Aalto University

LIIKE

A Program to Accelerate Bottom-up Transport Innovation

(c) María Ferreira Litowtschenko, Jaakko Ikonen, Kristin Swan
Design for Government course at Aalto University. June 2016

Summary

This report details the design process of the Design for Government project carried out for the Ministry of Transport and Communications' brief Bottom-up Mobility as a Service. The report contains accounts of the research, analysis and solution phases of the project.

During our research we employed empathic design research strategies: empathic observation, interviews and experiencing things for ourselves. Through extensive research we sought to understand the transportation situation in rural Hämeenlinna, needs of the people, informal (bottom-up) services and how to incorporate the voice of as many travellers as possible. The research and analysis we conducted reinforced the problem statement given by the Ministry of Transport and Communication: public transport is limited and doesn't meet the needs of most citizens in rural Finland. Transportation needs are highly diverse, complex, and changing over time and there is no one solution that fits all of these needs. The two key key findings of our research and analysis are:

1. **People are addressing their mobility problems by coming up with their own solutions that work well and often involve larger communities.**

2. **These user-created solutions are typically disconnected from the public transport sector. Connecting bottom-up solutions to the formal transport process is however vital in order to develop innovative and effective solutions to complicated mobility problems.**

The solution we designed to address these issues is Liike, a program to accelerate bottom-up transport innovation in rural Finland. It will work with rural communities on a local level, enabling new transportation solutions & new opportunities for citizen involvement. Liike connects the citizens and village associations to decision-makers and creates a new culture of participation in rural transportation services.

The program is built on three cornerstone principles: bridging, mobilizing and accelerating. The first principle involves bridging the current disconnect between the public sector transport actors and the citizens by simplifying processes and creating a common language. The next principle involves mobilizing and enabling partnerships between the public and private sectors and the people, making the process of collaboration and participation easier. The last principle refers to accelerating the creation of more local transport solutions. A local hands-on approach will combine with new tools (such as experimentation and new partnerships) to make it easier to create local transport solutions that directly meet the needs of the people.

We believe that paying more attention to citizen voices will lead to significantly improved outcomes in rural transport. Bringing citizens and authorities together to solve the complicated mobility problems will lead to innovative and efficient solutions, as local communities have a strong motivation to participate and a deep understanding of the specific problems they face.

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1. Brief

Bottom-up 'Mobility as a Service'

Brief from Ministry of Transport and Communications

Where are we now?

The contemporary transport ecosystem is rapidly changing. Options are multiplying (eg. Kutsuplus, Uber, car-sharing, etc.). There are also a variety of 'invisible' and 'informal' services, such as school and sports carpools, community-based delivery and transport of elderly, and socially networked delivery services, which are completely unaccounted for in the current system. In Finland today, the public transportation system is 'one size fits all'. There continues to be a need to provide a basic 'guarantee' of public transport, but the system is under-serving some users and over-serving others and, overall, consuming more public resources than necessary.

Focus and target groups

This project will focus on citizen needs and on invisible and informal mobility services organized by citizens, analyzed in the context of the varied (and emerging) transport ecosystem. The project will take the specific site of Hämeenlinna region, a Living Lab already engaged in relevant research and experimental initiatives. The audience target group for the project is political decision-makers at both national and regional levels. The target group to research and design for is the citizens.

Aim and goals

By investigating citizen needs and articulating citizen voices, the aim is to reach, inform and persuade decision-makers toward user-centric 'Mobility as a Service'. The Ministry would like to raise awareness and change the political and public mindset about transport services, and to build up confidence that system change can work. The Ministry wants to support that people have more and more individually suited options to choose from, while ensuring a democratic service offering.

Outcome

The outcome should be a persuasive formulation of 'citizen voices' in terms of their needs, desires and experiences. The result should include better insight into the true needs of the people and their ways of coping with transport and accessibility problems. The project might include visioning the future where user needs have been met and how this has improved quality of life of the citizens as individuals and at a society level.

2. Research and Knowledge Gathering

We started the research phase of our Design for Government project in an interdisciplinary team of six students, “the mobility supergroup,” and later on we divided into two different subgroups of three students each. The major share of our research was conducted while we were still in the mobility supergroup: We conducted an ATLAS Workshop, expert interviews, user interviews and discussions, field trips to Hämeenlinna, reading, and our own online survey. Through our research (image 1) we sought to understand the transportation in Hämeenlinna, needs of the people, informal (bottom-up) services and how to incorporate the voice of as many travellers as possible.

Image 1: Our two teams research processes in numbers in total (Ferreira Litowtschenko)

During our research we employed empathic design research strategies: empathic observation, interviews and experiencing things for ourselves. Jane Fulton Suri from IDEO defines design empathy as “The ability to step into someone else’s shoes and to understand them through their experiences.”[1] We tried to step into the shoes of citizens of the Hämeenlinna area by as many means as possible.

Our research questions consisted of the following:

- How could public and market driven transport options better meet the diverse needs of more people?
- How could the voices of more travellers be heard?
- Could a more varied mix of services allow people to leave their cars at home?
- How could informal (bottom-up) service provision open new space for service possibilities?

ATLAS Workshop

In the beginning of our research phase for Design for Government we organized an expert workshop with the theme “bottom-up mobility as a service”. The workshop’s aim was to start the conversation with the stakeholders and begin to understand the context of our brief. Nine experts participated and they were divided into two groups. The ATLAS[2] design game, was used to take notes from the participants and to spark the conversation during the workshop.

Image 2: Workshop notes (Berg)

The two different groups had very different conversations. One group emphasized the resources used in mobility, the resources needed to create new services, as well highlighted the business potential of new transport services. The other focused more on the mobility services’ user perspective, possible new services, as well as the future of mobility in autonomous vehicles. There was also discussion about the role of the user, and the juxtaposition between being a citizen and being a customer.

From the workshop we learned that bottom-up mobility as a service is a rather elusive concept. The stakeholders seemed to share a general vision for mobility as a service, as the integration of all mobility services under one payment system. This would then facilitate the development towards a more diverse array of mobility services to compete with private car ownership.

Image 3: Stakeholders and facilitator at the ATLAS-workshop (Berg)

Empathy through Immersion into Hämeenlinna

Image 4: Heading to Tuulos (Swan)

To grasp what transportation in the Hämeenlinna area means, we immersed ourselves into the transport systems, experiencing all the modes of transport we could find in and around Hämeenlinna: walking, rental bicycles, private car, service bus, public bus, private bus, train, ride sharing, and even hitchhiking. By emphatically trying out these different modes of transportation, we experienced first hand what kind of problems could be relevant to our research: long distances, hurdles, dangerous spots, a lack of information and unexpected delays. In the Hämeenlinna municipality we experienced both the densely populated urban area, as well as the sparsely populated rural areas.

Urban Findings

Key findings from our immersion in the city of Hämeenlinna included:

- The main train and bus stations are separated in Hämeenlinna, thus interconnections are difficult between long-distance bus services and train services.
- Cycling in Hämeenlinna is difficult due to a lack of cycling routes and lack of supporting infrastructure.
- Poor maintenance/plowing, especially during winter, additionally impacts cyclability.
- There is an uncertainty as to whether one is allowed to cycle through the city centre.
- The city offers four free city bikes to borrow from the tourist information office. This is a great service, that is not very well known.
- Service buses offer a great service. These buses are used by the elderly who value the sense of community and connection onboard. However, these services are stigmatized and other demographics do not use them.

Image 5 left: Hämeenlinna resident has to cycle on the road in the centre of Hämeenlinna (Swan)
Image 6 right: Travellers wait for their buses at the Hämeenlinna bus station (Swan)

Rural Findings

Key findings from our immersion in the rural areas around Hämeenlinna included:

- A private car is both the default transportation option, as well as a necessity.
- There are limited public transport options in rural settings, if any at all.
- Where public transport options do exist, schedules are often inconvenient and entirely inflexible
- In most cases large charter buses are used, while ridership is extremely low.
- Municipal consolidations have led to services getting farther from citizens.
- Many public buses no longer drive into the villages.
- No sidewalks make for treacherous walks on the side of the road. Further safety issues perpetuate on dark snow- or ice-covered nights.
- No bus shelters and no real time bus data make waiting on the side of the highway for the bus less and less desirable.

Image 7: 40 cm between the bus and the slush at a bus stop near Tuulos (Swan)

Interviews

We conducted 74 interviews over the course of the project. 28 of our interviews were formal: they were recorded and consent forms were filled. The rest, 46 interviews were more informal, ranging from interviews with key bottom-up mobility actors on the phone, to chatting with people we met in the villages. The interviews covered the public, private, and third sectors, including the Ministry of Transport and Communications, Hämeenlinna city officials, Growth Corridor, village associations, Sitra, Smart Kalasatama, Liikennevirasto, ITS Finland, Hämeenlinna Disability Council, Tekes as well as public transport planning in smaller cities of Pieksämäki and Pietarsaari.

We also conducted many interviews and discussions with residents of the Hämeenlinna municipality to understand the user experience in Hämeenlinna and surrounding villages. We spoke with individuals we met along the way of our many trips to, from, and around Hämeenlinna. We spoke with individuals at the bus stops, on the regional buses, commuters on the train to Helsinki, local village bus users, cyclists, even our rideshare driver from the "Kimppakyyti Tampere - Helsinki" facebook group. We spoke with residents of small villages in areas around Hämeenlinna & Jyväskylä like Evo, Sattula, Janakkala, Lammi, Tervakoski, Tikkala and Vuolenkoski. All of these discussions helped enlighten a deeper understanding of transportation users, and helped us to put these users at the center of our solutions.

Through these formal and informal interviews and discussions we began to gather information for our aforementioned research questions. In particular we obtained quite a lot of information about the voice of more travellers - of the elderly, of commuters, of people with disabilities, and of people in small villages. Additionally, we gathered story after story of the informal workarounds that people use to meet their own transportation needs.

Online Survey

We conducted an online survey, polling residents of Hämeenlinna, 18 villages around Hämeenlinna, and members of various ridesharing facebook groups.

The City of Hämeenlinna's Communications Office even helped to spread the survey further by posting it as a press release to the City of Hämeenlinna's website[3]. We asked a few simple questions to understand user experiences with transportation. The questions covered modes of transportation, public transport usage, changes users would wish for, knowledge of bottom-up solutions, and obstacles or challenges in users everyday mobility. 85 individuals participated in the survey, residing in and around the Hämeenlinna region.

Key findings:

- Of the rural village resident respondents, 80% of respondents said that using public transport is not an option. They state challenges with unavailability of services, inflexibility of routes and schedules, safety and infrastructure issues.
- 56 % of the respondents would like to have a higher frequency of busses in their area or better scheduling of routes. Despite the fact that most of the respondents do not use busses currently, because they do not meet their needs, they still have a wish for better services.

3. Interpretation and Synthesis

We gathered a considerable amount of data and information through this research process. That information came in various forms, as described above: interviews, stories, quantitative data, experiences, and images. As such, various tools and techniques were required to interpret the different types of data and synthesize it. Our interpretation and synthesis approach took guidance from the schools of Design Empathy and Systems Thinking.

Stakeholder Analysis

Transportation and mobility involve a complex matrix of stakeholders and participants. These stakeholders come from various sectors, have diverse interests, and hold disparate levels of authority and interest. Subsequently it is important to begin by mapping the stakeholders to understand where they all fit in the problem.

One such version of the stakeholder map is the influence/interest map[4]. In this style of map, stakeholders' power and influence is mapped on the vertical axis, while interest level is mapped on the horizontal axis (see Image 8). The subsequent 2x2 matrix elucidates a prioritization of stakeholders: key players, meet their needs, show consideration, and least important.

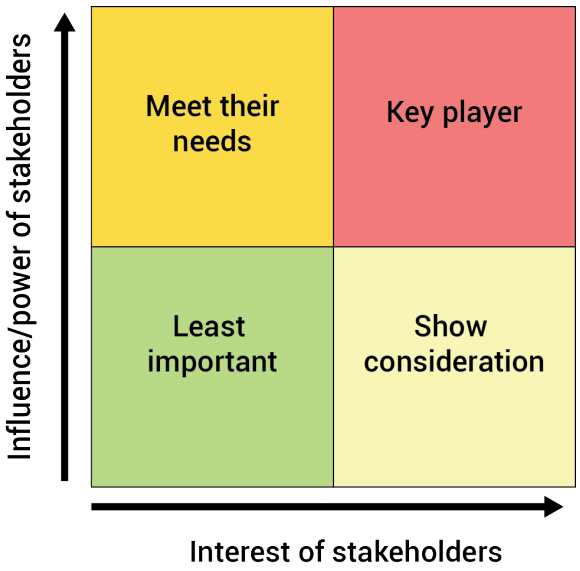

Image 8: Stakeholder Influence/Interest Map and Stakeholder Quadrants (Morphy)

Our team created a stakeholder map in order to help prioritize where we would begin interviews and research. (See Image 9 below.) One of the critical findings we realized was the consistently low influence/power of the users (shown in orange). This stood out to us quite a lot, especially as the quadrants they landed in the stakeholder map suggests only "showing consideration," while shouldn't we be at least meeting their needs? This was a critical tool that shaped the rest of our project, as we began to understand that the users themselves must be put in the center of the decision making and service design.

Image 9: Our Stakeholder Influence/Interest Map - 3 March, 2016 (Berg)

Going from Data to Knowledge

Once interviews, observations, workshops, and research have been conducted, all of that data has to be gathered and synthesized in some way in order to turn it into knowledge. Our project leveraged various tools to do so, including P.O.I.N.T. analysis, affinity diagrams, and opportunity questions[5].

P.O.I.N.T. analysis is a technique to identify problems, opportunities, insights, needs and themes among all the data gathered. The data is then organized and grouped in an Affinity Diagram. This method allows you to examine relations, connections, and patterns within the data, and encourages new ways of thinking.

This helped highlight for us the various needs of the users within the larger mobility ecosystem. The most important finding for us was the car-centricity of rural Finnish life. This was central in all of our discussions with users, as well as our own observations.

Another theme of findings was the user experience of public transportation: inflexible, infrequent, inconvenient, and unsafe. The diagram helped to deepen our understanding of the transportation ecosystem: infrastructure, technology, and macro-level issues like service consolidation. This process helps to then identify opportunity questions based on the findings.

Some critical questions we found included:

- What if you didn't have to go to services?
- How could we make walking and cycling more attractive?
- What if there was no tech required to solve this problem?
- What if you didn't have to own a car in rural Finland to have the autonomy and flexibility you need?

Personas as a Shortcut to Users

One methodology we found especially useful for our process was the development of personas. Based on our interviews, discussions, and research, we created personas, which are archetypes of certain user profiles. Personas embody the backgrounds, needs, and frustrations of certain user groups, and thus help make the needs of those groups tangible. They keep the design focused on the user, and also act as a highly effective communication tool.

Based on our earlier findings in the Affinity Diagram, it was critical that we create personas that allowed us to look at the dimensions of dependence vs. autonomy when it comes to transportation and mobility. Thus, we needed to ensure we had a spectrum of users representing those dependent on public transport or others for their mobility, as well as those autonomous and independent, whether via public transport or their own vehicle. Considering the drastic differences in service levels in rural and urban settings, we found it critical to examine these different experiences as well (see Image 10 below).

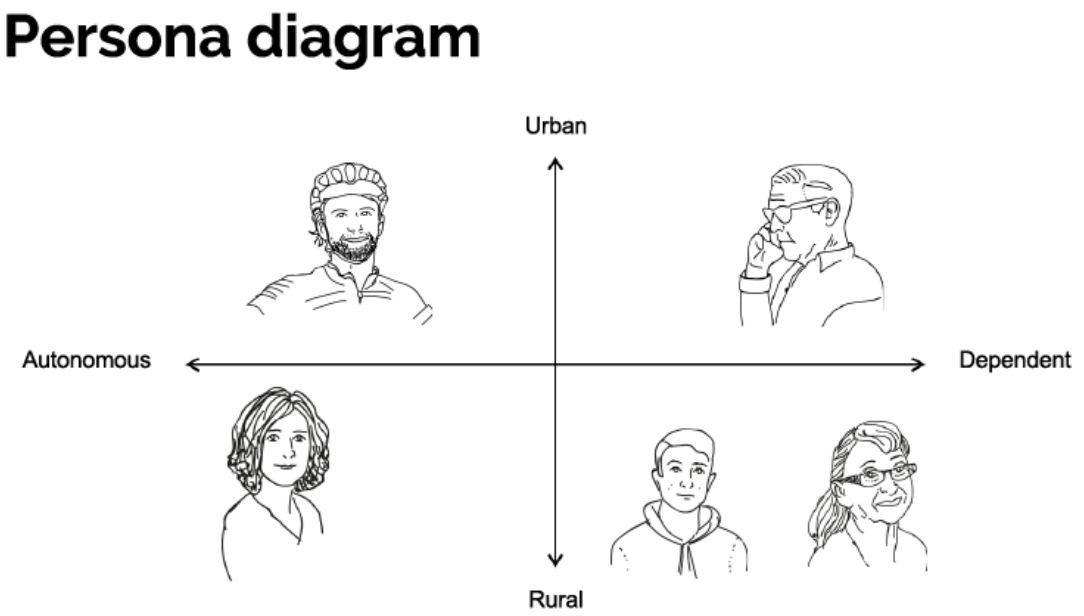

Image 10: Persona matrix (Berg)

We began by creating two personas in detail based on the data we gathered from conversations and interviews on our first trip to Hämeenlinna and Tuulos. The first persona is of Pasi Pyörä (Image 11 below), a bike enthusiast from near Hämeenlinna who thinks “There is so much potential and variety in bicycles - from babies to grandpas!” The second persona is of Pirkko Perheinen (Image 12 below), a mother of two from Lammi, who believes “Not having a car would be impossible, let alone dangerous!”

Pasi Pyörä

Cyclist, commuter

General information

31 years
No kids
Lives within 5 km of the city
Works for Hämeenlinna city
Active in local bike scene

Preferences/ Motivations

Sustainable lifestyle
Independence
Public transit vs. car ownership
Healthy lifestyle
<3 Ridesharing TRE - HKI via FB

Frustrations

No bike storage near shops
No bike maps
Cant ride bicycle trough the centre of Hämeenlinna
Cycle paths not plowed
Cant take bicycle on the bus
Private cars rule the streets

Needs / Expectations

Infrastructure:
roads, parking, lanes
safety, IT, delieveries
Getting an Air-donkey lock
Starts renting out his other bikes
Owns bicycles
Lends bikes to friends too

"it's all about natural pure energy"

Image 11: Persona: Pasi Pyorä (Berg)

Pirkko Perheinen

Private car, commuter

General information

40 years
2 kids, single parent
Works 10 km from home
Drops kid to daycare+school
Lives in Lammi, works in Tuulos

Preferences/ Motivations

Easy logistics
Quick + flexible
Control with kids
Safety, affordability
Goes to latotanssit, shares ride
Hobbies in the city

Frustrations

Consolidation of services
Public transit being reduced, complicated and unreliable
Dangerous bus stops
Low income, car is big expense
Child's speech therapy to drive to in the city

Needs/Expectations

Flexible mobility (kids, work, shopping)
Services, daycare, healthcare
Transport for kids - (school bus and carpool to get son to ice-hockey)

"safety, flexibility, convenience"

Image 12: Persona: Pirkko Perheinen (Berg)

These two initial personas helped us to understand different perspectives of users in rural Finland. Pasi represents the extreme bike user and urban resident with the necessary infrastructure and service level to enable commuting by bike. On the other hand, Pirkko represents many small village residents with limited public transport options, and the requirement for a car to meet the needs of herself and her family. Pirkko's persona became a critical component of our project as she represents such a large portion of rural residents in Finland. Public transportation options don't meet her needs, and for her the car is the only option.

Unraveling the Transportation System

One of the important next steps in the sense-making process was to move beyond the individual experiences and see the macro-level system as whole, as well as how all of the micro-level elements interact within it. Subsequently, Helsinki-based Designer and Architect, Hella Hernberg, taught us Systems Thinking. According to Donella Meadows, "A system is a set of things – people, cells, molecules, or whatever – interconnected in such a way that they produce their own pattern of behavior over time."[6] One of the tools in systems thinking is the construction of systems models or maps, which show the different actors and their interactions within the system.[7]

Not only do system maps show the interactions, but they also allow assessment of a system from its many and various perspectives, by applying STEEP analysis. STEEP stands for the social, technological, environmental, economical, and political elements within a system.

We created multiple systems maps with STEEP methodology throughout the project. In one version, we mapped various modes of transportation with the stakeholders in the mobility ecosystem. In the next versions, we went back to a micro-level to map the experience of a typical family in Rural Finland. And finally, we created another version (shown below in Image 13) as we began to consider the research opportunity: "You don't have to own a car to have autonomy and flexibility in rural Finland." To better understand this possibility we mapped all the elements contributing to transport choice.

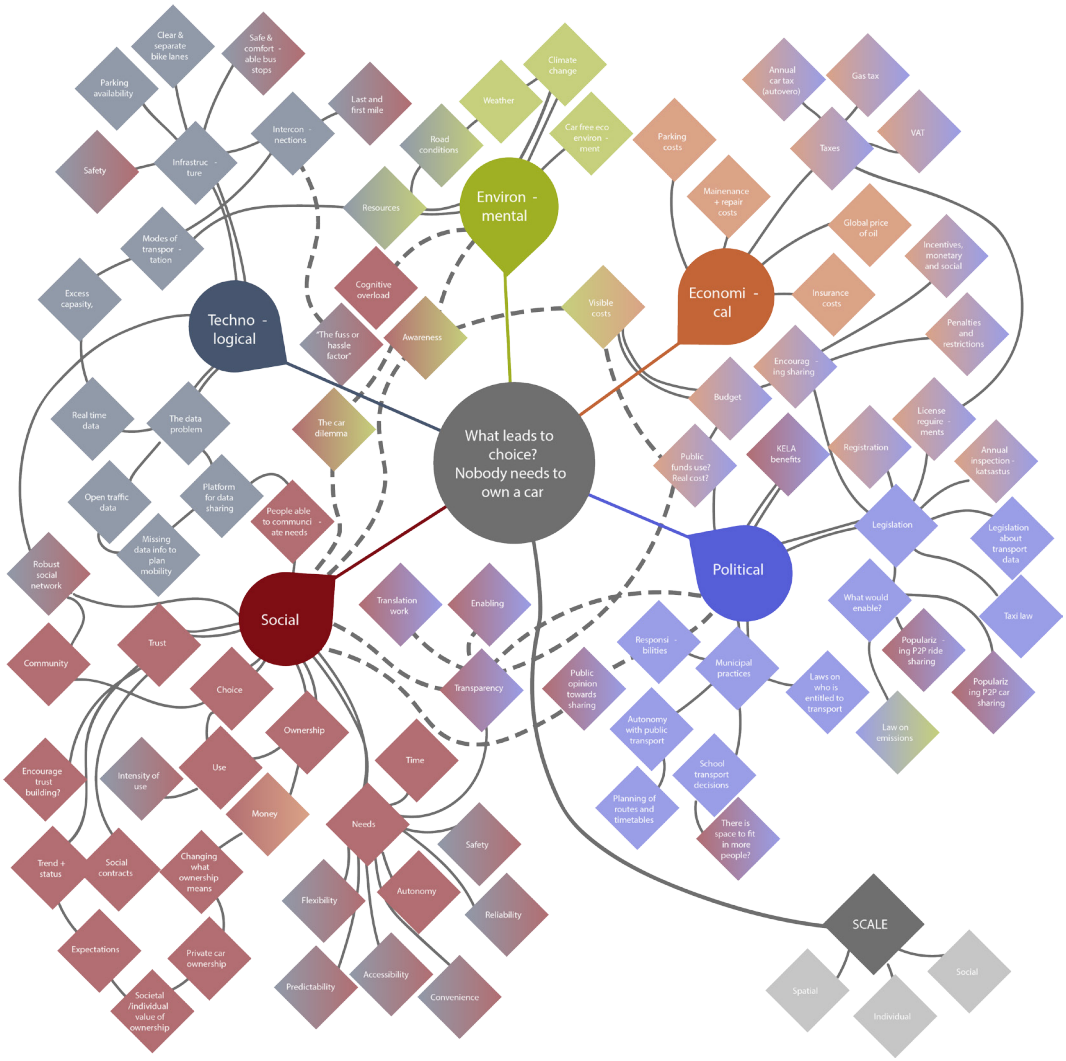

Image 13: Systems Map: What leads to transportation choice?

Mapping a Day in the Life in Rural Finland

As our project was so focused on the individual experience of residents in rural Finland, it was important to map the individual experience within the greater system. We continued to gather more input and insight from users around Hämeenlinna and small villages, and our Pirkko Perheinen persona continued to gain in relevance.

We used that persona and our interview data to create a systems map of a typical "day in the life" of a rural Finnish family, and the decisions they make regarding transportation on a daily basis. During the Design for Government mid-review we presented these various systems maps of Pirkko's decision process: getting her daughter Emmi to daycare, her son to highschool, herself to work, and her mother to services.

Applying systems thinking with the STEEP methodology to user decisions proved to be highly enlightening about rural users' needs and decision drivers. One such example was Pirkko ensuring her young daughter gets to school on a daily basis. This seemingly simple 2.5km journey involves many decision factors for Pirkko. In the case of this small village and many like it, the only feasible option for parents is to drive their children themselves or rideshare with other parents. See Image 14 below for the systems map of Pirkko's decision to use ridesharing to get her daughter to school.

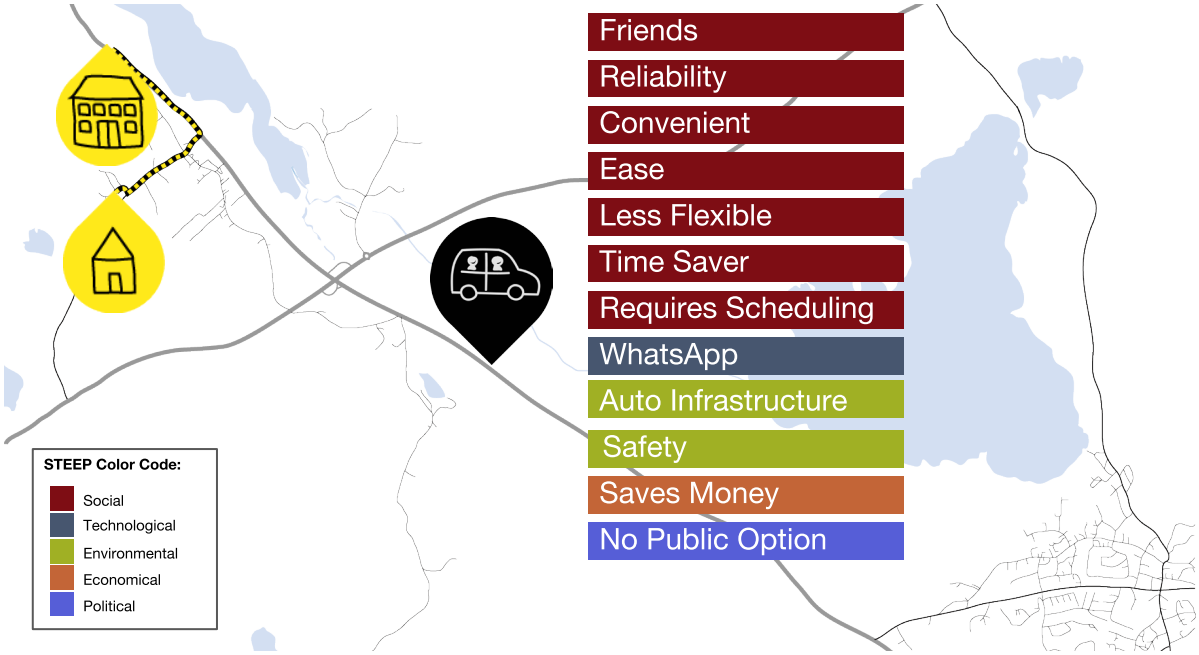

Image 14: A Day in the Life of a Rural Family - Transportation Decision Making Systems Map - Rides-haring

One of the key takeaways for us in this exercise was the overwhelming role that social elements play in transportation decision making. This was consistent among most individuals we talked to and surveyed in rural Finland. Social concerns almost always outweighed economic concerns for rural citizens; convenience, flexibility, autonomy, time, and ease were the critical decision factors. We found that environmental elements play another critical role in the decision making of a family in rural Finland. Many users we spoke with discussed the lack of sidewalks, bus shelters, bike racks, etc. When coupled with harsh Finnish winters, these elements make using public transportation entirely not an option for many rural residents.

Iterating

As we progressed through the project, we continued to gather more research and data. We iterated many of the above tools and models over time to continue to converge on meaningful solutions. Along the way we uncovered various transportation solutions across Finland (see Image 15 below), representing the formal and informal sides of transport, as well as private and public. We experienced first hand many of these transportation solutions, we gathered stories and experiences from individuals all over Finland, and we combed through reports and data.

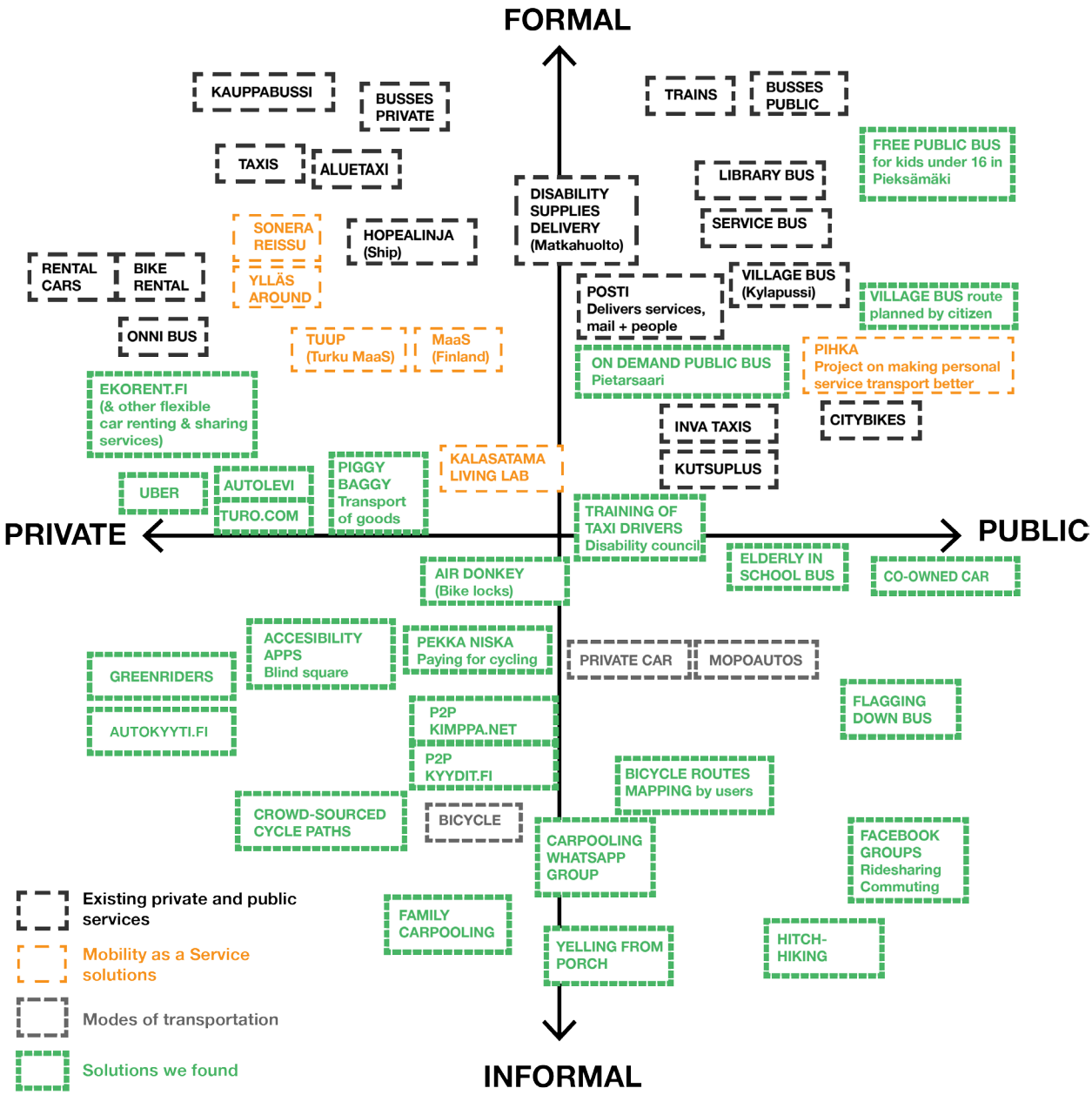

Image 15: Solutions Matrix

The more data we gathered, stories we heard, and data we consumed, the more important solving the challenge of transportation in rural Finland became to us all.

73% of people in rural Finland describe public transportation services as bad.[8]

That's more than 7 out of 10 people in rural Finland who are unsatisfied with their services. With 1.6 million[9] Finnish residents living in rural areas, this equates to

1.2 million[10] unsatisfied people in Finland.

The problem of transportation in rural Finland cannot be solved by simply connecting existing services in an application. Unfortunately in rural Finland, there simply is no service infrastructure in place to connect to. Thus, we began to conclude that solving the problem of transportation in rural Finland would require a whole new approach.

At this point our two teams diverged with two different approaches to reach this vision. Team Verka approached the problem from the standpoint of making public services better, by re-imagining public services and how transport planning is done. Team Liike approached the problem from the bottom-up, by accelerating citizen-created transport solutions.

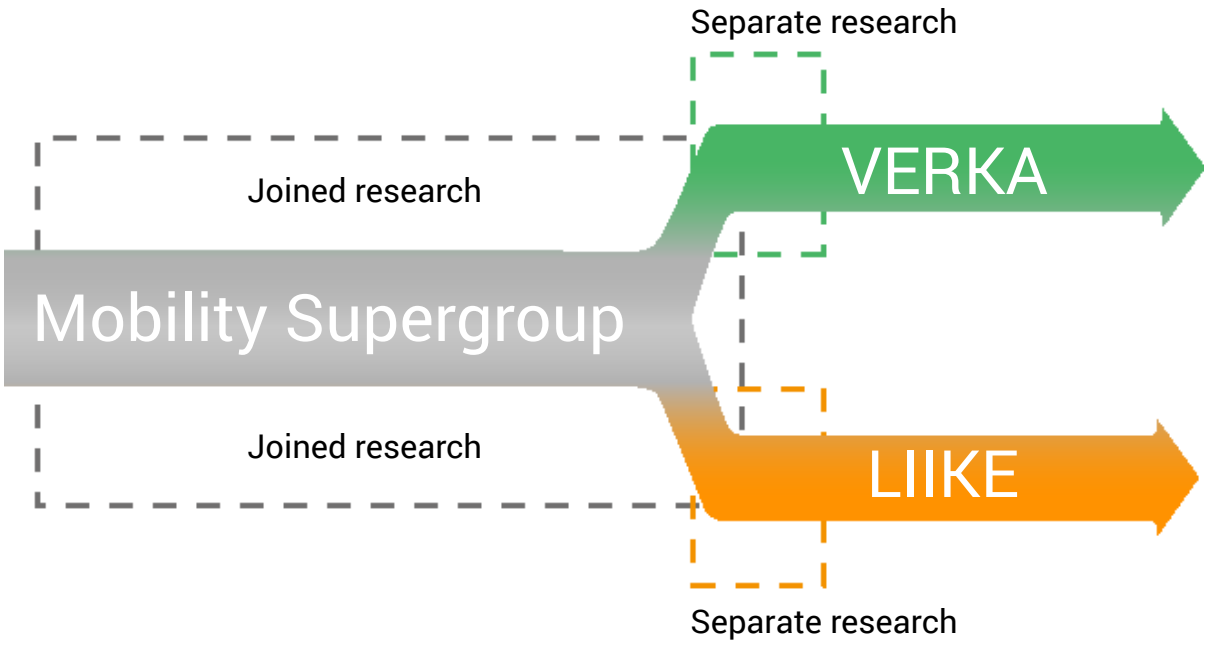

Image 16: Research process (Berg)

4. Re-Brief

The first round of research and analysis truly reinforced the problem statement given by the Ministry of Transport and Communication: public transport is limited and doesn't meet the needs of most citizens in rural Finland. Transportation needs are highly diverse, complex, and changing over time and there is no one solution that fits all of the diverse needs. Due to the car-centric environment, there are few feasible alternatives to owning your own car, and not owning one severely limits your access to opportunities. As a large part of the population, mainly children and the elderly but others as well, are not able to drive themselves around, the lack of transport options can severely limit their autonomy and the access to many of the things they would need in order to life a fulfilling life.

Although Mobility as a Service and the dramatic changes in the transport ecosystem, further accelerated by digitalization and automatization, might solve many mobility problems in the future, the people in sparsely populated areas likely won't be the first group to benefit from the new services and solutions. Many of the new mobility services that involve peer-to-peer –service provision or different sharing approaches are currently only available in the Helsinki region and might never spread to the rural parts of Finland, mainly due to the lack of potential users in the sparsely populated areas. Although the markets might not solve the mobility problems in these areas, many of the factors and societal megatrends that have led to the success of companies like Uber are also relevant in the Finnish countryside. Involving citizens in mobility solutions and finding new ways of cooperation and sharing are instrumental in creating a transport system that serves the users who are currently left underserved.

Mobility is a hugely important aspect in the lives of rural people, who might have to travel long distances daily in difficult circumstances, in regards to services and infrastructure. Moving around is almost never a completely private process, as people need to rely on others and accept different social contracts related to mobility, even when using a private car. It is therefore important to take social interactions and community structures into account when thinking about mobility solutions. This is of course especially vital when looking at the informal mobility solutions that rural communities are coming together to create by themselves.

Different examples of these bottom-up mobility solutions that directly address the shortcomings of public transport and the long distances to jobs, schools, services, and hobbies highlight how effective citizen-created solutions can be. Communities coming together to fill the gaps of public services or to participate in making them better is however an underutilized asset. We envision that by enabling bottom-up solutions, citizens in rural Finland can create their own transport solutions to meet their unique needs. The key questions in this process are:

- **How to create a framework/mindset that enables and encourages cooperation and sharing, building on the existing social contract of mobility?**
- **How do we enable users to create, use and trust bottom-up mobility interactions with help of legislation, socially sustainable practices and the shift in mobility?**

5. Solutionizing

How Different Ideas Emerged

After our team developed a thorough understanding of the problems in rural mobility and the roles of various stakeholders, we were able to start working towards creating a solution. We had identified the importance of citizen-created mobility solutions quite early on in our research process and believed that increasing their importance in the transport system would have a positive impact on society. In order to achieve this, we worked on understanding the behavior of individuals and groups better and conducted more research on existing needs and solutions.

Behavioral Insights

Behavioral insights are one of the key concepts of Design for Government. Influencing people's behavior is a central aspect of public policy but decision-makers typically operate with a limited understanding of different influences on behavior. Using insights from the behavioral sciences could lead to better policy outcomes than more conventional policy tools like legislation and regulation. The UK Behavioural Insights Team (BIT), which has pioneered the use of behavioral insights in public policy, has compiled nine of the influences it considers most robust into a mnemonic – MINDSPACE[11]:

Messenger	we are heavily influenced by who communicates information
Incentives	our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses
Norms	we are strongly influenced by what others do
Defaults	we "go with the flow" of pre-set options
Salience	our attention is drawn to what is novel and seems relevant to us
Priming	our acts are often influenced by subconscious cues
Affect	our emotional associations can powerfully shape our actions
Commitments	we seek to be consistent with our public promises, and reciprocate acts
Ego	we act in ways that make us feel better about ourselves

In this approach, behavior is steered by nudges, a term popularized by Richard H. Thaler and Cass R. Sunstein[12]. They define a nudge as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates."[13]

The possibilities of applying behavioral insights in rural mobility were approached by using the EAST framework developed by the Behavioural Insights Team. EAST stands for Easy, Attractive, Social and Timely, which are the four principles recommended for encouraging behavior.[14] Especially the EAST insights about social behavior were very useful in designing our proposal. One of the ways to incorporate social factors in an intervention is to use the power of networks, as according to BIT "we are embedded in a network of social relationships, and those we come into contact with shape our actions. Governments can foster networks to enable collective action, provide mutual support, and encourage behaviours to spread peer-to-peer."[15] Different nudges have been collected and categorised under the EAST framework. Some of the social nudges we found most useful are presented below:

Nudge	Insight
People Helping People	Public services can be delivered more efficiently and effectively by encouraging citizens to support one another
Network Nudge	We are influenced by the behaviour of friends and friends of friends
Reciprocity	We have an inherent desire to help those who have helped us in some way
Descriptive Norm	We use other people's behaviour as a cue for what's acceptable and desirable

Different creative ideation techniques have helped us create insights from all the data and information we've gathered. The AT-ONE touchpoint cards developed at the Oslo School of Architecture and Design were a useful tool in the innovation process and helped our team brainstorm new ideas and identify relevant touchpoints. Touchpoints are all of the ways in which people can interact with a service. As the design process is iterative and nonlinear, we also constantly returned to analysis methods we had used earlier in the process. Constant brainstorming and discussions on the direction of our proposal were naturally also vital for coming up with new ideas.

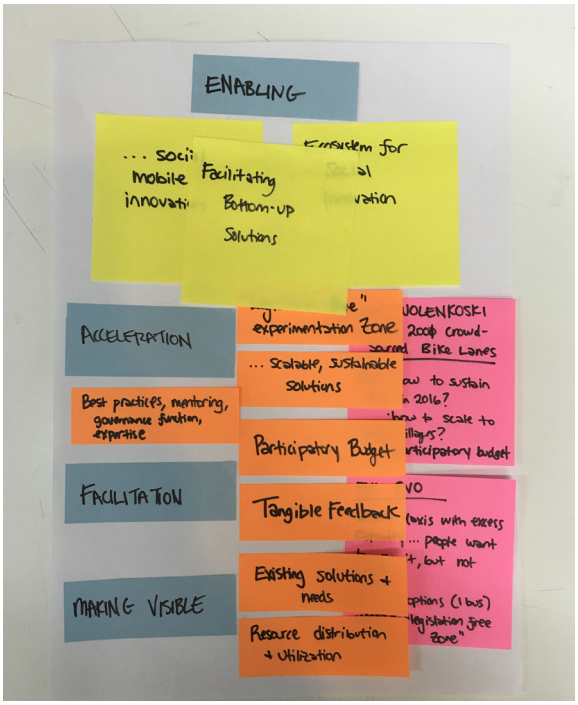

Image 17: Laying out building blocks

Team-specific Research

Working towards a solution, our team gathered a lot of new information to complement the vast amount of research we had already done in the early parts of our project. With a focus on bottom-up solutions, we interviewed experts from the public sector, organisations and citizens who had an active role in creating mobility solutions, as well as gathered data from other sources. We received valuable feedback and insights on the public sector's role in enabling new, citizen-created services from Maria Rautavirta from the Ministry of Transport and Communication. Anna-Mari Ahonen from Growth Corridor Finland helped us to advance our thinking about the role of the market, the public sector, and this critical informal citizen sector. Maija Bergström from Forum Virium's Smart Kalasatama project shared experiences about how their project is involving local residents in service creation and experimentation[16]. We spoke with Hanna-Leena Ottelin from Sitra about her experiences from the Jyvaskyla Resource-Wise Experiments program, which Sitra ran in coordination with the city of Jyväskylä from 2013 to 2015[17]. The program included experiments in the field of mobility and engaged citizens in the process. Sitra's methodology of experimentation highly impacted our thinking. In addition to these expert interviews, desk research into benchmarks and design practices sharpened our understanding of the problem and the required solution.

Officials in charge of public transport and city planning with the City of Hämeenlinna provided us with vital information about the realities of transport in the rural parts of our project site Hämeenlinna. We received a citizen perspective on the same issues when 85 local residents shared their mobility habits and issues through the online survey we posted on the internet sites and social media pages of villages and local organisations.

Perhaps the most important part of the research were the visits and phone interviews with rural communities. We found out that citizens all over Finland are creating their own transportation solutions to fill in the gap where public transportation doesn't meet their needs. In many cases of course that "solution" is citizens having their own car. In others, however, it involves informal ride-sharing with neighbors, family, friends. Yet, in others it begins to take new forms and become more organized in communities, villages, and even across villages. Below are some examples of these bottom-up solutions that we discovered and analysed.

Ride sharing in Tikkala via WhatsApp

We interviewed a woman in Tikkala who coordinates a village-wide ride sharing group. They use the mobile messaging app, WhatsApp, to enable real time ridesharing! It's simple and a very user-friendly way for arranging rides. 24 families currently participate in the group.

Vuolenkoski village association crowdsources their own sidewalks

We interviewed a resident of Vuolenkoski who was a member of the 5 person planning committee and core planning team for the crowd-sourced sidewalk of Vuolenkoski.

In 2001, the villagers of Vuolenkoski wanted a sidewalk on the heavily trafficked road that went through their village. As the local authorities didn't find the project feasible, the village association planned the road on their own and provided significant funding and hundreds of volunteers for the construction of the road, which was carried out in collaboration with the local authorities.

Riding the bus in Janakkala

We spoke with a resident of Janakkala who shared how their village takes the bus. Citizens and the bus driver in Janakkala have taken safety and convenience matters into their own hands with some common-sense regulation of their own, allowing the bus driver to pick up the residents from safe and convenient locations.

Tassu-bussi of Tervakoski

A resident of Tervakoski contacted us to share her story. In 2012, Tervakoski didn't have bus service during the weekends, making shopping in nearby Riihimäki impossible without a car. There were municipal elections that year and this issue was brought up, but ultimately the village association took matters into their own hands.

The village association planned their own village bus from scratch - the route, the schedule, they contacted the service provider, and presented a full proposal of all of this to the municipality. The municipality had no option but to agree by allocating 5000 euro to run a pilot.

The pilot was a huge success! Initially 27 users showed up for a bus that seats 16. Usage numbers continued to soar during the pilot, and the municipality eventually agreed to make the Tassu-bussi permanent. To this day, usage numbers soar above similar village buses, averaging 87.5% usage in the Tervakoski bus vs. 25% usage in other Tassu-lines.

18: A dirt road in the countryside (Ikonen)

Other solutions

In addition to these solutions, there are multiple other bottom-up solutions we read or heard about. Based on our research, the citizens are creating or would like to create local solutions in the following areas:

Building bike paths and sidewalks
Constructing bus shelters
Utilizing parking space for "Park & Rides"
Initiating village buses
Rethinking school bus and taxi use
Enabling tax incentives for carpooling
Employing ridesharing networks

Building our Proposal

The two key key findings of our research and analysis are:

1. People are addressing their mobility problems by coming up with their own solutions that work well and often involve larger communities
2. These user-created solutions are typically disconnected from the public transport sector. Connecting bottom-up solutions to the formal transport process is however vital in order to develop innovative and effective solutions to complicated mobility problems.

These are also the two areas we decided to build our proposal around. First, by finding ways to accelerate bottom-up solutions and second, by bridging the gap between the authorities and the people. While presented separately here, the two issues are intertwined and can, and should, be addressed by one solution. Based on the bottom-up solutions we analysed, the most effective way to accelerate solution is to bring the people and the authorities together to find solutions to mobility problems. This gives the people more resources and expertise while providing the authorities with new perspectives, real information about user needs and effective ways to engage people.

To find ways for accelerating bottom-up solutions, we looked to different existing accelerator programs, incubators and actors who engage citizens in service co-creation and provision. Especially Sitra's efforts with different mobility-related projects were a great inspiration for our work. We also looked towards the startup world and for example Demos Helsinki's Peloton Club accelerator, which connects start-ups to tools and networks they need in order to build and test their ideas. Smart mobility is one of Peloton Club's areas of focus.[18]

This benchmarking showed that while a lot is being done in regards to accelerating mobility solutions, there is also a clear gap. Very little assistance is available to local communities trying to develop small-scale solutions that address their specific needs. As these solutions are likely not very profitable and not readily scalable, it is understandable that providing assistance is not in the interests of commercial actors. Accelerating these local mobility solutions is still an important cause as, in addition to improving the quality of life of the local people, they can save municipalities and the government a lot of money by making public services more effective.

Image 19: Tractors in the field (Ikonen)

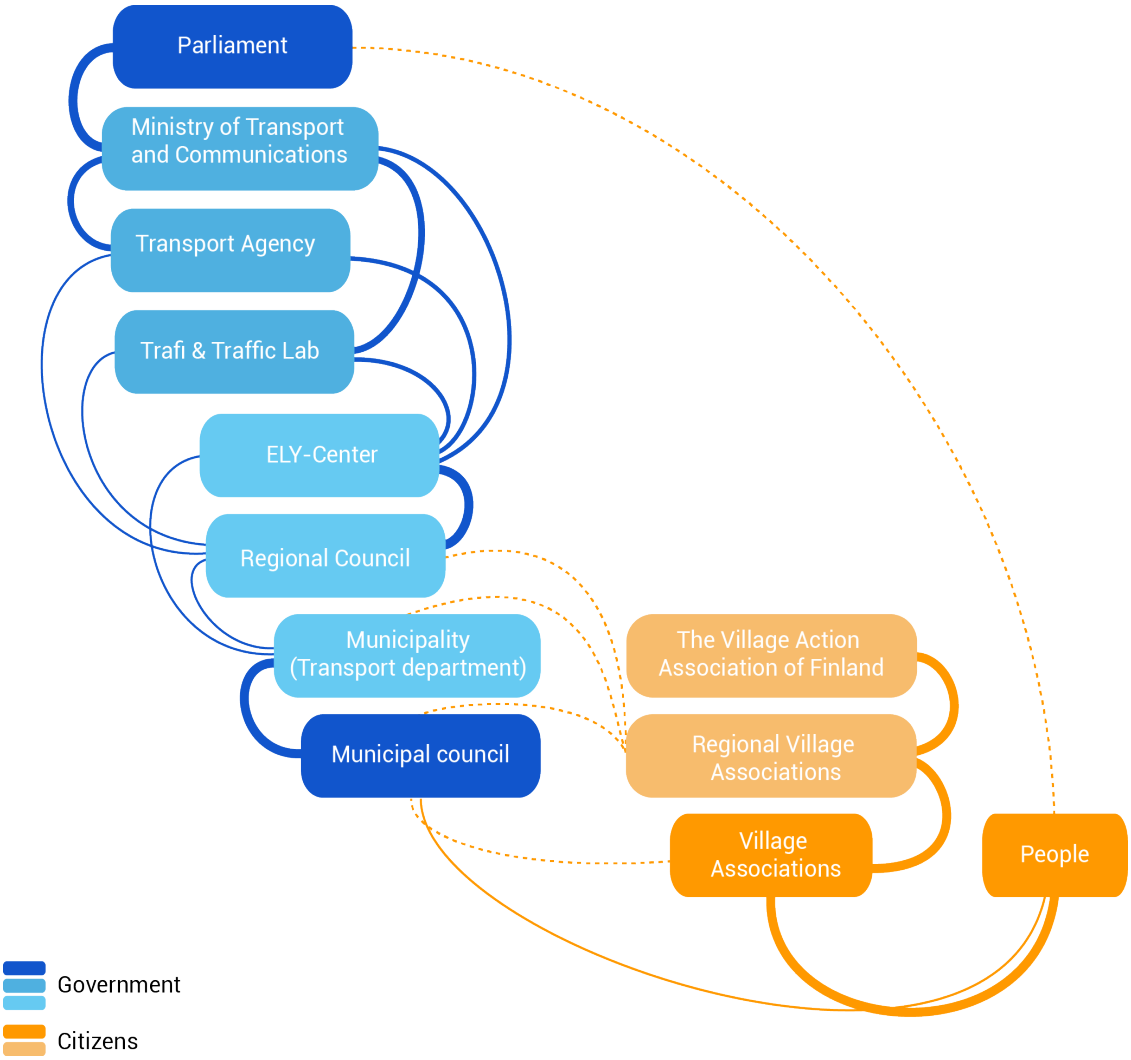

Image 20: System Map of rural mobility stakeholders (Ferreira Litowtschenko)

Figure 20 shows a simplified system map of the stakeholders in rural mobility. It reflects the information we gathered of the situation through interviews, observations and desk research. It illustrates how removed the people are from the decisionmaking process, with very limited means to influence the services provided to them. In addition to a lack of influence, there is little communication between the two sides and the flow of information from the citizens towards the authorities is very weak. The authorities are somewhat well connected to each other but this missing connection to the citizens is a huge obstacle that hinders the citizens' motivation and capabilities to create and maintain bottom-up solutions for their mobility problems.

6. LIIKE

Overview

Liike is a program to accelerate bottom-up transport innovation in rural Finland. This program is run by the Ministry of Transport and Communications, to work with rural communities on a local level, enabling new transportation solutions & new opportunities for citizen involvement. Liike connects the citizens and village associations to decision-makers and creates a new culture of participation in rural transportation services.

Liike's stakeholders include the Ministry of Transport and Communications, municipalities, transport authorities, village associations and the people. In some of the cases it also connects the project to different funding sources and piloting platforms if needed, like Sitra and Kokeileva Suomi.

Cornerstones

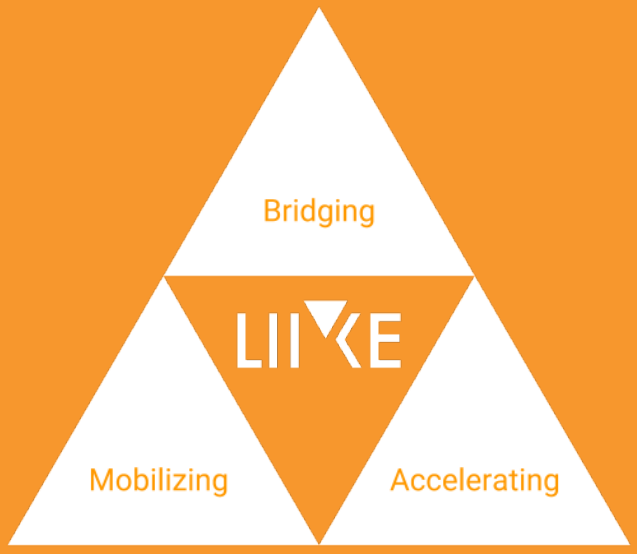

Image 21: Cornerstone principles of the Liike program

The program is built on three cornerstone principles: bridging, mobilizing and accelerating (image 21). The first principle is about bridging the current disconnect between the public sector transport actors and the citizens. This bridge will simplify processes and create a common language. The next principle involves mobilizing and enabling partnerships between the public and private sectors, and the people, making the process of collaboration and participation easier. The last principle refers to accelerating the creation of more local transport solutions. A local hands-on approach will combine with new tools (such as experimentation with legislation, budgets, planning, and new partnerships) to make it easier than ever to make local transport solutions that directly meet the needs of the people.

Liike Building Blocks

A few key elements are required to accomplish this: Local Mobility Advocates, new tools, and leveraging the existing networks of the village associations.

Local Mobility Advocates

The central component of the Liike programme is the Local Mobility Advocate. These advocates will be working on the ground directly with rural communities to solve mobility issues. While they will be employed by the Ministry of Transport and Communication, this role marks a new approach as the Local Mobility Advocates will be working in the direct service of village associations and rural communities. The Advocates will act on behalf of the people with authority from the government, connecting these two sides in a very concrete way by coming from the ministry to work among the people. They are the force that moves the projects forward, working side-by-side with the villages.

As the Advocates have authority from the Ministry, they have the ability to work with local authorities to remove barriers of legislation and bureaucracy that currently block transportation innovation. When combined with the knowledge of the current transportation situation (for example, the actualization of the transport code), this truly bridges the gap between the citizens and authorities. The Advocates will also posses the position and influence to persuade local governments and other local stakeholders to participate in different stages of the process.

Additionally, the Advocates will report on their work and findings to the Ministry, thus providing decisionmakers with information about user needs and emerging practices. This provides a critical feedback loop back to the Ministry, that will help improve national transport policies as a whole.

This proposal is based on our research findings that bottom-up mobility solutions today are locally tailored solutions driven by the people. Trust and social networks are critical in these rural environments. Thus it's imperative that Liike Local Mobility Advocates work with and for the people. Yet, they need to possess that connection that is missing today from the authorities and decision makers.

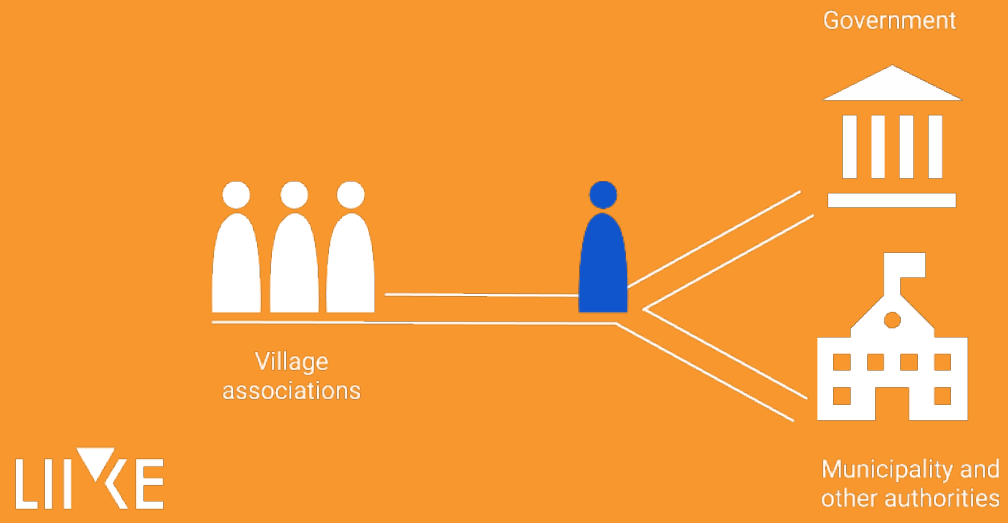

Image 22: Local Mobility Advocates bridging the gap between rural communities and government decision makers

“Radical public service innovation involves a process of social discovery, not a template to copy.” [19]

Local Mobility Advocates alone will not be able to enable bottom-up transportation innovation. They require the necessary tools to enable experimentation, new models of citizen participation, and piloting. It’s imperative to remember that this kind of innovation isn’t copy/paste, yet instead it’s organic. It requires an iterative process of constant learning, trying, and discovering.

In order to enable that process, the Local Mobility Advocates will need to be equipped with the proper tools to bridge the divide, mobilize partnerships, and accelerate new solutions. Those tools belong to the following categories:

Communication: Channels of communication to all relevant actors (internal and external communication).

Collaboration: The Local Mobility Advocate works to create a collaborative effort between the parties towards finding a solution.

Innovation: An important part of what the Local Mobility Advocate does is facilitating the creation and development of ideas, regarding citizen’s mobility needs.

Regulation: The Local Mobility Advocate has the authority to remove bureaucratic obstacles that are the most common barriers for mobility solutions.

Funding: The Local Mobility Advocates have a small budget for funding promising small-scale pilots and other projects. The Advocate is also directly connected to the government’s experimentation platform and Sitra. Getting municipalities to fund projects also makes sense, as they will receive most of the potential benefits.

Coordination: The Local Mobility Advocates have a very hands-on role in the project work. They take care of any applications or paperwork, coordinate the experiments and projects, and compile any data for assessment.

Village Associations

One of the guiding principles of Liike is that citizens usually have the best ideas about what their mobility services should entail. The village associations are a strong existing network that already work directly with with citizens. Each of the 19 regions in Finland has a regional village association, that represents the more than 3,000 individual village associations of Finland.[20]

These associations already have a position of trust within the social networks of small villages all over Finland. It is through these organizations where people come together to solve local problems, the majority of which are already mobility related. These village associations offer the locality, social capital, and trust that the Local Mobility Advocates will benefit from by connecting to these networks. The Liike program is inspired by the Rural Development Program of the Ministry of Agriculture and Forestry. It works together with the village associations with different citizen-led rural development projects.

Liike in Motion

To clarify the tools and show the role of the Local Mobility Advocate in action, we introduce a case example.

LIIKE

Case: Remote village in Hämeenlinna municipality

Problem Background: We interviewed the village association of a small and remote village in the Hämeenlinna municipality with no services and very limited transport connections. The villagers were very frustrated with the ineffective and inflexible way that school taxis are arranged. Additionally, policies around them are very restrictive. These taxis are the only public transport connection to the village during the day, and legislation prohibits that the empty seats are used by others, for example high schoolers or the elderly.

The village association has tried to speak to transport officials at the City of Hämeenlinna to give feedback and discuss improvements. They have however not gotten a response to their many emails and phone calls, and feel completely disconnected from the decision-making regarding the services they use.

Communication: Liike brings the village association and municipal transport officials together to discuss the situation. Whereas this might sound like a simple thing, today this village has had a very hard time getting these kinds of meetings on their own.

Collaboration: The municipal transport officials initially show how transport is planned, and then commit to helping the village in their efforts.

Innovation: The villagers would like to plan their school transport themselves. The Liike Mobility Advocate helps in developing their idea into a feasible pilot.

Regulation: The Liike Mobility Advocate helps remove bureaucratic obstacles of the municipality to enable the villagers to pilot their idea. This allows the people to participate in tasks that are typically handled by officials.

Funding: In this case, the small pilot doesn't require funding as the municipality is enabling it through reallocating existing vehicles and drivers.

Coordination: The Local Mobility Advocate helps to do the paperwork required for the pilot, as well as coordinating the new school bus schedule.

Piloting citizen-led services helps all parties to understand each other and the complexity of the situation. Liike enables cooperation and participation where it previously didn't exist. It bridges the gap between the people and the government. The municipality can use the results of this project in developing more efficient school transport in the future.

Implementation

The Liike program involves a few key stakeholders. The Ministry of Transport and Communications' role should have the ownership of the program, in order to impart the necessary authority on the Local Mobility Advocates.

The Local Mobility Advocate will come from the ministry but work among the people at the regional level, partnering with regional Village Associations, transport authorities, regional governments, and municipal governments. Although Liike might be set up by the Ministry, it should be considered a joint effort between all the parties. Giving all of the major stakeholders some influence in the planning and implementation of the program is important in order to engage all of the relevant actors. The success of Liike will require good cooperation between the authorities.

The Ministry should provide some instruments to enable the Local Mobility Advocates and the citizens to innovate new solutions. These instruments might include, for example:

- The ability to enact "legislation free zones" to free up the transport code to try new ways of using existing transport resources
- Experimentation capabilities, including the aforementioned legislative changes, participatory budgets, and new partnerships between the people and public actors.
- Unblocking existing municipal and regional barriers
- Tax incentives for ridesharing

Roadmap

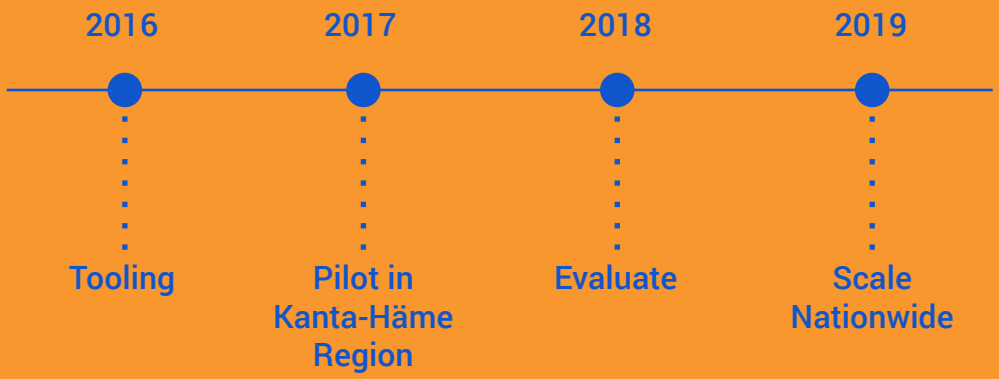

Image 23: Roadmap for Liike

2016: Tooling and developing a pilot:

The remainder of 2016 will be used on two core issues:

Validating the experimentation phase of the program:
Building of Liike will begin by sharing the program's concept with village associations, transport authorities and other stakeholders. The Liike model will be developed further in cooperation, based on their feedback. An early priority is finalising the job description and required competencies of a Local Mobility Advocate in order to recruit one for the pilot.

Preparing the tools:
The tools required to impact rural mobility will be further defined at this stage by examining identified needs and problems. The problem areas will be mapped in close collaboration with village associations while the availability of different tools will be negotiated with institutional stakeholders. The Ministry has a leading role in preparing the tools related to removing bureaucratic and legislative obstacles.

2017: Piloting Liike

Liike will be piloted in 2017 by placing a Local Mobility Advocate in the Kanta-Häme region. According to our research this is a good place for trying out the new model

thanks to local innovative actors like the Hämeenlinna Living Lab and Growth Corridor Finland. The region also contains rural conditions that are similar to many municipalities across Finland.

Additionally, our field visits have made it clear that many individuals and village associations in the region are eager for a solution of this nature.

2018: Evaluation and preparations for scaling

The evaluation stage consists of assessing the pilot and the separate local projects developed during this time. This will be done by looking at the economic impact of Liike as well as by gathering feedback and learnings from the village associations and other stakeholders. After demonstrating the value that Liike has for the rural mobility solutions, the preparation for scaling can begin.

2019: Nationwide scaling

In 2019 the Liike program will be expanded to the whole country. The Liike model is based on locality and therefore requires a local advocate in each Finnish region. There are currently 19 regions in Finland, and each of those has a strong Village Association network. The nationwide expansion of Liike marks the beginning of a bottom-up revolution of mobility.

LIIKE

will

Empower more citizens to be a part of the solution

Strengthen rural transport as a whole

Unite the government and the people, opening new collaboration models

Foster a culture of collaboration

Cultivate experimentation at the grassroots

7. Discussion

The Design for Government process has truly opened our eyes to the mobility challenges of people in the rural areas of Finland. Before setting on this process of discovery, no one from our three-person project team had any idea about the realities of transport in sparsely populated areas. Immersing ourselves in local contexts and relating to the situations of the people have allowed us to gain immense and often surprising insights. But while the struggles of the people are now very clear. we have also gained an understanding of the difficulties faced by the authorities responsible for providing transport.

It is clear that the public sector is not able to produce sufficient transport services in rural Finland under the current model. Public subsidies towards transport have tripled in the past 20 years and annual public transport subsidies broke the 1 billion euro milestone in 2013[21]. Despite the increased investment, the level of service is still declining in large parts of the country. The government is in the process of changing transport legislation and e.g. removing obstacles that currently limit citizen participation but a change in legislation might not be enough to get citizens to fill the gaps in public service. Empowering more citizens to participate in providing solutions requires a larger shift in the mindsets of both citizens and authorities. The culture of working together will not create itself, it needs to be fostered by a program like Liike.

What we are proposing brings new demands for public officials. The Liike model requires authorities to involve citizens more than they have before and often work in collaboration with local communities. While this might be a challenge for organisations that are used to a different way of working, the benefits should outweigh the costs. Creating a culture of collaboration and engaging citizens is simply necessary in order to meet the complicated challenges of rural mobility.

Our proposal ties in with many ongoing governmental projects and targets. The Ministry of Transport and Communications, together with other ministries[22] is currently working on a project called Smart Countryside which targets the development and diversification of rural areas' services by using digitalisation and experiments. The project is currently in preparation phase, with experimentation set to begin in 2017. Introducing the bottom-up perspective of Liike to the technology-oriented approach of Smart Countryside would allow the project to better reflect people's true needs.

On an even larger scale, the strategic programme of the current Finnish government sets the objective of introducing a culture of experimentation, which will "aim at innovative solutions, improvements in services, the promotion of individual initiative and entrepreneurship, and the strengthening of regional and local decision-making and cooperation. Experiments will make use of citizen-driven operating practices."[23] The government is setting up an experimentation platform, which Liike would complement by truly introducing experimentation at a grassroots level and building experiments designed to create change.

The government programme also states that creativity is currently inhibited by Finland's rigid structures, bureaucracy, overregulation and standardisation, which are holding back initiative and participation as well[24]. The government has therefore set a target of removing unnecessary regulation and bureaucracy. As citizen-created mobility solutions are constantly running into bureaucratic obstacles, the learnings from Liike would be important in identifying the scale of these problems and developing suggestions for deregulation possibilities. Another governmental objective is to increase cooperation between central and local government, which is also at the heart of Liike.

In conclusion, we believe that paying more attention to citizen voices will lead to significantly improved outcomes in rural transport. Bringing citizens and authorities together to solve the complicated mobility problems will lead to innovative and efficient solutions, as local communities have a strong motivation to participate. They also usually have a better understanding of the specific problems they are facing than the authorities would have and can therefore offer tailor-made solutions. This culture of participation and collaboration will be welcomed by society as a whole.

8. References

Image references

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Aalto University

Our contact information

María Ferreira Litowtschenko
MA in Creative Sustainability (Design) program
Aalto University
maria@ferreira.com.uy

Jaakko Ikonen
M.Soc.Sci in Social and Public Policy program
University Helsinki
jaakko.ikonen@gmail.com

Kristin Swan
Msc. in Business Strategy program
Aalto University
kristinswan@live.com

Design for Government course at Aalto University

LIIKE

A Program to Accelerate
Bottom-up Transport Innovation

June 2016