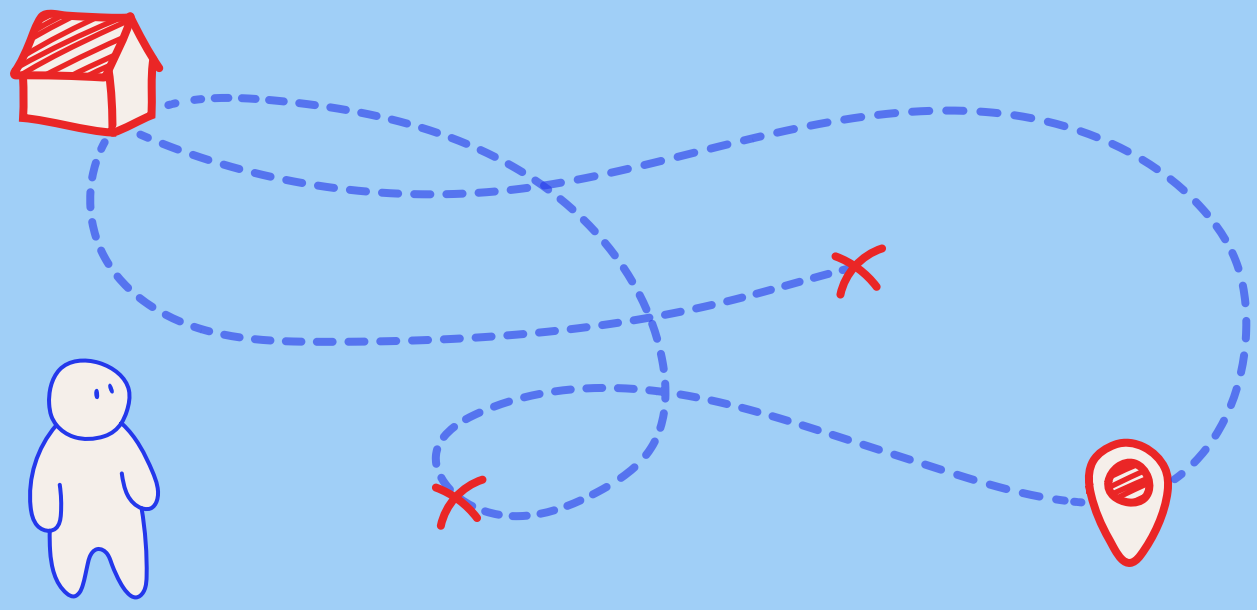
To better dig in our research, and distinguish interesting insights, we formulated the question "What would be the most valuable actions to implement in order to improve the Public Transport System for Everyone?". Yet, in order to investigate this question, it was essential to first understand what the actual state of the current Finnish travel system looks like.

STEEP analysis

Combining interviews with desktop research, we started connecting the pieces and creating a map of the factors and trends affecting public transport in Finland, paying special attention to its accessibility.

In order to navigate easily through the large amount of information, we decided to make use of the STEEP analysis model; a model which is useful for classifying the different factors influencing a system into 5 categories: environmental, political, economic, social, and technological.

This framework was particularly useful for expanding our thinking and pushing us to look at the public transport system from different perspectives and to better understand the point of view of some stakeholders.



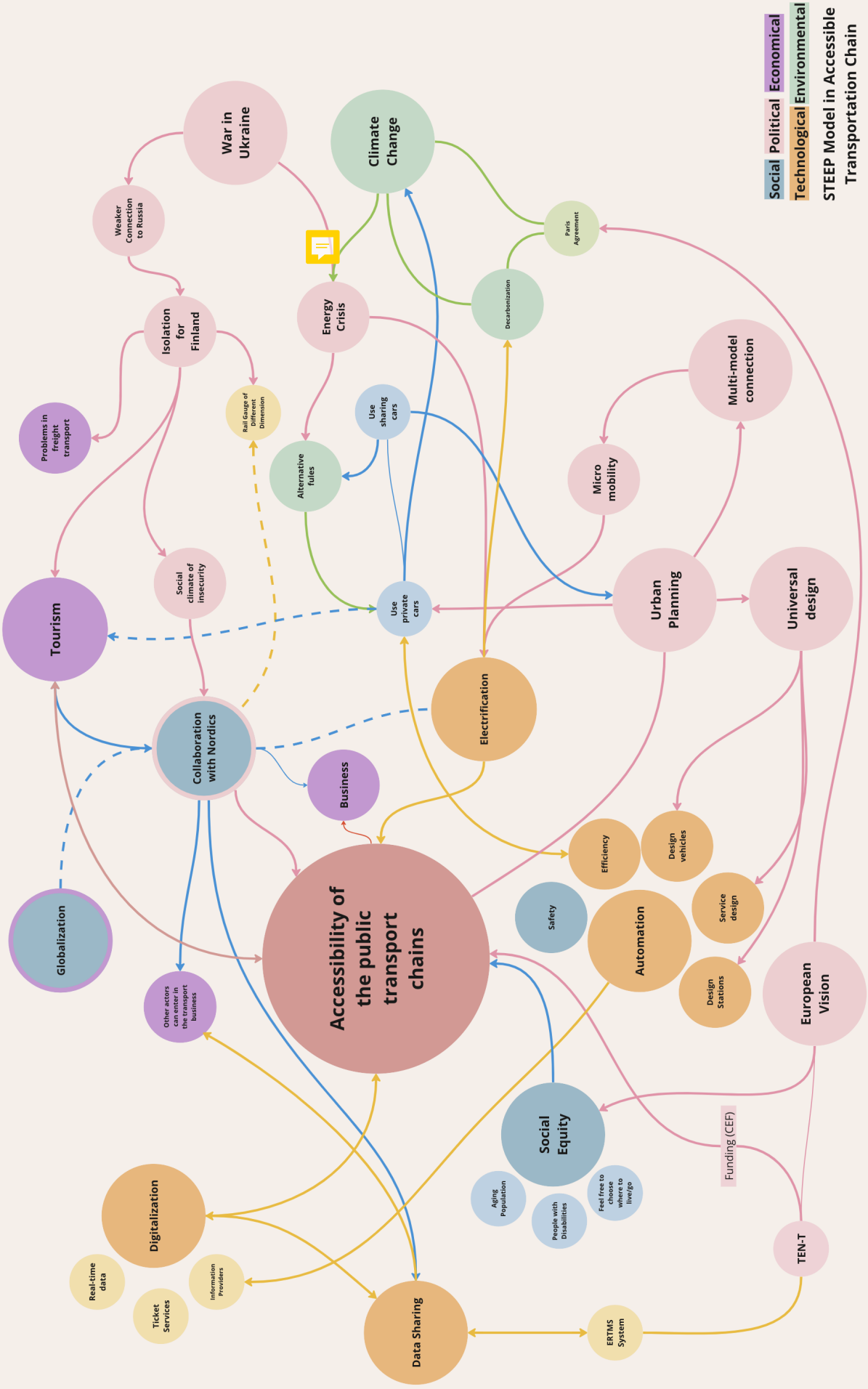


Figure 04 — STEEP map

Main actors of the public travel chains in Finland

Ministry of Transport and Communication - LVM

Governmental agencies

Väylä
Finnish transport and infrastructure agency

Fintraffic
Traffic management public agency

Trafficom
Finnish transportation and communication agency

ELY
Centre for Economic Development, Transport and the Environment. The Ely centers are responsible for the regional implementations and development tasks of the central government.

Service providers

VR
Government owned railway company on national level.

Onnibus
Private coach operator

Matkahuolto
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HSL
Helsinki Regional Transport Authority

Nysse
Tampere Regional transport Authority

System mapping

The stakeholder map shows the complexity of the travel system and the many information flows that exist among the different stakeholders.
Throughout our research, we have identified the roles of the actors in the system.

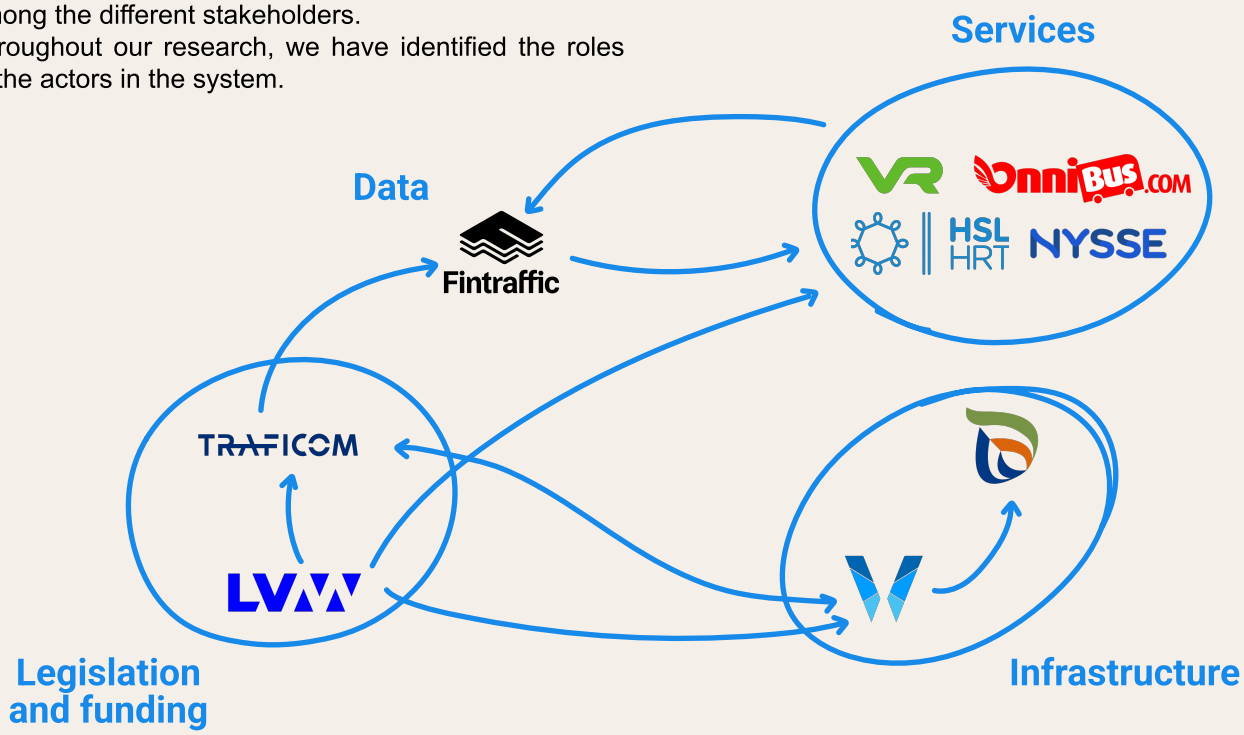


Figure 05 — System map

Key findings

The research phase was essential to broaden our knowledge of the brief and understand new perspectives.
We identified the main players in the travel system, their roles, their aspirations and the problems they face. Additionally, we have deepened the direct experiences of users and tried to understand the daily struggles of different target groups.
As a result of the research phase five insights were discovered and found to be relevant for improving accessibility in travel chains, which we will explain further below.

In the context of the transport system, stakeholders are often representative of a specific means of transport. There are train companies, bus service providers, taxis, airlines and so on. In this context, every stakeholder is addressing the accessibility issues of their specific service, providing assistance or designing vehicles according to certain standards.

> ***In the summer I use [the public transport] a lot, and very few times in the winter***
> *— a wheelchair user*

This structure is meaningful for the service providers but it is not solving all the user problems. Most of the users face problems even before getting on buses, trains etc or right after. An accessible travel trip should begin already from the travelers' door and end at the final destination, regardless of season or accessibility needs.

This issue is usually named as the first and last mile dilemma and it is considered as one of the biggest issues in sustainable mobility. Especially in Finland, addressing this topic means dealing with winter maintenance, existing infrastructure, private car-oriented mindset and unclear responsibility.

> ***Our mission is to provide train services [...] to as many people as possible.***
> ***We want to make it possible for people to easily reach the train station.***
> *— VR, service provider*

The first and last mile problem often requires local management, but at the same time, it is a national problem spread in all the country. Solutions can be provided at different levels and with different impacts, starting from government strategy to municipal organization.

Figure 06 — sidewalks in Helsinki Metropolitan Area
The presence of multiple stakeholders lead to uncertainty and differences about the sidewalks state

Small gap, big impact

> ***Nordic countries must become the world's best integrated area and that Finland will aim to further facilitate the movement of citizens between the Nordic countries.***
>
> *— Prime Minister Marin's Government Programme*

Accessibility means social sustainability and ensuring every individual the freedom to live according to their own interests. Users with mobility, visual and hearing impairments often need to live in places that offer them the necessary services, thus limiting the freedom of personal choice.
This concept is shared by all the Nordic countries and according to a shared vision adopted by the Nordic Prime Ministers in 2019, the Nordic countries will be the most sustainable and integrated region in the world in 2030 (SOURCE).

> ***One of the most flagrant gaps in the corridor concerns the track gauge. Along the western and central parts of the corridor, the gauge is 1435 mm but in the Baltics states it is 1520 mm and in Finland 1524 mm***
>
> *— European Commission, Mobility and Transport*

Yet, train travel across the Nordics is hindered by a difference of rail gauge making the transition from one country to another impossible. This is due to past decisions in terms of rail standard and there is no change Planned at the moment.The radical changes in the geopolitical picture of the past year are making it increasingly essential for Finland to have a more direct connection with Europe.

Projects for the improvement of the railway system are taking place: the electrification of the Railroad from Laurila- Torneå- Haparanda is ongoing and aims to create an effective connection between Finland and Sweden (SOURCE).

> ***The aim is to improve cost-efficiency in rail freight transport and industry competitiveness and improve the utility and performance of land transport between Finland and Sweden as part of the TEN-T core network while opening up new potential for cross-border passenger and freight transport.***
>
> *— LVM Transport System Plan p. 26*

Differences in infrastructure create difficulties not only politically but also economically. Indeed, the difference in standards prevents access to European funds for the expansion of the TEN-T core network (Source?).

Moreover, the difference in rail gauge dimensions affects the design of the vehicles, this small discrepancy prevents Finland from using wagons adopted by other European states and creates barriers to sharing the same level of accessibility. Because of this, in Finland, the impact of universal design and ease of connection between states does not bring the same benefits as in the rest of Europe.

Figure 07 — Haparanda station
The elettrification of the Laurila - Torneå - Haparanda connection is improving the travelling across the border

One-way communication

From the user's point of view, primarily those with accessibility needs, one of the main obstacles for not choosing public transport is because of the inflexibility and the uncertainty of the different stages of the trip. Even though many modes of transport are accessible for different needs today, it still requires a lot of planning beforehand for the user.

During the trips, the information flows are interrupted and less reliable: real-time changes tend to reach the user later than preferable and there are no ways for the user to point out difficulties and problems during the journey.

Establishing a channel to communicate directly with the users would be essential to allow them to ask for assistance or provide feedback. The presence of multiple stakeholders and the different transport modes make it difficult to create double-way communication. The users need a unique and unequivocal channel, but in order to ensure efficiency, different information and requests have to be processed and formed by different stakeholders.

> *"To get the information in advance is probably one of the most important parts of the travel chain. The fact that you know and get the information. [...] It is this that makes travel possible"*
>
> — *wheelchair user*

> *"We are also giving structures for [the users] to make the changes and it updates to us in a day or two in our journey planning for example"*
>
> — *HSL, service provider*

A competitive collaboration

One of the elements that have emerged most frequently and which has been emphasized during interviews is data management. When it comes to transport accessibility, the ability to know the information in advance allows users to plan effectively. In the same way, up-to-date, real-time information during the journey helps the user make decisions and manage unexpected events. It is therefore clear that the availability of data is a key element for users.

However, when discussing the issue with service providers, more complex aspects emerge. First, data collection and management require infrastructure and maintenance to ensure up-to-date information. Also, what data to share, according to what procedures and with what actors are economically relevant topics.
For the service providers within Finland, there is insecurity if the data might be affecting their own businesses. Since the current data collection is considered to be valuable and could be used for other providers to expand their business based on the shared data. It creates a dilemma where data sharing is essential, but also a threat.

Initiatives, such as the ODIN project, have been carried out to ensure an open data network. Yet, only service providers that have a monopoly on certain areas of public transport can afford to be part of these circuits. It is therefore interesting to try to understand how the concept of open and shared data can coexist with a system based on the free market.

> *"Considering that this is an open market and that in the future we might get in other train operators interested in running business, [keeping] the data is purely a competitive advantage [for us]."*
>
> — *VR, service provider*

> *"Our goal is to provide the information that we have as an open source to everyone who is willing to use it."*
>
> — *HSL, service provider*

> *If we think of the authorities and public companies, [...] we have some problems in train stations [...] because the ownership of the train station areas is typically divided between several*
>
> — *Kuntaliitto, user association*

> *[a] lots of bus lines or tram lines go over to municipality borders, so the information should be same despite of it being in Espoo or in Helsinki, [...] there shouldn't be different standards and that's why we have made this own standard of accessibility on stops.*
>
> — *HSL, service provider*

> *[Law] can provide a minimum legislations level to set the stage and then from this level we can move on to implement quality aspects.*
>
> — *LVM, Ministry of Transport and Communication*

Keeping a good standard

The transport network is a complex system, in which both public and private actors act in different areas and with different means. Interviews with different stakeholders and field observations have shown that, within this system, the concept of accessibility is widespread and common to most of the stakeholders.

However, despite the ideological consensus, the reality of the travel chains is far from homogeneous. The absence of precise standards and defined guidelines results in several problems in the services. From the point of view of users, this situation is translated in discontinuity of information, variety of platforms for the use of services, unclear protocols and difficult-to-trace assistance. The problem is particularly evident in transport nodes where changes occur between different operators and modes of transport.

By addressing the issue in a political and economic key, we realize that legislation can only provide a basic standard from which stakeholders can start to improve accessibility. Imposing too high a standard or strict guidelines would put smaller operators in a difficult position, as they are essential for ensuring that transport is operational even in places far from urban areas.

Of greater impact could be a system of sharing good practices and guidelines flexible and able to adapt to the different geographical and social conditions of the territory. In addition, it is essential to establish a shared evaluation method, consisting of criteria and methods of evaluation. This step makes it possible to clarify the different levels of accessibility and to compare them, providing the end user with valuable planning information.

Summing up, the public transport of the future in Finland should be inclusive, digital, collaborative, and integrated in the cities.
Even though these four pillars might sound utopian, pursuing such high standards allows us to envision the future we are aiming for.

Design intervention

Moving from five insights to one

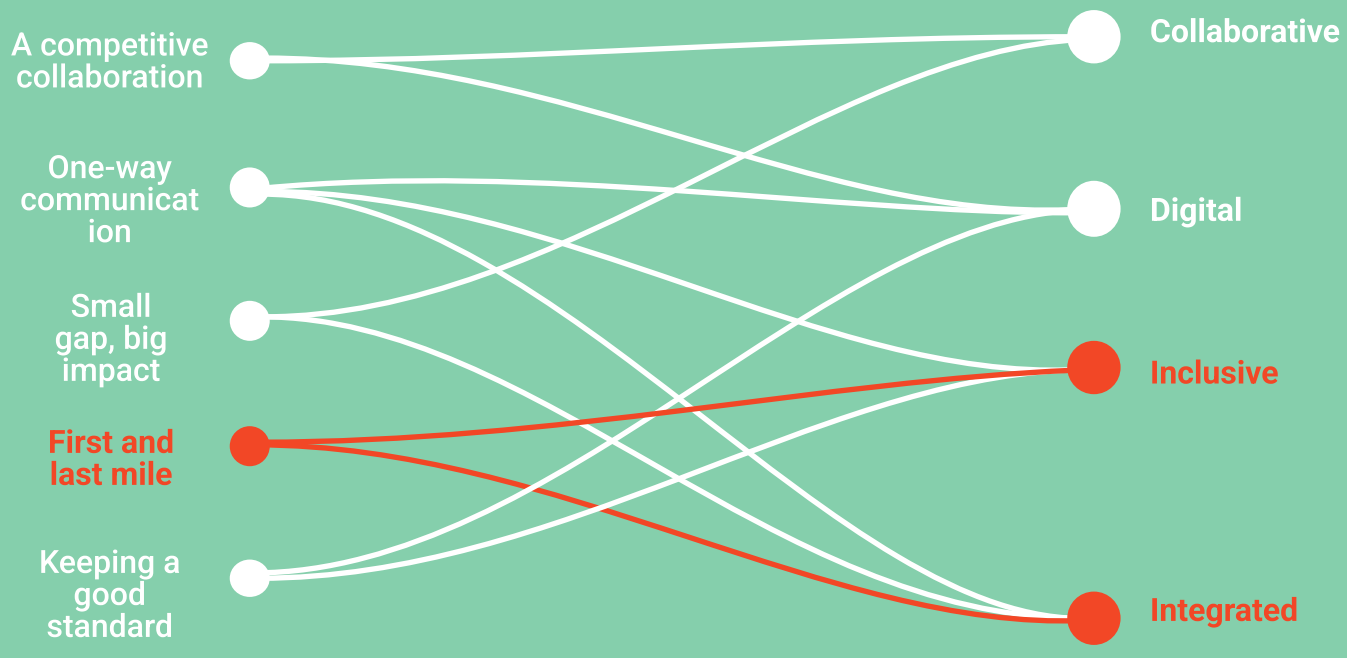
During the mid-term session, we presented our selected insights to the stakeholders. The discussion generated an interesting question that guided us towards our design intervention. We were asked what was the difference between a travel chain and an accessible travel chain, where does it start and where does it end?

Based on our research and interviews, an accessible travel chain should not start from the first service provider's door, but already from the traveler's door in every season, regardless of the weather or the user's condition. In other words, it could be referred to as our first and last-mile insight.
In the development of the National Transport System Plan we identified that the first and last mile is not the priority. Additionally, especially depending on the season, the first and last mile journeys are not accessible for people with accessible needs, nor for the general public.

The winter maintenance of the streets, which are the main infrastructure of the first and last mile, has impacts beyond the accessibility of travel chains for people with permanent disabilities: in 2015, nearly 20 000 people in Finland slipped and got injured every month during wintertime, due to the snow and inaccessible sidewalks (YLE, 2015).

Another aspect is that the standard for the maintenance can also be extremely different depending on the location. This discrepancy is another uncertainty factor to overcome for any user with a disability.

Traditionally contemporain cities are designed with the individual car traffic in mind, prioritizing roads over sidewalks. Generally the streets are not perceived as part of the public travel chains making the first and last mile a side topic. Hence, we decided to move on with the first and last mile insight and explore further how the streets, and the door-to-door strategy can be integrated into the accessible travel chain.



Inspiration from other countries

Luxembourg

Call-a-bus is an on demand service based in Luxembourg (SOURCE Ville de Luxembourg, 2023) .
However, the service can be found in other countries as well. The service enables citizens to request to be picked up in specific locations. Wheelchair users and citizens over 70 years old can use the service.

In this case the strategy is to minimize the distance that the users need to cover to get on the public transport. The service was also a contribution for Luxembourg winning the European Commission access city award 2022 (European Commission, 2022).

In this example the service is a hybrid solution between a private car, taxi and a public bus that answers the needs of a specific user group.

Figure 08 — Call-a-bus service

Sweden

In 2013, the municipality of Karlskoga, Sweden, rethought their snow-clearing strategy. The new schedule was primarily made from a gender issue perspective (Teller Report, 2021) . The municipality had discovered that more men were using cars as their transport, meanwhile women used the sidewalks and the public transport. There were also more women who were leaving their children at preschools before going for work.

Hence, the municipality decided to flip the schedules so the priority would be the pedestrians, starting with the sidewalks leading to preschools and from there move on to other trips. The new strategy successfully addressed the gender inequality issue but also led to an effective decrease of injuries without additional cost (Teller Report, 2021).

Since the results were positive the strategy was later on implemented in Stockholm, Sweden(CBC news, 2018). With many benefits, this flipping schedule strategy has also been tested in cities with similar weather conditions such as Ottawa, Canada (CBC news, 2018).

In this case a simple and costless action, changing maintenance schedule which had many positive impacts even beyond the original intention.

Figure 09 — Sidewalks ploughing

Oulu, Finland

In the city of Oulu, Finland, the municipality, the local state road administration and the city of Oulu created a joint contract for maintaining the bike roads in the area during winter (Steensig, 2021). Together, they agreed on a common quality standards which would be equal for all roads, the ploughing was scheduled and prioritized to the pedestrians and bike roads.
The contractors involved organized at least three winter events per year in three different locations where they collected feedback from citizens using the roads. Additionally, citizens volunteered to measure and grade the quality of the roads (Steensig, 2021).

The collaboration between different stakeholders and the definition of a very precise and measurable standard for the accessibility of the sidewalks.

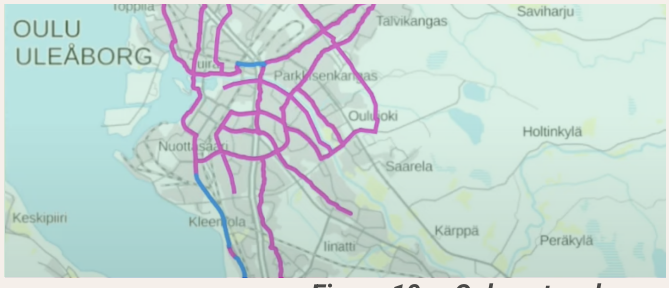


Figure 10 — Oulu network map

Figure 11 — Ideation session

Ideation session with stakeholders

Preparing the ideation for the stakeholder, we wanted to highlight the importance of the first and last mile.
To illustrate our thoughts we used storytelling and created two characters who would encounter difficulties in their travel. To trigger solution oriented thoughts we presented some best practice examples from our desktop research.
The storytelling helped the stakeholder in the audience capture the first and last mile issue from a very practical and user-centered point of view. At the end of the session we used a digital tool, Mentti, to collect the stakeholders thoughts and ideas on how to ameliorate the travelers experience.

Later we clustered the proposals in six different categories (see figure below).

The ideation session with the stakeholder allowed us to think together without strict boundaries about the accessibility of the first and last mile. It generated interesting discussions about the future technologies, policies and possible evolutions of the public-private collaborations.

The research, interviews and finally insights definition helped us frame the challenge. The ideation session helped us define the “What needs to change”. After those two phases we used a chart by Policy lab, Government as a system, cross-cutting styles of action to define the possible actions to answer the “How to change it”: Piloting, Setting Standards and Informing.

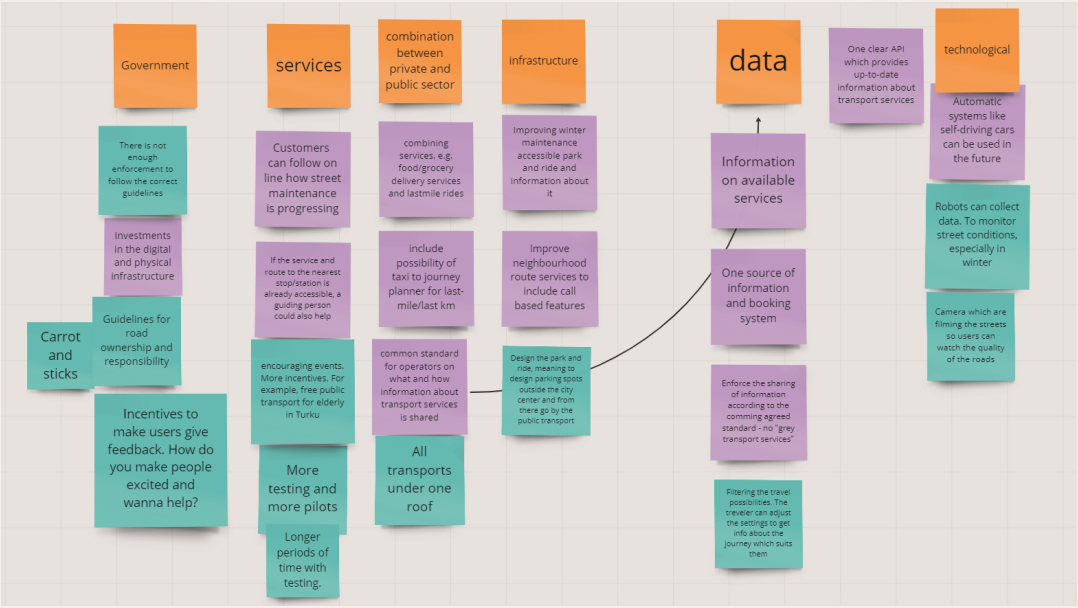


Figure 12 — Result from the ideation session with the stakeholders

Policy Lab Government as a system

When discussing the benefits of including users in the early stage of policy making and applying design approaches to policy making, Kimbell (2015) points out that the insights from people's own experiences can provide opportunities to challenge the existing systems. She highlights the case of policy labs, and how they help reach out to policy-makers, enhancing cooperation and exploring new models.

> *"Policy Lab's expertise is in taking a structured creative and analytical approach, not in a policy area. It gives civil servants experiences of practical inquiries and methods which explore and frame problems and generate and iterate solutions."*
>
> — Kimbell, 2015

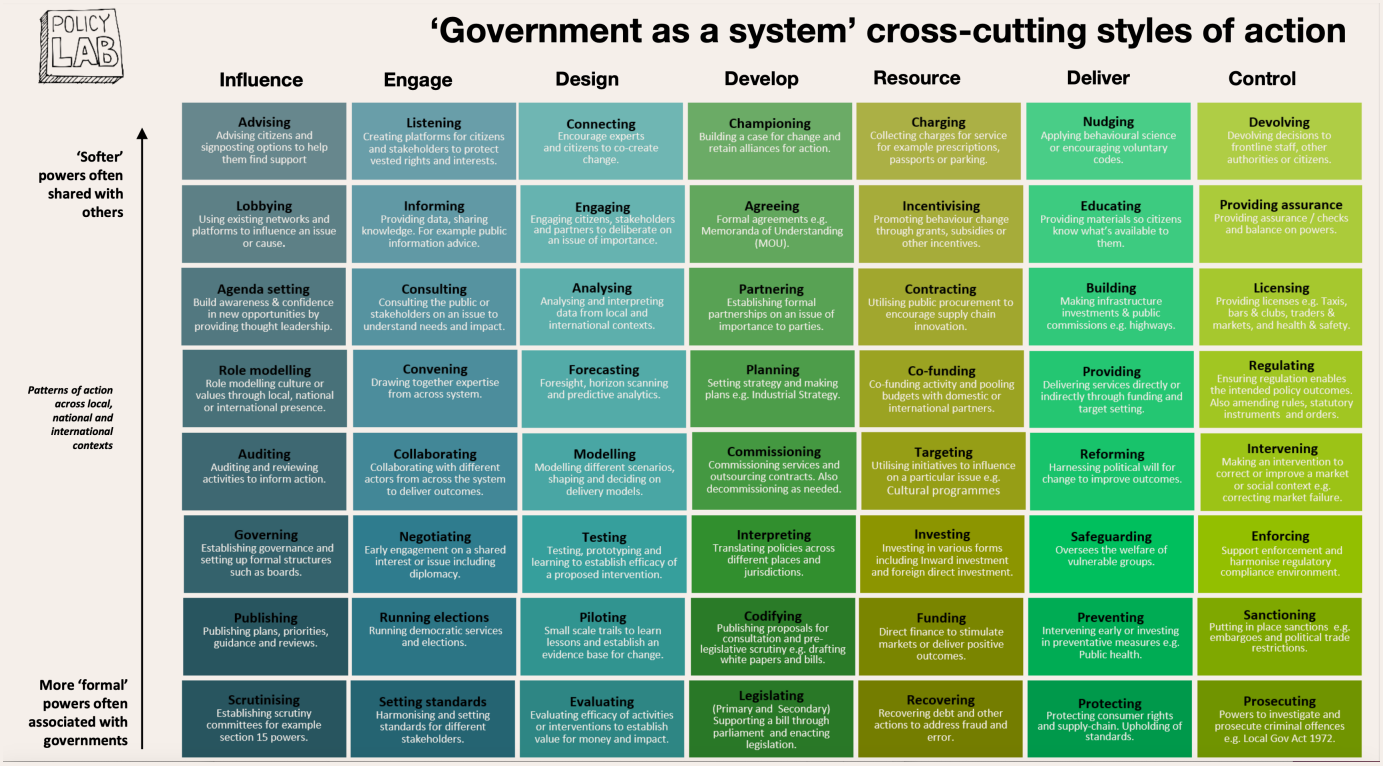


Figure 13 — Policy labs "Government as a system" chart

During our contact teaching sessions with the rest of the groups, we used the Policy labs "Government as a system" (see figure) chart as a way to further analyze what type of changes we are striving for with our proposal. In the beginning of the design intervention stage we were leaning towards the control table. However, throughout our discussion, we slowly shifted to the other side of the map. In the end, we did not have one set of actions, but the actions highlighted in red felt were considered the most accurate for our proposal.

Leverage points

We used Donella Meadows's (1999) leverage points as a guide to identifying the level of impact of our intervention, and later on the proposal.
Leverage points are "places within a complex system where a small shift in one thing can produce big changes in everything." (Meadows, 1999, p. 1).

In her model, Meadows proposes twelve leverage points to intervene on a system. They can be grouped in three categories ranging from more practical intervention with a small leverage power to personal intervention with the highest leverage power.

Based on our previous reflexion we see our actions in the leverage point at a political level "power to influence the system structure".

In the Ideation Session with the stakeholders, we noticed that priority is not given to the streets and pedestrians. Who is responsible for which part of the street is not clearly defined, and some street owners think maintaining streets is not vital. Making use of Meadows'(1999) leverage points definition, we realized that if we wanted to include the streets in the accessible public travel chain, we needed to propose design interventions that would last, in other words propose something strong enough to change the existing system but also flexible enough to let the system self-organize and evolve with time.

So far, we have been trying to make every service provider responsible for different streets rather than thinking about who can be the one especially responsible for the streets. Looking at Meadows'(1999) leverage point, we reanalyzed the relationship between different service providers, and instead of thinking of several stakeholders, we were now asking ourselves if there is a possibility to create one new single stakeholder who would represent the streets infrastructures and coordinate the actions.

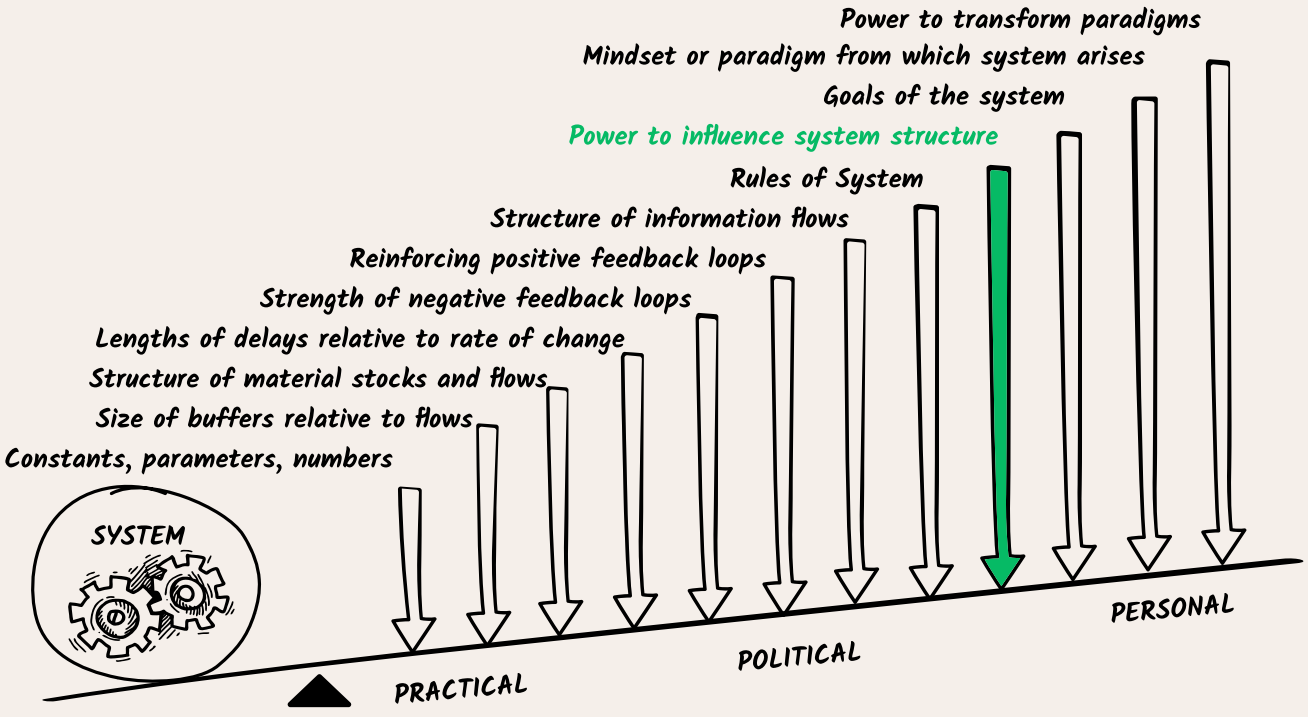


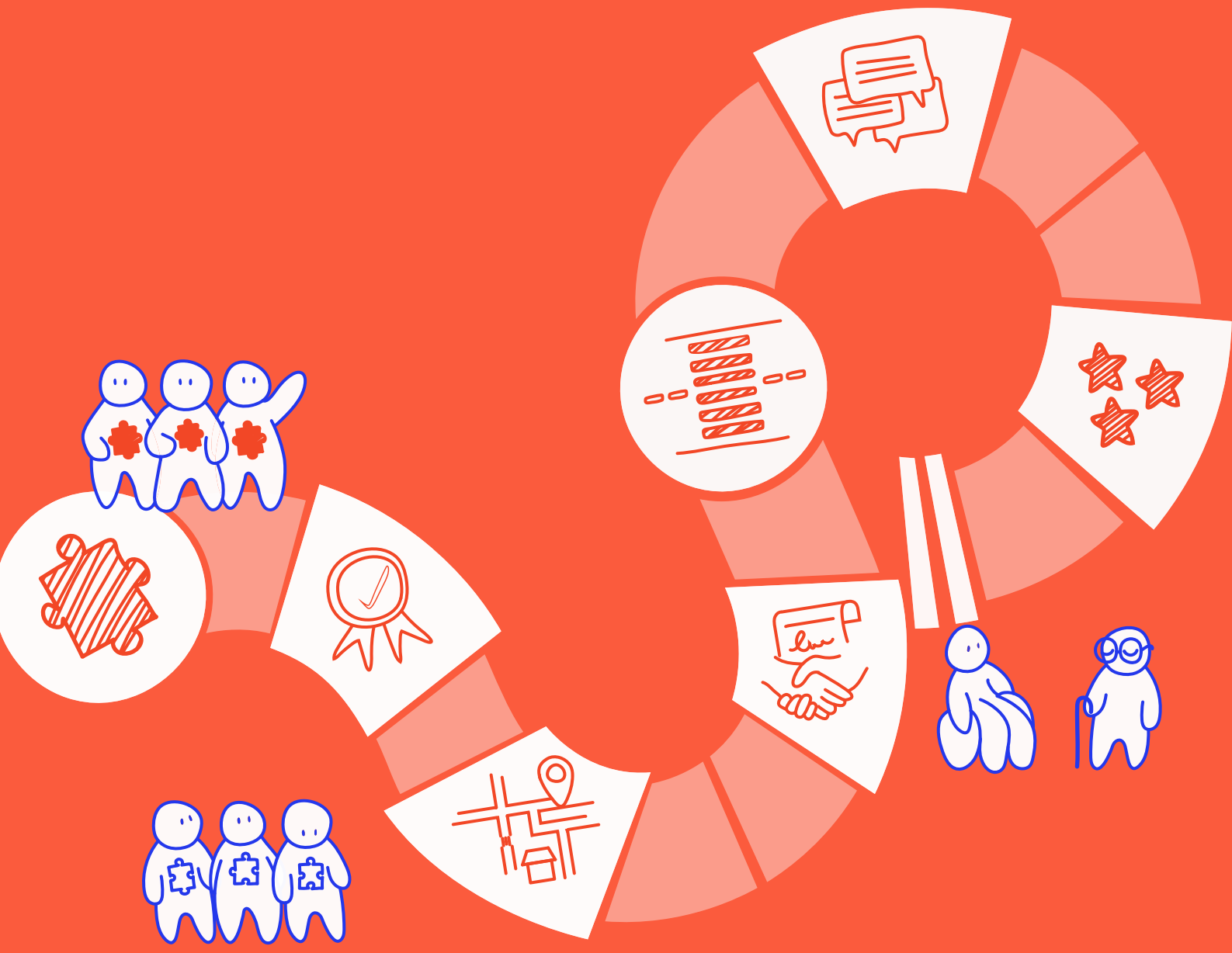
Figure 14 — Adapted from "Leverage points for systems change" of Meadows and their relationship to the practical, political and personal spheres of transformation

Final proposal

The Task Force

Our main goal is to integrate the streets in the accessible public travel chains, and to create a new information node. Our proposal, The Task force, aims to connect the different stakeholders together, and coordinate actions with a clear focus of prioritizing the pedestrian streets.

Our proposal consists of seven key phases which will be further explained below - creating the task force, setting the high-level standards of accessible streets, defining the trips in the pilot project, adapting contracts with stakeholders, piloting, getting feedback, and evaluating results.



1 Creating a Task Force

Establishing The Task force is the first phase of our proposal. It requires engagement both on local or municipal level as well as investment from national instances.

The task force will work within the department of road management of municipalities and in close collaboration with different transport service providers, contractors and users representatives.

In our final show presentation we suggested implementing an inter municipality Task force in the Helsinki metropolitan area. This suggestion is because of the unique situation of the capital area with three municipalities sharing the infrastructures and services together. The Task force would then have representatives from the departments of road management from each municipality.

By implementing The Task force in municipalities we wish to create specific local knowledge about accessibility that would belong to public authorities.

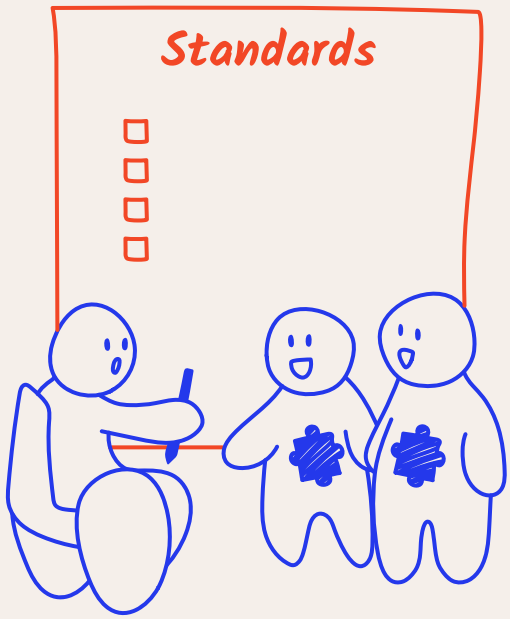
2 Setting High-level Standards

In the second phase, high-level Standards will be defined with user groups representatives and service providers.

After The Task force is established by the municipalities, a series of workshops can be launched and organized with different stakeholders of the traditional travel chains, to hear their professional suggestions. Representatives from user groups would also be invited to the workshop to express their needs, desires and difficulties.

The workshops would have two aims, defining a common high-level standard for accessibility of multi-legged trips and identifying local areas of importance or landmarks for the people with special needs.

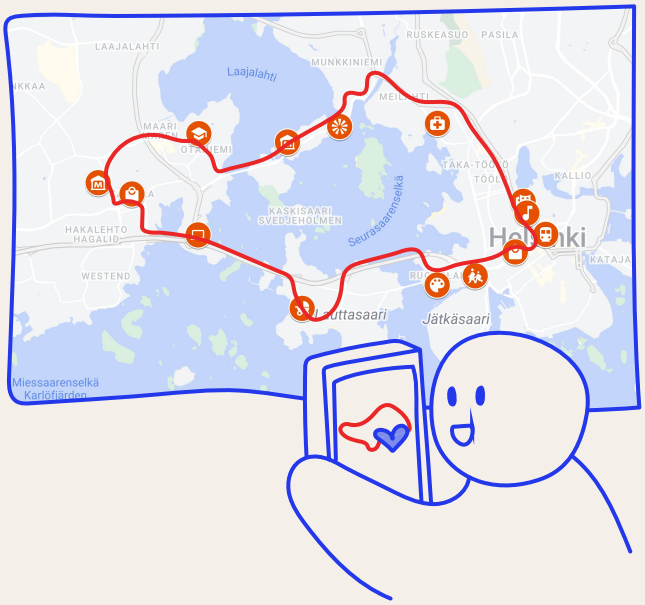
As we researched in our benchmarking (see page), when setting the high-level standard of accessible streets with users and service providers, the collaboration model between stakeholders and precise requirements for bike lanes in Oulu can be considered as a guideline to set the high-level standard.
The definition of a high-level standard is acting as a role-modeling and goes beyond the actual limits of what is envisioned for the accessibility of the public travel chains.



3 Defining Trips

Based on the previous workshops, the next phase is to define the actual trips which would be part of the pilot project.

The areas of importance will facilitate the choice of the trips for the pilot project. Since the citizens play a significant role during the pilot phase, their suggestions and opinions about which trips they prefer can be collected through questionnaires and online voting. Based on the results from the citizens, the trips in the pilot project can be defined. The trips will have to combine various modes of transport, as the transition between those is one key aspect of accessibility to be tested out. Several trips will be tested out during the piloting phase.



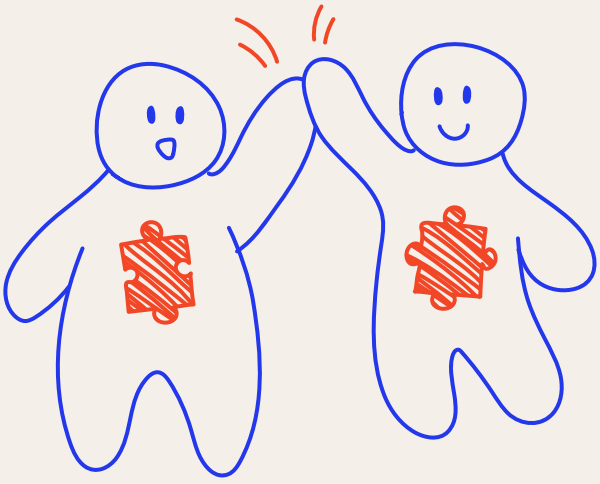
4 Adapting Contracts

The Adapting contracts phase will make sure that the current contracts with services providers and contractors for street management will be updated on the defined trips.

Based on the setting high-level standards phase, The contracts will be equal for all trips and include very detailed instructions, to ensure good accessibility on the defined trips. For example harmonizing the services according to the walking pace or including clauses for the extra plowing. And when everything is set, the pilot project can be launched.

In this phase the efforts will be made on making sure that the high-level standard is reached and maintained along the trips and for the all duration of the pilot project.

During our desktop research we found two existing digital tools, Digitraffic and Digiroad that could be used to ensure a very updated state of the trips. The real-time information could be communicated to both contractors (so that they can fix the things) and to users (so that they can be aware of the barriers).



5 Piloting

At the core of our proposal, a pilot project would allow trying out in real conditions the idea gathered in the previous workshops. The pilot phase will last for a year to cover the accessibility questions that arise in all seasons in Finland.

In our proposal the ministry of transport could subvention the pilot projects. In summer, some parts of the streets could be closed to traffic leaving more space and safety for other users. In winter the snow in those trips could be plowed in priority, making the sidewalks accessible at all times. The lighting of the pedestrian paths is also an aspect that can be worked to make the trips more visible in dusk times for users that are visually impaired and also contribute to a feeling of safety. The transport chain on the trips could take the mobility of slower users into account. As an example, the traffic lights would prioritize the pedestrians, instead of heavy transports. Another idea could be to make sure there are resting areas along the way, like benches to accommodate users during their travels.

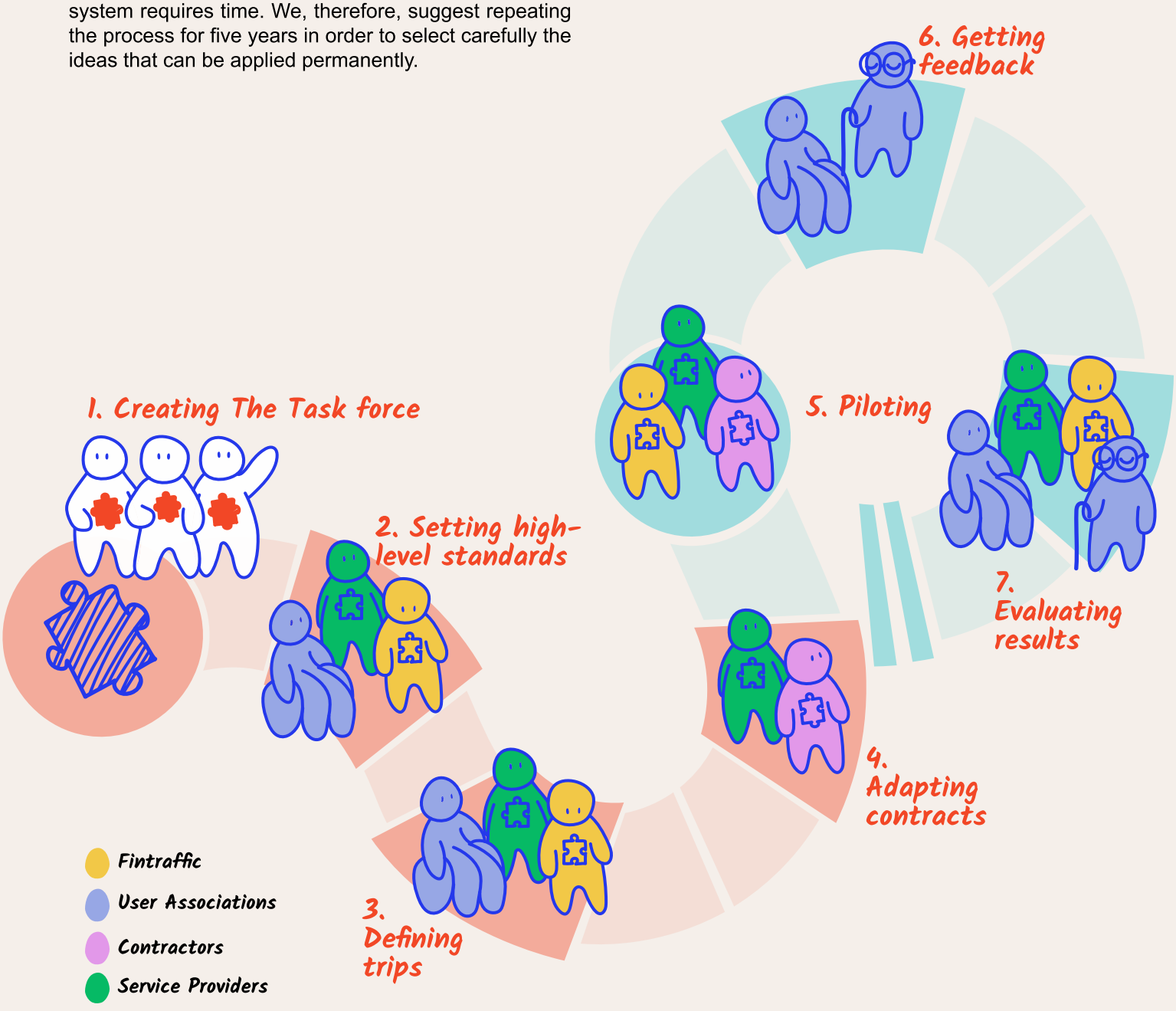
An example of a trip which could be used for the piloting phase is loop-trip across Helsinki center and Espoo. The trip goes through populated areas and serves many users. It connects places for leisure such as museums, and areas with offices like Keilalahti. Attention is given to places important for people with reduced mobility, and hence the trip goes by the university hospital of Meilahti or near a senior center in Ruoholahti.

6 Feedback & Evaluation

Getting Feedback and Evaluating results is part of the iteration phase, which runs simultaneously as the piloting phase. Quantitative and qualitative feedback is used to demonstrate new standards.

Throughout the piloting, continuous feedback from the users would be implemented to evaluate the project. The collection of feedback from users can be qualitatively and quantitatively, which comes in various different formats, such as questionnaires online, and open events to involve users, service providers, contractors and The Task force. Once the feedback is gathered and the pilot is evaluated, the process can repeat with the new inputs.

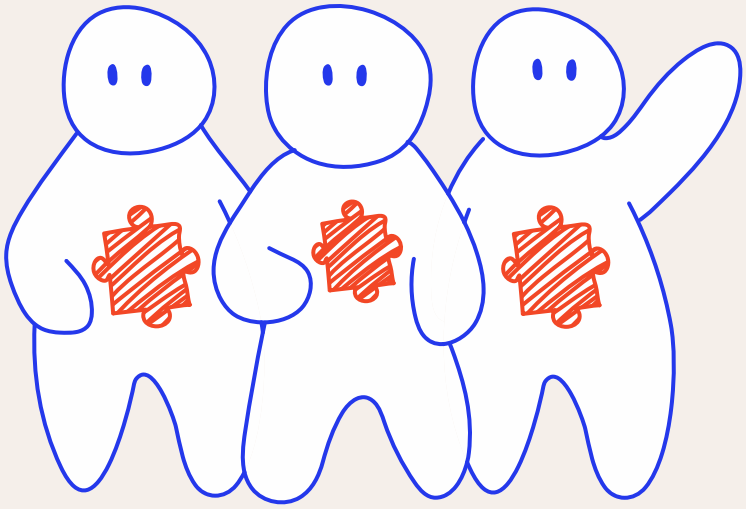
This iterative process could demonstrate that new standards of accessibility are possible, and it could promote different innovations for accessible travel chains. But changing people's habits and the current system requires time. We, therefore, suggest repeating the process for five years in order to select carefully the ideas that can be applied permanently.



Reflection of the proposal

To achieve an accessible travel chain, we are highlighting the importance of the streets. We want to make sure that the first and last mile of every user's journey is accessible, no matter whether they are people with reduced mobility, elderly or people with small children. By involving users and service providers in the phase of setting high-level standards of accessible streets through The Task force, the focus is brought on humans, users and stakeholders of the public travel chains. Integrating the streets as part of public travel chains implies that the priority will be shifted from vehicles to pedestrians. By making use of different campaigns for users to define their preferable trips in the pilot project, a sense of belonging can be created. Additionally, users will be involved in an early stage of the proposal. The existence of The Task force will encourage transparency of information and encourage participation among the different stakeholders involved.

One part which has been discussed within the group, yet not been emphasized in the final proposal is the aspect of environmental sustainability. Even though The Task force encourages social sustainability; by facilitating an accessible travel chain, it is important to reflect on the possible environmental effects the project can have. On one hand, the proposal encourages public transport and reduces heavy transports, which has a positive effect on the climate. On the other hand, road maintenance can have a negative effect on the environment, and therefore it should be taken into consideration when establishing high-level standards and during the piloting phase.



Conclusion

As a result of this course, we proposed The Task force which will be a new node of information, facilitating the first and last mile in the public travel chains, and help integrating the streets in the accessible travel chains. To try out our proposition we suggested establishing the first Task force in the Helsinki metropolitan area. The task force would lead pilot projects where newly defined high-standards of accessibility would be experimented. From there, The Task force could be established in other parts of Finland, gradually expanded to a national level and the temporary pilot projects would become permanent new regular standards of accessibility.

The project brief has been a challenging topic that required us to grab a good understanding of the current Finnish travel chain in a short time, and find a proper solution workable for different stakeholders. We started from a wide perspective and slowly narrowed down to our final proposal. Looking back at the process, we are satisfied with the final result and all the work we have done getting there. In addition, we managed to collaborate with the other groups and form a wide range of proposals to cover as much ground as possible in the project brief. In general, collaboration has been the key on all levels to achieve the final result.

> ***Accessibility is the freedom to be independent, it's a form of social sustainability***
>
> *— Service provider*

> ***Transport and communications will merge through digitalisation, intelligent transport and increasing information, which will significantly alter areas such as goods transport.***
>
> *— The National Transport System Plan for 2021–2032[2]*

> ***Apart from harmonisation of data and joint policy work, we see substantial benefits from sharing technical solutions, avoiding unnecessary duplication of work and reusing best practices.***
>
> *— ODIN project [3]*

> ***When it comes to the future of the multimodal travel chains, I think we have emerging new modes of transport, we have to combine these things much more tightly***
>
> *— Service provider*

> ***In a complex system, when you change one thing, you change many things.***
>
> *— Ramboll, mobility Specialist*

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