

Příloha 1 - Tabulka elementů dopadu otevřených dat dle Verhulst a Young (2017)

Category/factor	Description
<i>Problem and demand definition:</i>	Understanding and clear definition of the problem and the demand
<ul style="list-style-type: none"> ● User Research ● Causes and Context ● Refinement ● Benefit and Goals ● Data Audit and Inventory 	<ul style="list-style-type: none"> ● Optimization purpose for a clear audience ● Addressing the causes and context in a direct manner ● Refinement of the understanding of the problem by seeking to understand it ● Definition of the intended benefits and setting clear goals ● Capability to audit and explore the availability of datasets
<i>Capacity and Culture:</i>	Availability of human capital and technological capabilities
<ul style="list-style-type: none"> ● Data Infrastructure ● Public Infrastructure ● Tech Literacy & Internet Penetration ● Cultural/Institutional Roadblocks ● Skills & Expertise ● Feedback Loops ● Resource Availability & Sustainability 	<ul style="list-style-type: none"> ● Availability of hardware and software platforms to support data ● Availability of data science and statistical knowledge, public services, and users ● Awareness about the existence of a digital divide and broadband internet connection ● Openness skepticism of the institutional culture and lack of well-trained professionals ● Availability of skilled and expert users for sophisticated technical usages ● Availability of mechanisms for user feedback and input ● Availability of supply and demand, and funding
<i>Governance:</i>	Responsive and legitimate decisions regarding the use of open data
<ul style="list-style-type: none"> ● Performance Metrics ● Risk Mitigation ● Open by Default ● Freedom of Information ● Data Quality ● Responsiveness 	<ul style="list-style-type: none"> ● Development and monitoring of impact metrics for decision support ● Ensuring the data disclosure without infringing citizens' privacy (data anonymization) ● Adopting policies and practices to ensure all data is made open ● Providing data accessible and usable without restriction for the public ● Addressing issues of data credibility (inaccurate/lack of completeness) and trust (out-of-date/corrupted datasets) ● Lack of responsiveness and lack of commitment to take up data-driven insights
<i>Partnerships:</i>	Collaboration within and across multiple sectors
<ul style="list-style-type: none"> ● Data Holders ● Intermediaries ● Domain Experts ● Collaborators 	<ul style="list-style-type: none"> ● Endorsing partnerships with private stakeholders to larger the data supply ● Using intermediaries to help users reach the open data-driven outputs ● Addressing problem areas through domain expertise rather than technology ● Extending open data practitioners' capabilities with knowledge transfer
<i>Risks:</i>	Assessment and mitigation of the risks concerning open data
<ul style="list-style-type: none"> ● Privacy Concerns ● Data Security ● Poor decision-making due to faulty information ● Entrenching power asymmetries ● Open washing 	<ul style="list-style-type: none"> ● Awareness of the potential for fraudulent and deceptive practices concerning privacy ● Striking a balance between data accuracy and privacy violation, or the danger of rights ● Recognizing the risks inherent in taking critical decisions based on faulty data ● Awareness of the reinforce of existing privileges and authority, or the digital divide ● Awareness of the mismatch between the public expectations and the government transparency on data publication

Elementy dopadu otevřených dat dle Verhulst a Young (2017) – v Neves, et al. (2020, s. 7)

Příloha 2 - Přepisy rozhovorů s respondenty

Seznam přepisů rozhovorů:

1. Tabitha - Bus Turnaround
2. Holger - Sozialhelden - BrokenLifts, Elevate, Wheelmap
3. Manuel - Chipi
4. Matteo - Velobò, ParkInBÒ
5. Pasi - Transporter
6. Raul - Boiradev

Rozhovor 1

Bus Turnaround - *Fixing NYC's Buses*

Tabitha – propagátorka advokační kampaně Bus Turnaround, zástupkyně výkonného ředitele v organizaci TransitCenter, New York, USA

František: Hi Tabitha

Tabitha: Hello good morning good afternoon I should say good morning.

František: Do you hear me well?

Tabitha: Yeah I hear you well, can you hear me?

František:

Yeah I can hear you great.

Just second,

I check if I record everything, yeah, okay.

So how are you today?

Tabitha: I'm good yeah it's a beautiful day in New York, it's maybe gonna be eighty degrees fahrenheit so.

F. It's nice weather here in Prague too.

So that there is a great that you you've been like willing to have this interview with me.

At the beginning I would ask you, if you wanna ask me anything, why I'm doing this research or anything about me? And then I would like to ask you for information consent for the interview. And then we will move to to the interview, but at the beginning, do you have any questions on me?

Tabitha: Sure you go you might have explained it in your original email, but I can't remember what is the sort of main main question of your research I know that it's about open data projects but what are you hoping to understand?

František: I'm looking at the successful open data in initiatives abroad Czech republic and I'm looking I'm trying to understand what helps to establish the functioning like project based on open data. And in the world it's like thousands of them and every one of them is working with open data in different ways. And I am looking at how they use them, why they use them, and what the thing which is, what is giving it, what is the best thing they got from the open data. And ah I would like to use the research or the things I get to know from the interviews to show how we can use open data here in Prague.

And now right now we are quite good and open in like smart city things and we are using open data more and more, but I would like to know what the people abroad do with them.

Tabitha: Yeah yeah ,thank you that makes sense.

František: And ah what's my plan with to do with the interview I am now recording the interview and I would like to record all of it, then transcript it and use your ah answers for my research.

And I'm suggesting that I would like to use the name of Bus Turnaround initiative in my research, but I will anonymize your name so it doesn't have to be there and I will add the transcript as an attachment to my research and is it gonna be published just in Czech language.

Tabitha: Ok.

František: So I am planning to translate like parts of your answers and I would like to let, you know, that you have the right to refuse or withdraw from the interview anytime you want and then I have to erase all the data.

Tabitha: Okay so that all sounds fine and I'm also I am fine with you using my name.

František: Okay.

Tabitha: And topic that I often speak about publicly and so there's I don't feel I need to be anonymous on this. So it's fine for you to know to use the things that I say in a transcript. That is fine for you to refer to the Turnaround project. Thats okay.

František: Okay so can you just say that you are giving me the information consent to my research?

Tabitha: Sure, you have my my consent to use this interview data in your research including the transcript and translating it into Czech.

František: Thanks a lot, thats great, so now to to interview.

Could do at the beginning describe me what's your initiative, what is the bus turnaround project?

Tabitha: Sure so, I work at an organisation called transit centre.

We are an advocacy organisation that's focused on improving public transit in the United States and the Bus turnaround project or a bus trade around campaign. Really we call it a coalition of four different transit advocacy organisations in New York who are working to see that our local bus system provides faster and more reliable bus service.

František: Okay and could you describe me the story, how you came up with the idea, how you established the project like what was the surroundings around it around the beginning?

Tabitha: Sure and I would say that the use of of open data in the Bus turnaround project, it was an effort of transit centre so of my organisation. And we, you know, we were in the early stages of thinking through what some of the ways, that we could use to really influence our city government. To you know, to provide better but service or city government in our transit agency which is a state entity and we were thinking how could we, how could we pressure them to make bus service better and we were aware that, you know. All of the buses were now able to be tracked sort of on gps and that the transit agency was making that data publicly available for the purpose of allowing app developers to you do, to like bus drivers know, when the bus was coming and so we also became aware that some civic technologist, you know, had voluntarily been working with that bus data to understand. How the bus, actual bus service, compared with the scheduled bus service and so, you know, this, so we knew, that that folks were already working with the data and so we started to think, you know, how could we partner with those specific technologies to better understand, how fast or really how slow our buses were and how unreliable they were.

And I would say that of course the transit agency knows these things, but the public you know, bus drivers, knew that the buses were slow. I knew that the buses were unreliable. But we realised or we suspected that having the precise numbers will help us both to better understand ,how bad the service was but maybe more importantly to attract the attention of elected officials, especially through the press.

František:

Ohh.

Tabitha: So in the beginning I mean the sort of origin story is, that we started to talk to one civic technologies in particular. Someone who kind of voluntarily, on his own time inspired by a local city council person had taken it upon himself to, you know, make a huge archive of that data from, you know, from the trends of authority. And start it, to analyse it. So he was doing it as a sort of independent,, you know, again and sort of voluntary product

and the public interest. We started to talk to him and say well you know, what would it look like to make report cards for every bus in the system.

František:

Great and the idea with the report card that you will use, this like, there is many ways how to show the problem and when I first see the report cards, it was like really nice to see for me, because last year I was working in the sphere of media analytics and we were doing analysis of czech media and we were making a website with report cards.

How good they are in like using good sources and giving a sources to pictures and if they're like like writing on behalf their owners and things like this and our web looks quite the same as yours and we are also using like this A B C D, it was nice for me.

So were you thinking about like other types, how to visualize, like show the problem then the report cards? Or it was like at the beginning the idea, that this is the way, how to do it?

Tabitha: Oh can you repeat the question?

František: Are the report cards, was it from the beginning the idea that, this is the way how to show the problem, or you were thinking, about some other ways how to show what's the problem?

Tabitha: I can't remember exactly, when we came about the report card idea. But it was pretty early and I think that's because, you know, we understood, that one of the new abilities, you know, that we had, was to understand the service on all of the buses. Like until we, I think from the beginning thought it's gonna be helpful for a driver to be able to look at their own bus. Or for elected officials, to be able to look at the bus servis, let's say in their district. Or that's due kind of travelling through their district and so I think because we knew from earlier on, that we wanted to be able to analyse them individually. The report card was a pretty natural fit.

Just because that may be the most typical way to, you know, to evaluate an individual thing like that. Yeah then I would say that over time our idea of how to make the report card most effective involved.

And so I'm not sure if you saw, but we have these individual report cards for each bus in the system, but we also have a report card that can be created for different political districts.

Make a report card for a city council district or you can make a report card for a state assembly district and, you know, the strategy there was to be able to go, to a particular elected official and say: The report cards in your district have a D. I'm sorry the bus service in your district has a D and that was, you know, an important part of our strategy for actually getting elected officials to support the kinds of changes, that we think are necessary, to improve the bus and so that's just an example of how, you know, over time we adapted and further develop to the report card to serve the needs of this campaign.

František: Okay and eh what happened then, when you like first get publicly with the report cars and everything what's what happened like with the politicians and so on.

Tabitha: So the report cards were very effective at getting press attention and elected officials who, you know, sort of I think already were supportive of the need for better buses. Would then typically use the report cards, you know, in their own statements about why we need a change and for elected officials who were, you know, maybe less interested in this problem it became difficult I would say for them to not have a response or to ignore the issue and so, you know, primarily the report cards at the beginning, were effective for establishing that we had a problem with our bus service and I think that, you know, at least in the context of New york.

Our local media is very eager for that kind of analytical approach or you can, you know, sort of compare one thing to another or you can say well, you know, we have ten buses in the city that we gave A's but more than a hundred that we gave, you know, C's D's something like that they know that I think, is I think that information is because it's very legible it's it's very easy to get news attention on it.

And so that's part of the reason that I think the report cards helped us to established that, you know, that we needed to make some concrete policy changes to improve bus service.

So I could look back for you but, you know, we got tons of media coverage of the report cards and then we would update those for cards annually and, you know, each year we would get really good press coverage and, you know, the point of getting that good press coverage is that it helps you to be taken seriously. You know in politics.

František: Yeah.

And so what's was the problem, why they still like didn't improve the all the buses. When you see where's the problem, what's the problem so why they, why they are still bad?

Tabitha: Well we think that we've had a lot of success in establishing that bus service needs to be improved in New York and here our streets are controlled by the department of public transportation, which is a city agency and the transit agency the MTA and New York City Transit are controlled by the state. And so as a kind of, you know, when you want things like bus lanes or signal priority for buses, you know, you focused your attention on the city. And the city has now committed to speeding up the buses on average by 25 percent and so they have accelerated their pace of implementation of the bus lanes in the last two years and we're quite happy with it. And on the side of the transit authority, they have committed to everything that we've called for in the campaign, so they've committed to a full network redesign, you know, of the entire New York City bus system and they do a borough by borough basis and they've committed to adopting boarding through all doors of the bus and a proof of payment system.

And so I'd say that, you know, at the beginning of 2019 the campaign was in a really strong place. Where we had commitments from the two relevant agencies, you know, to do all of the things that we call in the campaign and those things started to get on our way in 2019, you know, we saw the faster implementation of bus lanes by the city and we saw the transit agency fully plan a network we designed for the bus network in the Bronx. And fully plan of network we designed for Queens.

Of course 2020 disrupted all of these plans and so we're in a moment now of really seeing okay, you know, as new work builds back after the pandemic, you know, kind of what what well improving bus service look like, and on the city side with things like bus lanes I think they are on track they're continuing to move out of good pace the transit authority. Because it took such a serious budget hit and there was so much uncertainty in the last year there. Now I would say in a place where they can resume, that planning but now commuting patterns are different and so we can't just move forward with the plans, that existed before but that's all to say that it's, you know, still extremely important that we reform our transit and I think that it's it's going to it's going to happen.

František: Okay now with some details on the project.

How important are open data for you? Can you imagine that you would like so big press coverage, if you didn't had the report cards?

Tabitha: In in our project the report card data was extremely important it allowed us to pretty quickly establish the problem of poor service and it gave us a good way and continue to give us a good way to track progress so, you know, we can rely on the agency, I think we can rely on the city to let us know what the average bus speeds are but, you know, I think that in being able to do your own data analysis. You have a different kind of leverage. You know because you can, you know, you can look at the problem in different ways. And so, you know, I think that the campaign to reform bus service, it could have been done without open data. But using open data gave us a very clear way to establish the problem and kind of measure improvement over time and so for us it was absolutely essential. Again I'm sure it could have been done in a different way of course. But, you know, from our perspective it was extremely worthwhile and we continue to invest resources to maintain that archive. Because we anticipate that it's going to continue to allow us to keep the pressure on and to make sure that implementation really does happen.

František: Did you notice that um or were there some problems with the open data like I don't know maybe the transit agency wants to change the open data up to private data or something like that or it's another thing in New York City?

Tabitha: Yeah we have haven't had any issue like that I mean I think that, you know, like a lot of open data projects, there were issues with the data. You know there was a problem where a lot of buses were missing from the data and it was challenging to figure out where those buses were missing from service or were they just missing from the data and so they were kind of quality issues that we had to work around. In general I would say that the transit authority was a manable to being cooperative into helping us because, you know, the planners and the analyst working in the agency I think themselves believe in the, you know, the usefulness of people do high quality analysis. And so I think because they had trust in us and that we were serious about, you know, using sound methods and we were seriously about analysing things in a way that was fair. They often helped us and they would let us know for example well have some problems with transponders (vysílače signálu) on some buses. They helped us to actually understand what some of the issues with the data were.

František: Okay and can you tell what were the biggest problems or issues in the life of the project which you have to face?

Tabitha:

Well, you know, kind of in early stages I think developing the strongest ways of analysing performances in the data were complex and so we were likely to find partners, you know, who you could do some of that backend work, that was both complex analytically and complex in terms of storage and organising the data and that's a, you know, an area where I feel really grateful that there are civic technologist, that are really, you know, thinking with the public interest in mind and did this without charging us a lot. In fact one of them was working voluntarily for quite a while and I think did a huge service to New Yorkers by, you know, about being willing to provide his time to do this hard work. And the other thing I would say is that, you know, this is, as you can probably imagine it, a vast amount of data. We had a good infrastructure for storing it for updating it and spending the money to do that. Which, you know, it's it's not a huge sum of money but we in order to store the data and, you know, pay someone to update the analysis periodically we're probably spending 15 000-20 000 dollars a year for free. And so we as an organisation, we have to weight that cost with other things that we could be spending our money on, we're not profit. You know as I said our mission is to improve public transit, so we have to think. Okay, you know, spend the 20 000 dollars that spent on this Bus report cards project or should we be spending it on supporting an organiser working at, you know, another transit advocacy organisation.

František: Okay you just answered one of the questions I was planning to ask, for funding if you had the problem with the funding and you are saying that you as a non profit organisations has some sources but it's not so easy always.

Tabitha: Well in Transit centres in my organisation is, we are a philanthropic foundation meaning that we have endowments and so, you know, we have our funding independently, we don't need to fundraise and so we were able to support this project. But I think a typical non profit, you know, non profit that's not a foundation most likely would have needed to either seek additional outside support for this or would have needed to work with civic technologist, that could do all of the work voluntarily and, you know, over the spend of so many years I don't know that that would be practical. Meaning, you know, we were able to have someone volunteer on it for a number of months, but then we quickly realise this person should be paid for this work and the other thing is that, you know, the data analysis one thing, but you see that we also have a bigger pretty good looking website and so, you know, that website also costs at least 20000 dollars to make I'm trying to remember. But, you know, putting all of the money all that together.

František: Yeah sure and one of the last questions is how were you like running the communications of the project? Was it, like super smooth because it's like interesting topic or how is it working?

Tabitha: Communications you mean externally like with the press?

František: Yep.

Tabitha:

That has gone smoothly I think that, you know, we benefited from having some internal expertise in our organisation regarding communications. As well as, you know, through our partners who had a lot of experience with this kind of advocacy. And so we were working with professional advocates and so, you know, whereas maybe the folks, you know, who were sort of the the early volunteers on the sort of data side. They might not for example have understood, how powerful would be to use letter grades by having a letter grade as opposed to just, you know, knowing that the service was reliable eighty percent of the time.

It's much easier to get press, if you can say this bus got a D versus describing the, you know, the kind of conditions of service and so some of those just, you know, some of that saddy, about what the press will respond to we had and that that it might have been cheaper, but from, you know, from the first release we got a huge engagement from the press. I think that we did, you know, we did find over time, you know, ways to be clear, about our methodology, ways to explain what, you know, what this data showed, because if, if you're not clear, you know, it's easy for the press to misunderstand.

František: And were you using some other ways of communication like not with press, but with I don't know people on social sites or politicians or?

Tabitha: Yes we did a lot of work to sit down with elected officials and brief on the problem. And so the report card, you know, the point of the press is typically to target the agency or the elected officials. Or the elected officials, who control the agency and so, you know, we have a lot of sit down meetings with elected officials to explain the problem to them and to, you know, the report cards all that is in service of us advancing the solutions that we recommend. And so a lot of work happens not only with the elected officials but also with the people inside the transit agency or the department of transportation to talk to them about the analysis to. That's maybe more important detail is that before releasing the report cards we already talked to the, you know, the people the planners who work in the city agency and in the state agency about what we found about what they thought. And we were pretty sure before releasing the information that our analysis will sound and we had a good idea that the solution seems to be promoted either they had support from the people who would implement them or they didn't support them we understood why.

František: Yeah okay that's great.

Tabitha: You know, a pretty good idea I was like well they don't support this because they question, you know, this part of it or they don't support it because they have a huge huge obstacle they will face to implement it and so, you know, we call that our inside game as opposed to our outside game. And our inside game on this was pretty well developed.

František: Okay this is good and how did you come up with with this inside game like how, you know, that this is the best way, how to do it? Because it it sounds great.

Tabitha: I mean from from my perspective personally, you know, I wanna have a problem like this like, you know, bus service why is it so slow and unreliable and what can we do to improve it I think that personally I would always want to understand the perspective of the people who are responsible for it because I figure. They, you know, they know better than me maybe and so, you know, my own approach in terms of, you know, re-start on something like this. But it always be to want to know from them as a kind of expert not the only expert so I talk to people in agency, I also talk to transportation plenary to retired from the agency I also have talk to transportation planners in the private sector but that was a part of developing I think a confidence in our analysis and in our proposed solutions and then I would say that, you know, kinda beyond me personally I think that policy advocates often take that approach of wanting to, you know, to both communicate with and understand the perspectives of the people who would need to make the change. Because even if you didn't feel that you needed to talk to them to feel confident, which I did. Even if you didn't feel that I think, you know, you would anticipate that you you want to be able to reach out to. And to communicate with the people who have to do the

work because they're not happy if they're feeling frustrated, if they don't think you have it right, you know, you could get the policy changed but then the implementation probably won't happen in the way you wanna see.

František: Yeah.

Okay that's great I think like you answered me to all of my questions and much more and so if you have anything else you wanna tell me and I didn't ask for it now is the right time but if not I thank you, I really thank you.

Tabitha: I think the one thing that I should mention is I sort of looked to it, in the beginning is that. That, you know, this data analysis began before we, you know, don't got the idea that we can do something with it and so maybe it's important to know that. Data.nyc, you know, kind of open data technology organisation in New York. I would really pay the NYC as the organisation that first sparked this work happening. You know data.NYC they had a, you know, some kind of convincing where there was a local elected official, who was himself interested in civic technology and it was there data.NYC that they first said like who who can do something with this bus data and they kind of start that analysis going and so, you know, I really credit down, you know, and I think it's probably relevant to your research that there are sure there are like this civic technology hobbs that, you know, they were really the reason I think that this got started and then we benefited from it.

František: Okay great great thanks it's like amazing work you did and is it great and from me this all I thank you very much for the interview and time for me and I think it will help a lot to my research.

Tabitha: Great excellent I wish you the best of luck in finishing your project it was good to talk to you.

František: It was to talk to you too. So thanks a lot and have a nice day.

Tabitha: You too. Bye bye

František: Bye

Rozhovor 2

Sozialhelden - projekty BrokenLifts a Elevate

Holger – člen představenstva Sozialhelden (*sociální hrdinové*), produktový a technický manažer Wheelmap.org (největší z projektů Sozialhelden), Berlín, Německo

Holger: Hi.

F: Hi, how are you?

Holger: Fine, busy.

Holger: I think i've been in four hours on video conferences, so let's see how it goes today.

F: So sorry that you have to spend time with me, but thanks a lot for that.

Holger: Well I chose to some time with you, so it's all good, you don't have to apologise. Otherwise I wouldn't be in this meeting.

F: OK.

Holger: How do I pronounce your name? Frant-Frantischeck?

F: It's František.

Holger: František.

F: František, yeah, that's right.

Holger: František, I'll try.

F: So I will tell you something about my research. I'm writing a research - my diploma thesis - on successful open data initiatives abroad and about the transfer of foreign practice in the development of sustainable mobility in Prague. So i'm looking at the projects that do anything with mobility abroad, which are good and work. And I'm looking what we can take from it and do it in Prague or something like that. At the beginning I would like to ask you for informed consent, that you agree with the recording, transcribing and using your answers for my research. I would attach the transcript of the interview to my research as an attachment. And I want to let you know that you have the right to refuse or withdraw from the interview and then ask me to erase all of my recorded data. So is that okay for you?

Holger: Yeah, OK. Very professional okay. Yeah, OK.

F: So could you please say that you are giving me the informed consent for the research?

Holger: Yeah, I give you consent to use this for your research.

F: Thanks a lot. We're gonna talk about the projects Elevate and Brokenlifts and I can... I would like to write about it and write about the projects, use the names of the projects in my research, but I will anonymize your name if you want.

Holger: You don't have to.

F: OK.

Holger: Whatever makes your thesis better.

F: Yeah, okay.

Holger: I don't think it matters.

F: OK, so at the beginning I would like to ask you if you could describe me the story how you came up with the idea of the Elevate project or Brokenlifts - I don't know what was the first one.

Holger: Brokenlifts, yeah. So yeah I'm not sure how much context you have - who we are, what we do? OK, two sentences.

Holger: We are a non profit organisation based in Berlin, Germany. We exist since around fifteen years now. We are twenty-five people on staff and we see ourselves as activists in the field of diversity and inclusion. Our uniqueness is that we are that large part of our organisations are self representatives, so we have people with disabilities in our workforce. I don't have a lived experience with the disabilities, but lots of my colleagues have. And we are also nerds and interested in technology and always think that there's an angle how technology can improve the situation or make their situation more visible. And we started Wheelmap.org - a map to find and report which accessible places with open data so people can say: "Are there steps at the entrance of restaurants?", for example. It's the largest publicly available dataset in the world for this right now. It's now ten, eleven years old and shortly after we started this. I'm the co-founder of this and my other co-founder is Raúl Krauthausen and he's using electric wheelchair. He's like the public figure, basically.

Holger: Right in the beginning, when we sat at this coffee shop with the steps in the entrance, I told you like: "If we do this now, you will be the guy speaking to the journalists, because everybody will say, like "why do you do this". So like, OK, here we are fifteen years, like twelve years later.

Holger: I'm also talking about this more from the product perspective, or technical perspective. And so this was, like, basically the first itch we had, or the first problem we saw were, you know, crowdsourced open data solution could help to raise the problem to raise awareness for this problem. And also be part of a solution. And Brokenlifts came shortly thereafter, I think 2011 or 2012. Because Raul, my cofounder, he had the problem that he took the last metro home. In Berlin, we have a metro system. He took the last metro, it was like one o'clock in the night or something, and he left the car, like the metro. The metro left the train station, the metro station, underground station and there was nobody there and then he went to the elevator and it turned out the elevator was not working. So there was nobody there, no more trains coming, it was the middle of the night and the elevator was not working and he was using an electric wheelchair. Which is not really good situation to be in, so we said, like, wait a minute! We should have known beforehand that this elevator is not working. Because elevators, like, the world it happens to be, that elevators sometimes don't work because of vandalism or failure or maintenance, this will always be the case. But if he knew, he would have just taken a separate exit and like, exit on a different station, like, you know. If I knew this five minutes ago I would just, like, left one extra station later and drove back and would be fine, now I'm here stuck in the middle of the night. So turns out... so, security staff came around asking what what happened and he said, like, he's stuck there. Usually you have to call firefighters to evacuate you but this wasn't necessary in this case, because they gave him, like, a firm kick with the foot. Basically, it worked one last more time. But since then we had the idea, like "hmmm, this is not a such a good use case for Wheelmap". Because people don't report working elevators, because most of the time elevators are working. But this is a machine. The machine can maybe tell itself, if it's working or if it's not working. And we started it from there, so we... but it's a pain to find this. So in Berlin, there are two public transport organisations, one for the light rail and the bus, and one for the metro and the buses. And they're

operated completely different, large organisations. And back in 2011, 2012, they already had a website with a table where you could look up on broken elevators. But it was two different website and it was just too cumbersome for him to think about this, to look this up on his way home, to think... You know, it was more like, theoretically we have the idea that this information is there somebody calls if the elevator is broken, somebody fixes them so there must be a process in this larger organisation to get this fixed already. The data is somewhere, it's just not on my phone, you know. It's just not on my notification, in my mail, in my whatever. So I don't have it, but it's somewhere. So this is actually the starting point. So that we... And then we started from there and we scraped the data for three months from both operators and we brought the data to a hackathon on a weekend, basically. And said, like, let's simulate, like, if we have this data in a JSON file or in machine readable format, couldn't we make, like, nice statistics and awareness, like, to say, like, these are the stations which are out of service right now. Which operator sucks more and things like this. So we had lots of fun this two nights and this was the start of the whole project, because they were really, like, pissed off that we did this. But they were really smart and said, like, hey, let's talk. And it turned out that we did a project together and said, like, you should sit together and do this project that has one data feed and doing this and actually it should be part of your routine eventually in all this. And they were like, yeah, sure it takes a while. Eventually, today, it's there. They have this app. But we learned a lot, so we were completely outside with no awareness about data standards and norms and elevators, but we did a lot since then. So this where it came from. Stop me when I talk to much.

F: No, that's great. You answered me many of my questions already. Okay and how many years it took them to publish the data, like, in better way and in better formats.

Holger: Good point. I have to look it up, to be hones. So I think it was maybe a two year project or something. So...

F: It's not so necessary, like, I don't need the exact...

Holger: I can look. Actually, we have a documentation but it's in German, unfortunately. But I think we might have an English version and also there's DeepL or Google Translate, or so, which has...

F: Yeah, I'm using Google Translate. I learned German for ten years, but i can't speak.

Holger: That is awesome by the way. So if... this is the landing page, not sure if there is an English version.

F: Yeah, I can translate it.

Holger: So, but... If you scroll down, there's, like, nice photos, and examples and photo of the hackathon and... So maybe there's also years, like, this was in 2013, that we started the project with them. And then there's 400 elevators. It's another side story what we did with the German railway system. In 2016 we won a prize for this project. And in 2017 we started a project funded by the German government to expand on this. And to do it for all elevators basically.

F: That's great. And how did you came from Brokenlifts to project Elevate. Like, Brokenlifts was just for Berlin.

Holger: Yeah, it was mostly... Now we felt, like, okay, data standards are interesting, so it's... to know it should be super simple, it's a mobile-friendly website. Eventually could also be a data feed for third parties, like, you know, your calendar, or whatever. And we wanted to expand on this. And build something more out of this. And we actually have two projects right now. One was called project Elevate and the new one is called project Elevate Delta, because there's a delta of things we didn't get to. I'll just tell one story now to make it easier. Because we learned that, like, 70% of the elevators in Germany or in the Western world, let's say, or, like, or maybe an operation are already connected to the Internet, for the maintenance reasons or whatever. So the large manufacturers, I'm not sure how aware you are of the market. So it's like four operators, four manufacturers, dominate 50% of the market then 60% or something. And the rest is like a lot of small mum and pop shops,

basically, making elevators. So we talked to some of the big ones and basically they said, like: "Oh yeah, we have this it's, like, Internet of Things and Smart analytics and we make our own cloud solution" or whatever. We were like: "We just want to know whether elevator works or not. And I don't want to have to login. I want your customer, you know, the building owner and the landlord, or the train station operator, or whatever. I want them to be able to pass this data feed along to their customers, to the people visiting the building, to the people working there and they were, like, "Wow, you know, so this is sort of complicated". Maybe, yeah, but it doesn't have to be, it's a very simple question. So we got a lot of interest and a lot of nice conversations.

Holger: And another thing which brought us, these conversations, was that we built our own hardware sensor. I'm not sure if you saw this. So that... We said, like, for the 20%, 30% of the elevators, who are very old, are very hard to get data out of, we could maybe retrofit this. And this was another crazy idea, basically from Raul. He said, like, in terms of self representation, of what I want, I don't want to ask for permission for anything. If I have this little bug I can just glue to the elevator, I on my commute to work. Because this is the one I always change, you know, on this train station I always change. And I don't want to ask for permission. I just glue it there and it will tell me when it's broken and so no permission, no things, completely from the outside. So we did some fun experiments in our... in the building where we're at. The first one was, like, this size. Like the size of an old brick phone, basically. And whenever it moved, it was, like, an LCD displayed a little smiley, popping up. And it had, like, two huge antennas, like on the left and on the right. And we literally had, like, gaffa tape and put it to the wall. And our business card as well next to it, because it was a building with many tenants. So five minutes later, the facility manager showed up and said, like: "Did you put this bomb in this elevator?" You know, because it looked like from a bad movie. And so we said them: "Yeah, it's not going to blow off, but this is what we're doing." We were just like "Yeah it's fun, but it's scaring people, you know, so don't do it that way, let's do it a different way." Because we wanted, you know, we had another hackathon to build this hardware. So, I just said "There's an elevator down the aisle, let's just use this one." But this opened up a lot of conversations with manufacturers and we visited them also in their hardware facilities and training facilities to understand more, like: "What is behind the panel?" And so we came up with a solution to say "We don't want to look behind the panel, because this is a liability hell and nobody is going to do it." Somebody needs to be, you know... It's complicated, we don't want complicated, you know, we just want this glue it to it and it's fine. So it turns up that energy management was a problem. So there's not much energy in a public elevator and also vandalism prevention. And so we said, like, maybe you can use the light panels with solar to get energy. But it's not much energy so it's like - don't do it. But on all the elevators in the world there's a maintenance mode. And on top of the basket of the room there's a power plug for light and vacuum cleaner and whatever the engineer, like, the craftsman who's fixing this needs. There's some power plug and we said, like, let's put something in this power plug, which connects to microUSB and then we have our small sensor and we be put it there with no duct tape, with little plastics. And lives on top of it because it's dry. It can be cool or hot, that's not a problem. But it will be dry because it's inside of the elevator shaft. And it has... So this is all we need, we just need power. So the whole device has its own wireless connectivity to our backend. No private data is collected, because we never know who is in there, we don't correlate this with any personal use. It's fire safe because we don't do high voltages. We buy the power adapter, we don't make the power adapter. We only have micro dosage. And we now manufacture this, so we are just in this moment, we ought to manufacture five hundred pieces and sell them.

Holger: So... but I think the bigger impact is not that we have a hardware product we sell, which we never were going into. But that the big manufacturers say, like: "Oh, you want this? Well we have this, it's right here". And then we go, like: "Yeah, give me the API endpoint and I'm not going to put this hardware on top of your high end elevator", you know? And thus it's a great communication tool on what's needed and how simple it should be. So eventually... I mean, we hopefully sell those. To especially the old ones, but the much higher thing is, like: "OK, if we can get big operators on board to say, like: 'Don't put it in there, we have it. We will extend our API to have this, because, you know, this is something we should do'". And we're, like: "Yeah, you should do this. We did it now but you should do it." And this is how we perceive change basically. How we see ourselves as activists. To nudge them into the right direction.

F: That's great. That's a great story. Now I would like to ask you how did you communicate the project. Like, if you talked with the news or public... How, the people that... the websites and the apps work.

Holger: To be honest, we stumbled into this, partly. So for example, this first hackathon was like Hack for good or something, actually there was a journalist there from a radio station. So we actually have a radio recording from the first interview we ever gave on the night we had the idea. So, it was like, we told about this. There's a video about the final pitch and all these things. And there were interesting people in the room who, like, broadcasted this also to the hacker community, more like: "OK, this a nice use case". So this gave us more like an angle on... You are those... we are people with the elevators, but it's nice that you have hardware that have a GitHub account and, you know, that you're interested in these kind of things.

Holger: And also officially, of course, like, when you tweet about this, the social media team of the operators come back to you. We are also like: "We live in Berlin, we know the operators in Berlin, we live here since long, we are activists on diversity and disability and inclusion and accessibility". So we have communications with them because sometimes things break and sometimes things suck, for example. So for example there's a lot of elevators missing at metro stations. And they know they are under pressure, they know they need to do something. And we've made some noise, basically. It's a good press story. But we are also maybe part of the solution. Or we make it easy for them to be part of the solution. We're like: "Extend the API, harmonise the different feeds and we have a great story to tell." So basically, on Broken... so they now link to Brokenlifts. This is how the twist went, basically. So that's we're the official website for them using the state of feed and we are connecting and we're on round tables with them. So they're not part of the consortium of funding or something. But they're a partner, basically, because we want them to get better and if they are interested, we tell them. And also we won some prizes. And we applied for public funding because we just thought, like, maybe there's more to this, but it's effort. We need to be able to pay people to work more in this. And this is where we've got the federal government involved. It was basically the federal government of the transportation. And we argued that elevators are vertical transportation and it's not just trains and cars. I mean it's also train stations, of course, but it's also transportation and digitalisation hype or something which was, like: "Oh yeah, this is something concrete, so it's not just the cloud. It's people needing elevators, you know. It's an easy ask."

Holger: And we do it this day, this story telling.

F: That was my next question, about the funding. Because you told me that part of the work was made on the hackathons, but most of the work did some people in you organisation. So the find the money from the government or who is paying the...

Holger: So, for example, we also got donations. So for example federal express, so the parcel, the logistics company gave us some funding. And there's a video on the website, I think, which explains in English vision... Is the video on the website? I think so, yeah.

F: Yeah, yeah, yeah, I see it.

Holger: So if you go to project Elevators there's like a two minutes video. This is actually... if you scroll down you should be able to see.

F: Yeah, I've seen it already.

Holger: So this is... basically, this video was not produced by us, but it was produced by the CSR department of Federal express to tell the store that they are supporting us and they were. So... but this was also part of the opportunity, basically, to do this.

F: And was the... what about some political impact? Does your project, is it forcing politicians to make new elevators at the train stations or something like that?

Holger: Ummm... To make a mandatory... There is a regulation, as I said, to have accessible train stations. We are one of the voices to demand that this is actually enforced in all this. We... This elevator project is, like, so small that we think it's more about... So the impact is not too much in making this mandatory because this is not... Like, elevators should be mandatory and then the information about the elevator. So we are not there, but what we try to do is to engage decision makers in technical designs. To say: "This is an aspect you might not be thinking about, you might, you know, need to include in your software designs, in your routing, in all this." So we had, for example, design sprints with Google for Google Maps. So to say, like, this is a use case. But even more we think, like, a reason, like, large organisations, like, you know, train companies, train networks or Google Maps or others, they operate differently from us. So, like, we are, like, really, really small and have no resources whatsoever. But what we can do is that we can tell them what people with disabilities, what we need and what we want and luckily, like... But we are also fairly technical, by, you know... And proven, basically, like, we have open source software running since more than ten years, we make hardware. And we find ourselves at table of people who are extremely technical, extremely high profile and all these things and for the first time they encounter, like: "Oh, yeah, there are people with disabilities, what do they need?" And then we can say not just, like, equality, or something, but this API change. And this gives some kind of relief, to say, like: "Now I understand better, like, how I can help or I need to do something. But I also know what to do". So we try to make this more to be on the table with people making standards, data standards. For example, GTFS as the data standard for routing and public transportation. And the GTFS pathways standard is coming. And it includes these kind of aspects. Like, when you route, consider that there might be an elevator within the route through the train station from platform to platform. And also the elevator might be out of service. So, and then we said, like: "Oh yeah, we should put this in the specification, because when it comes ???, this is a very, very important specification". Because Google and the others will just say to all the public transport networks in the world: "If you want to be on Google Maps, use this." And they don't even have to understand if they just follow. And also the manufacturers say: "Oh yeah, does GTFS realtime data about the elevator fall out of this elevator? Yes? OK, how do I give this to Google in such way, or to my own app I'm building for routing?" And this is the standard. All you need to do is follow the standard. And then they don't even need to be aware what it's for they just need to do it. And that's the ultimate impact we want to have as an organisation. And just say: "If this is an open standard and this is the way you do it, we have a check. We are done, basically." By the way, we do it not only for project Elevate, we do it also for Wheelmap for the accessibility of places. That we try to put we try to put the definition on accessibility features of physical places, like a hotel room or the bathroom of a hotel room. And to make a description which is machine readable and can be used by search engines by price comparison websites and whatever. So that eventually, you can say: "I want to book a hotel room, but I need a roll-in shower" and you just tick that box and then, you know, the crawlers can go out to all hotel websites in the world and just comes back and it's always like the same meaning of roll-in shower. And not just accessible bathroom, what does that mean? So this is where we see ourselves.

F: Interesting.

Holger: I can also give you... Yeah, I'll give you a website: A11yJSON.org is some entry point, like, how we try to standardise accessibility information about places and eventually we want this to live on schema.org.

F: Yeah. Interesting.

Holger: It is our current idea, to say. This would be just a part of an ontology somebody else is already using. Like, all the big search engines in the world. This might be really cool and we think, like, you know, we're working with Booking.com and with others to do these things together. But this is not Elevator. But this is the way of thought to say, like: "Okay, we're being nerds and we are the smartest, like, on the nerd space we are average. But we're the smartest people around disability. And the disabilities based we're the only ones who know technology. So let's bring this to this place and then we're special at the table and can maybe help". That's our approach.

F: Yeah. That's great. This is very interesting. One of my last questions, or last question is: "I see the major part of all your projects is the open data. Could you imagine that you do something like that without open data?"

Holger: Yes, we do. I mean we don't... So, in 2015 we started this project called Accessibility Cloud. I'm not sure if you have seen it.

F: Not sure.

Holger: And this is actually our backend today. So we started this and we said, like: "There's lots of data like Wheelmap.org about places, but from different sources. For example, cities without their disability parking spaces or Foursquare commercial companies, who say, like: 'Our user said this and this.' Or official parties, or other non-profit organisations, like ours, but in different countries." They all collect data about the accessibility, but everybody did it in different way, so we are standardising this. This is where the A11yJSON comes from. But... and eventually we thought like: "OK, if we have one API where somebody can say: 'I want accessibility information of my surroundings for my mobile service', you go here, you get this." But some data is not open data and for some reasons, for example, the business model of Foursquare is not to have open data or Google, for that matter. And or from HERE Maps, which is one of our partners, for example. But we want this information anyways. Because we want convenience for the end user, from the end user perspective. So on Accessibility Cloud, if we design this now like a marketplace, to say that you can contribute your data with, like, your API endpoint, or you can even upload a CSV file if you want, or GeoJSON or whatever. And you harmonise this, so that a toilet means a toilet. And other bathroom and the restroom. So whatever, that you harmonise it to a standard. Which is, like, which you then can query with your API, with this one API. And then you connect it. But you still own this dataset and we are not sharing this unless you say that it's open data. But you can share it with just select other partners.

Holger: And since we started Wheelmap and we have this, so we have some examples. For example, there's a Facebook chatbot to find the next accessible toilet, which we haven't built, but it's run on this. There are other examples of people using this as a backend. But we reached out to more than a hundred different data sources, to say, like: "Hey, can we use it?" If it's open data, we can. We don't need to send emails. We just implement this. But if it's closed data, like HERE Maps, which is, like, one of the largest geodata providers in the world, we have our conversation, we have our contract and whatever. And we have a right to just use it for Wheelmap. But they're still out there. So if we say, like: "You know, there's a cool organisation called J'accède in France, we want to partner with them as well." They sign the contract and then they just say, like: "Enable data flow to J'accède." And then magically all the data comes up. Each data point has its own license, it's own attribution. And when the contract ends, they can just turn the switch off the light, basically. And then it's gone, all the proprietary data.

F: And are you trying to push these organisations which don't publish the data as open to be open, or are, like...

Holger: No.

F: OK. It's enough that you...

Holger: It's a lost cause, basically. Because they don't own the data. So they mixed it together with several other things. It's... I mean, we just do our thing, basically. But I think standardisation is more... can be more impactful. Because they cannot implement the standard without sharing any data. And I'm not... I mean, personally, I like open data. That's not the point, we still do all of this. But I cannot advocate for Google Maps or Apple maps or Wolkswagen to say, like: "Open up today". That's not going to happen. That's not... That's a different fight. We are allies, basically. But we are also pragmatic and say: "Today I want this information". I opened the phone and when I'm in Paris on WheelMap, J'accède data from Paris shows up as well without them being even aware that J'accède is really big in Paris. And Iwheelshare as well which is also in Paris, and Foursquare, and... I just want convenience. And I want service. And I want to use this data to also make political demands, for example. We

did a report for the United Nations to report how many places are inaccessible. We're doing this again this year, by the way.

Holger: So to say, like... First, we need data. We need data to manage our lives better. But also to demand change and to make the need for change more visible. And this is why we need a lot. And the awareness, like, each conversation I have with a company gives them, like: "Oh yeah, but we should have this, maybe. You know, there's somebody who wants this. And it's a live app, look at here. And they have been around since a while, maybe we should copy this." You know? This is the way. I think this has the most impact.

F: OK. You told me already, like, tons of information. And that's great. And I thank you very much.

Holger: Yeah. So, do we have VojčekMap?

F: Sorry?

Holger: I'm not sure if I'm... I don't... in the Czech Republic we have one partner called VojčekMap? I cannot pronounce it.

F: VojčekMap? Not sure...

Holger: Wait, I'll log in into our system and look it up there. I copied in the... oops. It's called... I think it's completely... This?

F: VozejkMap! VozejkMap, yeah.

Holger: See? I'm terrible. So they, for example, are the very early partners. Doing these things... It's been I think two years since I talked to them, basically. But it's up and running. There's seven thousand places contributing to Wheelmap, so on the Wheelmap, you can see them.

F: Yeah, I know it.

Holger: And they are using this, for example, in the Czech Republic.

F: Yeah, it's running on Mapotic. Yeah, I... Lots of my friends are working in organisation Assistance. It's like assistance. And there are here in Prague like on of the biggest impact organisation in accessibility. And they do the personal assistance to people with disabilities. But, like...

Holger: Now I'm losing you.

F: Sorry?

Holger: Now you're back.

F: Yeah, OK.

Holger: There was just a lack...

F: Yeah.

Holger: Yeah. I mean, if you talk to them, we have... For people who speak English, as well, or German, but... We have an ambassador program to think back how can we scale mapping events and things what we are doing. And we are always looking for people who want to engage in the activism part in different parts of the world.

And we try to standardise this bit more to have more impact. To have, like, allies everywhere, basically. Just say, like "This is what we're doing now". And use Wheelmap to map places and take photos of places and all this.

F: This is great, it's great.

Holger: Great.

F: I will ask my friends if they knew... for sure they know. OK, so thanks a lot for all the information and I'm looking forward to go deep into the data you sent me. So it's super interesting and super helpful. So thanks a lot.

Holger: Yeah, thank you. Good luck with your work.

F: Good luck with everything you do this, that's great what you do. And have a nice day.

Holger: Thanks, bye bye.

F: Thanks, bye.

Rozhovor 3

Chipi - MaaS¹ platforma a aplikace

Manuel – spoluzakladatel projektu (jméno respondenta bylo z důvodu anonymity změněno), Madrid, Španělsko

Manuel: Hello

František: Hello how are you today

Manuel: Sorry Frantisek, I don't have any camera.

František: yeah it's okay it's okay for me uh I just want to ask at the beginning. In the beginning I want to tell you something about my master thesis. i'm writing my master thesis on successful open data initiatives abroad. And transfer of foreign practise in the development of sustainable mobility in Prague. In this interview I would like to ask about some things about ChipiAppi. And the beginning I would like to ask you for informant consent that you agree with recording transcribing and using your answers for my research. I would attach I would assist you to transcript of the interview to my research as an attachment and I want to let you know, that you have the right to refuse or withdraw from the interview anytime and then ask me to erase all of my record data. Like if anything is not comfortable for you, we can stop the interview. So is it okay for you?

Manuel: yeah it's fine no worries.

František: it's fine okay great uh and uh I would like to write in my research that I was talking with someone from Chipi project but I would anonymize your name and the answers.

Okay?

Manuel: Okay.

František: That's great so at the beginning I would like to ask you uh if you could describe me this story how are you, or your colleagues came up with the idea of Chipiappi?

yeah

Manuel: Okay, Chipi actually came from personal problem we had, we were working in Madrid, we built a company that's kind of technical consulting so we were building like I don't know some for app for web or for third party companies. Okay because we were like waiting for creating a profit company. You know we were working for them. And yeah meanwhile we were like thinking about different things and we were going to customers, to customer place just to to have some meetings and bla bla bla. So we were checking the money and the time, we were taking from our trips right. So we were going from our office to on meeting, to this company meeting. So we were checking in Uber, which is famous, also Cabify which is like a kind of Uber, which is a most popular like here in service and also the taxi services uh like the the common taxi. So we build a sequel algorithm, that calculate this price based on the fairs that we have here, over here in Madrid. We were doing this by hand, okay so when it's arriving the the car to pick up and then we're how we're gonna pay. Based on this we decide, thats all. We started like this and we have been like this for yeah some months and then we we decided to build landing page. And just for saving money, sending people to this landing page, we actually decided in there for Chippi name.

¹ MaaS - *Mobility as a Service*, v překladu *mobilita jako služba*, je termín označující typ služby, která za použití digitálních technologií umožňuje uživateli si vyhledávat, plánovat, rezervovat, objednávat a platit za dopravu z místa na místo za použití kombinace různých typů dopravy od různých poskytovatelů. (Smith, 2020)

Okay and then we build horrible landing page, it was like kind of personal test, I know these now is like super common. That time it was not that common. You know, we learned about this from some american startup Supernurse. And we did it okay. Like use this app, which is called Chipi app, and you can download it here on the place, or here on appstore. And then you gonna save this much money okay.

And then we press then it was like a model, we are going to advert, like a give us your email, if you wanna use it, and we will contact you, blablabla. On this we spend some fifty bucks I think something like this and we get some leads and and this notice that it was a real problem. Or or yeah it makes sense you know, the idea make sense, so then we decide like to build our algorithms, to build it, and to build a platform.

František: Okay interesting interesting and uh what year, it was when you started with this?

Manuel: The idea came up in 2015. In the end of 2015, we started coding, the same december 2015. And then we have the like fist web version, on the February 2016, yeah. First version, with Car to go, I think. Car to go, was like first service with carsharing in Madrid. Because it was also new here for us, this carsharing and all this stuff. When we started all this, we were not thinking about carsharing, because we know nothing. So we didn't know, about this sharing, you know, movement. It was born. And finally, we have it too.

F. And at the beginning you started to do it just for one city or you from the beginning started like do it from whole a Spain or whole Europe?

Manuel: No we of course we were wondering about how to scale it, but no we just focused in Madrid. We had like some services, and we prefer, like to started small, in small place and so we can be close to the user also, and improve it with the user.

František: What was the biggest problem problems or issues uh you had to deal with?

Manuel: Actually I think it's the topic of this interview, actually I thing is API's. You know this is the hardest thing. Especially at the beginning of part when you are starting.

Not like in the early beginning, because we were like three students. We are kind of thinking about this stuff, can you help us, and give us acces to these blablabla.

And yeah and most I would say most of them, you were in this case it had it had usually it used to have in this times public API. It wasn't the problem. But Calify for example reacts like yeah we're three students we want blablabla. And this. And now, that is fine for us, but then, when they so, that we were going you know hard, and pushing hard and trying to make some money from this, then cut us, they cut of the Taxis. You know. And also for Car to go for discussion services. Yeah they refuse us, to giva us the access and yeah and and all the same thing. Because in the beginning most of these services they have like public API, we start develop first and you know and so you can access and you can just sign me in and and get it the token and just make request to to get the information. They build this thing in, like bettering they service, I don't know, like hold them on page or I whatever page so they can benefit from these audience. But then we solved this just to make an aggregator. You know, they do not like this, especially the weak players. They dont like it. So I think that this was the most difficult part.

František: And now is better like the situation that eh they are giving you the excess or you have to like find some other way how to get the access or you are paying for it in some for some companies?

No we we don't pay for it and yeah now we look serious. Because you know we have been in this world in Madrid especially, we are bit known okay. So we look serious. Specially for new services, they are approaching us. I know the opposite, because we have been there for six years. So in that sense this year of course, but not for the big ones, I mean not for Uber or for Share now, which is now car2go and this things. These big

companies is hard to get them, so you need to use like I don't know other techniques, like scraping, or different things you know, to get this data or to show the data for the users.

František: And was there some other stakeholder like, there were you as the guys which started the program and then the transit companies and was there some other important stakeholder some politicians or I don't know someone who like help help you or was like pain in the ass or something in the development?

Manuel: Yeah I know I totally we didn't receive like much help from, not from the government or city council or something. It was actually new you know and I at least here in Spain uh the the public administration, they are going always you know. There are not going you know. You know that fast as you know the company, so the private is normally faster than the public administration. You know so they are like trying to help or regulate or creating ecosystem. You know in the platform we are like we I mean all they got in ecosystem, three or four steps in advance.

And from companies we received a lot of different calls from big companies. That they have like different I know assets in mobility. I don't know because they have some I don't know they some they manage like the city bikes or public transport or yeah they train here in Spain or these kind of companies, big ones. And they are what we call playing the innovation game. So hey this guy is building this, make sense for us I don't know and you know they're like like to meet with you. And yeah just to start speaking and then to make questions but then at the end. They are going their own way that is the reality. And in some case, they actually copy our application and they try to do it themselves so. Yeah not much help, at the beginning, at least from the companies or from public administration.

František: And the transit companies for metro and bus are public in Madrid?

Manuel: Jep.

František: yeah and so to get the API from them was easy or at the year 2015 was it there already like public API?

Manuel: For the bus for example, it was because the bus runs on the city council, on the city of Madrid. I think they have a very stable API, just to get the times when the buses were arriving the stations and yeah they have actually a pretty good portal for this and we took it from them. And for the metro, they have private API key, APIs, they give the times, but they were not open. And it was actually one of our advantages, because we scraped like this information and we show it in our app, and most of our competitors, they don't know, or they cannot do this, so they were not any public api to get this information. So for we were like kind of in advance in that sense. And in the end they open also the API and public everything, and yes, and it is actually working fine. So we integrated I think metro like three four years ago and we didn't make any change, in the integration. It is working fine.

František: And like you already answered me partly this question but what role played opendata in the Chipi?

Manuel: Open data you mean like public in the sense of government or public administration and this things or in general?

František: Yes but in generally also like public APIs from the companies.

Manuel: Yeah I think in reality, we would like you know to have this open data or the access to the open data but in the end except of for the metro or buses or I mean what depends on the on the public administrations nowadays, except that, I think wouldn't have any companies that has opened data like, you can integrate here and show my vehicles you know. In app in or whatever you know? They used to have aside that because they were thinking about this integration in just in a way, what they can benefit because everything in this services in your sites and so you are going to request my vehicles, but at the end this change a lot. Like three four years ago

when we started building aggregators, they cut off all these public APIs and all those things, all the public data so.

We don't use much public data I think. Perhaps I guess you know, we use some city bikes, I think it's called its a python API, which has like most of the bicycle services in all of the world I think. We use some of it, I think that's of course public data, except that, I think we don't use a lot of public data. And some city services, like buses and all these things from the cities, but all the others are private ones, and we need like our reader to talk with them or scrape this information.

František: Were you like working with some marketthink and communication how to spread the information about Chipi or you just like put it on the internet and wait? Or just checking marketing stats?

Manuel: We are more like putting things on the internet and wait you know and wait and see and see analytics and see metrics, and then from there where to go, you know. We spent like few money on the beginning, just to make a small boost, to see the behaviour for users, but we are not marketing types, at least for the moment. Especially we were aggregator, and we are relator and we work with users, and we have not like a kind of a service. So we cannot spend a kind of a lot of money to just buy users. You know, because we were not getting money from use and the billing so. We take care of the economics of the company.

František: So we moved to other question was about funding, how you were like paying the project from the beginning and is it now making some revenue or how is it working with this?

Manuel: From the beginning as I said we had like this company and we were building a software for other companies and so we were getting money in there you know and when then when we came up with the Chipiapi then we invest the time of course our time building and and then we hire also one guy to help out with the with building the first Chipi version okay so and the money came with the money we earn. You know with the with these third party for a development you know. So from beginning we invest out our money so the money we earn from one side than we invested in Chipi because it was just spending money of course, we were building. And then we build this website, then we invent in the website some application, what we use, it was like hybrid application, and we didn't have any earnings of course. In that time. And then we started building like a native apps. We were not earning money in that moment too. We launched like the first Chipi app with some investors here in Madrid in Spain, some like key business, I would say, yeah, it was like business ideals, they were like group in some kind of small business. And we get like this first round. And we started to be little initiative and on proper technology platform. You know, for the aggregator, and we did it. And we started getting some revenue by sending users to different applications, because it was like a big booze to this mobility, lots of new users, so they were paying us for sending a new users. Okay, not for every trip, of course, because it can't afford to drink?? And we started at the beginning just with something more simple and more attractive for them which is if I give you a register then you pay me X money okay, for the new register. Okay, so we had kind of audience, here in Madrid, so we can have your advert.

And we started like this but then we saw like different technology problems because so most of this companies are owned by big companies, that are playing the innovation game and they are hiring like the or buying, not buying, but hiring a technology for third party technology providers. They don't control their own technology you know. We saw like some different points of you know making better technology for them. So we gave like a step back again instead of aggregate the the services we give us a step back and we start building technology for them. So we thought like if we build the software and we build the hardware, then it is gonna be much easier, to get money, doing money from the revenue from the beginning. And also do aggregate them, because we are controlling the technology. So the guy who control you know in their views has like a lot of advantage you know in the aggregator side or in the mass or something you know because you have the rights to integrated them. So we build hardware, software and we start establishing services, with carwheelers, car rentals, different car brands here in Madrid and in Switzerland, HoppyGo, yeah. We started like this. And since two years or three

years ago, we are profitable. So that was one of our main goals, you know, to be alive from our source. Not from branding program. (what?)

František: So now it is working, that you are not an aggregator, who are sending customers to like their landing pages or landing app, but you are running the app, which like taxi drivers, or rental car companies, they are using like your apps. They are using Chipi to communicate with the customers?

Manuel: To communicate with the customers, yes. And we are now giving like, we are integrating our services, the services we have now in different countries, I mean our services is our technology, you know, integrated okay? We are now, we have liked launch some service in different city in Western Europe, and we are aggregating this service now in Chipi. So we started from there. Because, as I told you we are using our technology and not third parties. At least now, they give access to full integration with bookings and with everything, that is not easy.

František: Great, maybe last question, did you cooperate at any point with someone from like the government or some political party politicians or something like that or it's not like a topic for Chipi?

Manuel: We have some meetings with them, we explained our project, some years ago, and our goal, we explained everything, but they understood, but they wanted to go on their own. To build their own app, and have like the best community app, and all this things. All this thing from the public administration, you know. But they are mostly like works because at the end, at least, as it is here, it's not a reality. You know, and we are still waiting for the super app like four other years. You know. So we tried, we spoke with them, we have actually some change in the government, in the party politics, that are in the city council. These are of course other, because they are like refusing all the things that the other government has made and the opposite you know. So I think that at the end the public site either stops, more than helps. You know.

František: Interesting. And what about some competitors, like you had in the Madrid, or in Spain some other companies, which are trying to run the same program?

Manuel: Hm yeah well when we started in Spain, we didn't have any company, I think company doing what we are doing now or at least at the beginning we started aggregator. We started searching, we had an idea, so we started searching competitors outside to see what they were doing, and we discover of course Curvy. For example, this guys, and they were doing really good actually. And then we discover Carjam, which was more startup, which is now Citymoove, German one. And they working in Germany, and they were doing fine too. And yeah some other companies like Moovit, which connect public transport, it was that kind of aggregator. Then we have Citymapper, which is this public transport, which they move into an aggregator, but in that time it was just public transport and all this things. I would say mainly we were here in Spain, and then Curvy and Carjam, and Citymoove in Germany and France. And just that I would say. It was like the main competitors, and at least us, which is focusing in Madrid, they were bigger than us, and better than us of course, and they are trying to be stronger in their places, and they tried to move into Madrid and into different Cities, but not in our place. So we were the only ones building this.

František: Okay, and like once again, if I really understood it well. At the beginning it was working, that you were aggregator, it was working with public APIs of these companies, but now, all the companies which are listed in the services you offer are companies, you have some sort of deal. It's not like you are scraping any more data from them, you always have a deal with them, that you cooperate with these companies, is it like that?

Manuel: Some of them yes, some of them no. It depends, it depends on the company.

František: With these where you said no, how it works with them? You are like using their public API? Or?

Manuel: You mean with the once, that they don't have the public API?

František: I mean, the companies, which you don't have like the deal with them, that you are sending them to customers or something like that? If you have still some of the companies listed in your offer, you just like using their API or something like that.

Manuel: Yeah, we do have some companies, yeah, actually I would say lots of companies integrated in aggregator, that we don't have any deal with them, that we are not thinking about them or us, but in the users you know. It is for us the main.

František: Yeah, now I understood well. How it is working. Great, so I think its all from me, I asked on everything I wanted, if I am right. Do you have any question on me?

Manuel: Yeah, the master is about big data or something?

František: I study new media studies. Which is like really open program on anything, and I was focusing on big data on some part of my studies. But like the mobility and open data, is what is interesting for me. So I am looking in a ways, with what ideas people came up in the world, to use the open data in mobility and how its could change something like some attitudes of people in the cities. Thats it.

Manuel: We actually, one conversation we had with the city council, is because the council of course who are making mobility, are making better mobility in their place, you know, they give like the licencing and all this things. And actually we talk with them, we said, hey, we our company, we wanna make some business in here, sou it could be a good idea, if all of us, we and them and everything, we can build like public platform with all of the open APIs, and then, we can see what will happens, we will talk to developers, and try to build Smart city. You know. By open the technologies. And we actually still believe, it will be like the main way, how to do it. But you know it's hard to do it, because we are like a lot of players in here, we have like small players and big players and big players the dont want this, you know. They want to have the data for them. So it everything make sense.

František: So thanks for everything, thanks a lot for your time, its help form me and good luck with Chipi. And thanks.

Manuel: Thank you very much, anything you need, please let me know, good luck with your master thesis.

František: Thank you, bye!

Manuel: Bye.

Rozhovor 4

Velobò a ParkInBÒ aplikace

Matteo – vývojář mobilních aplikací pro Android, Bologna, Itálie

Matteo: hey

František: hi mattheo

František: You hear me well?

Matteo: Yeah hold on I okay here we are.

František: Hi, that's great how are you today?

Matteo: Yeah, fine fine thanks. I'm working from home so good. But what what's your name uh it's Frantisek?

František: Its František, like english version is like Frank.

Thanks a lot that you made a time to talk with me and uh I had the look at your job and what you done and that is great. And at the beginning I would like tell you something about my research and about the informed consent. And uh i'm writing my master thesis on the topic successful open data initiatives abroad and transfer of foreign practice in the development of sustainable mobiles in the Prague.

So for me it's interesting anything connected with uh your experience building mobility apps based on open data. And but uh uh I would like to ask you for informed consent that you agree with transcribing recording and uh using your answers for my research I would record it and attach to transcript to the interview of the interview to my research. And I want to let you know that you have to write the refuse or withdraw from the interview at any time.

Matteo: no no no don't worry I agree.

František: I okay you agree so there's a great uh so I would like to ask you uh yeah if you could describe me the story, how you came up with the idea of uh Velobo App and Park in Bo app.

Matteo: okay well it it's not uh a really fancy story but because uh uh I started uh the project Velobo I mean ten years ago because uh I was I was quite bored at work and because at at time I worked at uh the university so there wasn't so much to do. So I wanted to to well I began to to study android and I i needed useful playground to start my research about android and uh I i bumped into this open data stuff from I mean wired magazines something like that. And uh I i told myself well why not I i can't I could play with with those data and try to build something just to start the android so it was driven by my my my needings to study android I i didn't have big vision about open data and and and the at the time also open data was not so so easy to fetch from the site of municipality of my town and uh I had to wrote some emails to to those guy. IT guys and asking them to i don't know to provide this data and to explain to me because it was weird format. So I i had to understand more to dig more into this this and that's it so I i use the this app yeah to to to improve my ability to develop Android. And also with the latest release, that implements the ability, to calculate a fair route to reach the place you want to go using as much bike lans as possible.

František: And you said that it was seven year ago? Or something like that?

Matteo: I mean ten.

František: Ten years ago already?

So yeah when you start it actually there was no open data in the city and you have to ask the officials to give you the data like open it for you?

Matteo: no I i remember there were some data but I had to ask more. There were some errors. Not formatted well, I had to ask, to ping them, to tell me the right data. Or to ask for updates, I was a spike in their back.

František: uh could you tell me something about you? Like what's uh what's your profession and why did you start to do the android apps?

Matteo: Well, I am and I was and I still I am a developer, but ten years ago I started to start Android, and now I am a developer, a mobile android developer. And I thought, My think about open data is a great way to start if you want to build something. I saw open data at the time as a gold mine to well to play. To play, to do something useful. Because when you start building something, it is easy, if you build something useful. It is more satisfying, also for you. And I remember I was amazed by the amount of data you can find and now I have

to say, recently the IT section of my town recreated the old open data site platform. Adding a lot of new features, like the possibility to fetch the open data via API and not only downloading CVS or XLM file.

František: And they they they just did it recently not like five years ago?

Matteo: No, one and half a year ago.

František: Now I would like to ask you something about the Velobo app uh uh I seen that there's like five thousand downloads. Did you get some feedback from the people? If I like they use it or like it?

Matteo: yeah well, back in a days, when I started it. Also a municipality of my town was very happy about it and they took my app to advertise open data portal. And I was, I mean I was the first for long time that build something useful, playable with their data. So they took my app as an example. And said well look here, people can do stuf with our data, and they interviewed me, and also well I had a lot of positive feedbacks from users. And also from cyclist, bicycle clubs and so on. And other thing interesting, I was sometimes quite upset about some people, giving you a one star review, which is the worst review, you can get on the app store. And because sometimes it seems to me, that people are customed to have a updated apps, because they are customed to use google maps. With every data updated to the day itself and with open data you can't provide the update every day. I mean not with the data I am using, and so probably, they miss the culture, the overall culture about open data, that is not you know. And so sometimes people gave me one star review, well this app is rubbish, because it is not update well, like now. It is updated six months ago, because there was, because I had data only from six months ago. So that bothers me a little because, I don't know I how to explain people well. You know, I do with this data and I cant create data, if there are no data.

František: can I ask you what do you think that helped you or help the Velobo up to be successful like you were the first one in the town or uh maybe the promotion from the city what was like the main positive thing which is helped to people start to using it.

Matteo: Well uh I can tell you what can people stoped to using it.

František: Start.

Matteo: Yeah but no, well because I notice people quite to stop to use my app after google maps implements bike lanes for my town. Even if I have to tell sometimes my app is best. Google maps, I dont know where they took their data, but sometimes it is not very precise. When I need to know the bike lanes as a user, I often use my map, instead of google maps. I prefer not only because it is my app, but because I thing I have the best data, but ofcourse people prefers google maps. But I don't know, so maybe back to your question, what can push more Velobo. I don't know, maybe data updated more often, but its just maybe a marketing staff,, because when you are dealing with, in my case a bikelanes. Knowing it is a data from a months ago instead of yesterday, it is quite a same. You know. But if you and your app description if you are able to tell the data updated daily people maybe prefers, I dont know. And I thought also about using data not from official municipality portal, but using a open street map data. Those data are for sure updated on a daily basis, they had huge community of people. But I didn't succes, because there were too much data for me. I don't know. Because they map a lots of data and that crashes my app and app started to run slowly. So I had to find a balance from the right amount data. Because I thinking a lot of data is no data. Because it is too messy.

František: And I suppose that you made the app just for you and like at the beginning you didn't had any money for making the app and did you were thinking about some funding like for future that maybe you get some money from users or from the city to develop it better?

Matteo: no no because I didn't want to make money with this app, because there was a time I implemented advertise on the app, but i gained so little euros, that I thought it was better to remove, because instead of

gaining a few bucks a year, it is better to remove. So from the beginning it wasn't my thing to gain a I received also some offers to work together with a startups, because they spot my app in the store, they liked it, and they ask me to go with them. In order to develop new features, but I always refused, because it is not my purpose. But I mean, for young developer or indie developer, it is a great way to show your work.

František: yeah And when you were speaking with people from the city we are talking about Bologna all the time yeah?

Matteo: yeah yeah yeah Bologna.

František: I was there it is a beautiful city. And you were speaking with the officials about the open data, or about that you made the app. How this worked? Because you said, they were giving you the data, but also you said, that they made a marketing for your app. How this was working? This cooperation between you and the city?

Matteo: I just wrote an email, I took their mail address from the portal, data portal, and they always were kind to me. I don't know. And also they used to update data on yearly basis, so once a year and often they wrote to me, because we became friends, they used to write me, when they had release ready, they used to write me, telling, hey there is a new version of a data, if you want to. And it happens also, that I found some bug on their data, maybe sometimes duplicate data, because importing new data on my app and I saw something weird. So I write them, to say, there is a So and they thanked me of course. Cooperation yeah.

František: And so for the for the marketing of your app you just like put it on the google play and maybe the city officials talk about it for a while. But how how did you get the VeloBo and ParkinBo to the people? If you put it on like Bologna website or somewhere?

Matteo: Maybe at the beginning I posted it as a comment under some open data related topic. But nothing more than this. Just when I develop the routing functionality, that tooks me a lot of work, because I was stubborn and I develop it during the covid lockdown, so I had plenty of time, but it tooks me a lot.

František: I can imagine.

Matteo: Because well I am engineer, but I am not the greatest engineer, but in the, well. When I achieved this, I was very happy about that, so I wanted to share this feature with the people, so I wrote some bike club facebook pages, telling them, hey guys, there this app in town, I did for Bologna and Milan, but not more than this. Because to me is the same if I have a 100 user or 1000 users. Because I don't get any gains.

František: Yeah but you are already like developing the app for ten years so. Why do you still develop it?

Matteo: Yeah but not not constantly of course I do most of the developing the first year and in this last year.

František: I am cyclist, I cycle through Prague everyday, and I use a similar app, and I live in the city center and I quite know all the way how to go. But when I'm getting like some longer distances I use similar app for Prague because there you can choose between two types of bikes like road bike and mountain bike

Matteo: Ah, cool.

František: And also between um three types of ways, like I like to go the fastest one which is like the most dangerous, which go on something like a highways, car can go there 70km/hour, there are also like the slowest

one, which go through bicycle lanes, as you have it. I don't know, what they used for it. But I think part of the data they use, are already the data from the users of the app, like they are a big team, which is developing this app. And tell me something about your second app the ParkinBo

Matteo: That was easy, well, because, technically, it was a fork of Velobó, you probably noticed, that is quite the same, apart from the colors, the UI is the same. And well, that was born because father of my wife have some issues, and he had to use the disability parks and he told me sometimes I am struggling finding those types of parkings. So it comes to my mind, so I saw also this open data, so it was quite a piece of cake, developing new app forking from the previous and feeding with this new data instead of the bike lanes data. And so that's it, I don't know if it used. He used a lot. He tell me, he thanked me, because he use it a lot. But I don't know in the city.

František: For sure, you have like much more cyclist than people who use this parking spots. And also the people who need to use these parking spots are not so, they don't use the smartphones, as much as cyclist. Maybe in the future, more people will start to use it.

I saw, that you implemented twitter feed in it. Why did you do it? I don't speak italian, so I don't know what is written there.

Matteo: No, but it was quite easy, because twitter has an API, to ask for, to fetch the last tweets containing a keyword you are parsing to this API core. So you'll get JSON file, that you'll parse, and present in your UI, it is not a big deal. It is quite common.

František: What role played the open data in the development?

You couldn't make this app, if you don't have the open data. Am I right?

Matteo: yeah, of course, because open data, are the hearth of this app. The fuel, of course you cannot, and also, well maybe something interesting for you. Last year I thought about implementing more cities, on my Velobó app, because I always work on Bologna town. And on Bologna town set of data. And then I start to implement Milan, but it was tough. Because uh every city has its own structure of the data. So I had to you know build some translation routines to understand the data from Milan, and then I stopped. Because I thought well, I could add maybe Rome, or Turin, but they had the a more different kind of set and I dropped this project. Because I didn't want to invest more time. Probably it will remain like that. I will continue to update a data in Bologna and Milan, when they drop new data. I will for sure implement them in my app. But I am not gonna add new towns, because I don't want to invest...

František: More time in it.

Matteo: Yeah.

František: As I was getting into this topic, I understood, that more and more cities, are using a same standard for the data. And maybe it is like how the google works, that if some of the city publish the data in a like standard, which is already set, by open data portal europe, or how it is called. So they for them it's just like few clicks to add a new city so maybe in the future if.

Matteo: Yeah yeah.

František: If like more cities start use the same standard as you are using for Bologna and Milan, maybe than you could add a more cities. But now you have to translate data little bit every time, which is like annoying. Which means the data aren't published the best way, as they could be.

Matteo: Yeah, no, no, every city now, I mean the few I checked, but the major city every town had their own standard.

That stops me from continuing in like development.

František: I have a few last questions.

Matteo: Yep

František: Could you describe the impact of the project? Or the apps? For people? Or for the cities?

Matteo: Of my apps? Of those apps? Mmmm.

František: Or for you?

Matteo: The impact... I don't know. I don't know if someone improve their their bike routine due to my app. I don't think so. But who knows? I don't know. For sure, well, some, because in my app, there are the feature, there are the chance to show the stores. And few of these stores thanked me. About this. Because from their site, it was maybe a way to show their shop. But I don't know, the impact. Well. To me, it was a good experience. But I think well so for people mmm. My wife uses this app. When she had to go somewhere with a bike, from the google analytics, I saw some people, ten twenty people a day use this app.

František: That is quite good. I think.

Matteo: Yeah, yeah.

František: And you see if it is in Milano or Bologna? Or you don't see the different?

Matteo: Yeah, I see this, and I think it is more in Bologna. But I don't know. Maybe people from Milan are too peaky. And too maybe, I don't know the reason. Maybe because I am from Bologna, in the biggest cycling club in the Bologna, the talk about my app sometimes. So maybe this is the reason, I have more users from Bologna.

František: Okay, is there something else, you would like to tell me about the development, data, opendata anything?

Matteo: No.

František: So I thing already asked for everything I wanted to know. And it is great job you done.

And your chatbot you done, 50 000 downloads, that is great.

M. Yeah, that is big.

And (speaking about other not relevant topics.)

With feedback, I get sometimes mad. People is dumb. You know, like the guy who gived me one star in Velobo, because it is not updated.

František: It happens sometimes. Thanks a lot!

Matteo: If you have any question, just write me.

František: Thanks a lot. I can send you if you want to see the Prague on Bike app, I was talking about. I can send it to you, you can have a look. It is developed by the city, so they put a lots of money in it.

Matteo: It is a good thing, when city is involved in the development. And also as you noticed, Velobo and ParkinBo, is not for iOS, well for apple, because I am not apple developer, I work only for android, maybe in the next year I will study a way to port app to iOS system, but maybe in the few years.

František: Okay, so thanks a lot for everything, and I wish you good luck in the development. Thanks.

Matteo: Thank you, no worries, thanks. Bye.

František: Bye.

Matteo: Bye bye.

Rozhovor 5

Transporter aplikace - plánování trasy v reálném čase

Pasi – hobby vývojář iOS aplikací a bezpečnostní analytik, Finsko

Rozhovor proběhl na chatu na Twitteru

František:

Hello Pasi, I am writing you because I have a few questions relating to your work. I am a student from New Media Studies, Faculty of Arts, Charles University in Prague and I am currently writing a diploma thesis on the topic of Open data initiatives in Smart Cities with a focus on mobility. And part of my research is based on following successful initiatives and inspecting the development of the initiatives. I am trying to find out what were the troubles the people behind the initiatives had to face and what were the game changers, which helped to establish the whole project. And when I was searching for open data initiatives at <http://avoindata.fi>, I found your Transporter app and I saw that you built a really good realtime journey planner. I am sure that it is a great benefit for the residents in Helsinki. I am interested in your work, and I would like to have a video call with you and a few contextual questions (not really technical ones) about the development, purpose and use of the app. The interview shouldn't take more than 30 minutes. The usual topics of my research calls are connected to the context and environment where the projects originated, problems and issues, the importance of open data, stakeholders eventually politics and funding. Could you be willing to have this call with me? It could be really helpful to my research. I would transcript and anonymize the interview and use the findings to propose ways of positive change in use of open data for Prague. I have time for the call any working day in the following 14 days except Mondays. Thanks a lot and I wish you a great day! Frantisek Pfann master student of New Media Studies

Dear Pasi, maybe you missed my message. So I found your email and wrote you an email. Hope it is not too annoying for you. Have a great day!

Pasi:

Hi, Frantisek Sorry that I did not reply back but I am quite busy at the moment. Transporter is already quite an old app which I have not worked on for some years. It would be great if you found someone else to interview for your thesis work.

František:

Hi Pasi! Thanks a lot for the reply. I understand, that you are busy. The thing, that the Transporter is already quite old, is in the end more interesting for me. I am trying to find what drives the development of apps and projects, and what stops the development or kill it at all in the end. So if you do not have a time, I understand that. But I am sure, that your case would be interesting for my research.

And otherwise, I can mail you the topics/questions. And you could decide if you wanna answer me by mail, or if you wanna have a shorter call with me. Or that you are really decided, that you do not have a time to bother with me. (That I totally understand.)

Pasi:

Basically, I don't think that has much to do with open data. Every app just has its lifetime, at some point the code gets old, we learn to code better and we get new ideas. So even if the open data would have been better, I would still moved on from it

I did make a new app [@KartastoApp](#) which also uses open data APIs. But I doubt I'll develop it actively for many years once it's "completed" which it almost is.

There's a thing with mobile apps. Add too much stuff into them and they get too complicated and worse than they were. So it's better to know when to stop.

Of course open data APIs getting closed can stop an app from working (it has happened to me too a few times) but that's more rare

František:

I examined the KartastoApp, and I seen, that there is still a development, at least based on the twitter posts. But it doesn't fit my research area. I am focused on apps and project, that could be fitted into the topic development of sustainable mobility.

But yours answers already are interesting for me. :) I would use your points about apps development in the research, if it is alright with you.

Pasi:Right, basically the biggest reason I stopped actively developing Transporter was Helsinki Public Transport launched their own cross platform mobile app, which became very popular

Sure that's okay

They did not have a mobile app until quite recently, a few years ago, and until then there was some demand for third party apps

Another thing with public transport apps is, people have quite strong opinions on how they should work and what they should do. And those opinions vary a lot :) So some people will be angry that you have something while others are angry that you don't.

Also, people won't pay for transit apps

František: That is my hypothesis, that usually the development of the apps and project by nongovernmental organizations or people stops, when the government find come with better project. But the nongovernmental development in the beginning is necessary for the government (or city officials), to realize, that there is the need for the app.

Pasi:

I've got 1 star reviews for having too much functionality.

František:

How did you find out, what is the way, how the should work?

Did you had your strong opinion?:)

Pasi:

Yeah, also that. And the app that they now made is pretty good. Better than any sole developer could make.

František:

Where did you collect the feedback? Just in the reviews? Or you ran some test?

Pasi:

I mean, you might think a transit app only needs to find routes from a to b. Nothing else. Someone else will say a transit app sucks if it only does that. It's really difficult to please a lot of people at the same time with transit apps.

There's a clear difference to map apps, for example. People love Kartasto, no one has said anything bad about it so far. Even those that criticize always mention how they love the app

App Store reviews mostly, talking to others too. But it's hard to get honest feedback that way.

The thing about being a sole hobby developer is you don't have testers. You can't really do surveys or observe people use your app.

*love the app

František:

And you started to develop the transporter app or Kartasto just for hobby, or you seen there, that maybe it could make you some income in the future? And does it with Kartasto? As you said, that people won't pay for transport apps.

Pasi:

They both do produce some small income. But not much. It's mostly just something fun to do and to learn coding. Otherwise not worth it.

I develop apps as hobby. Have other day job

František:

Interesting!

Sorry, but as we were talking here, I seen, that you answered me already third of my questions, so I emailed you whole list, what is interesting for me.

Pasi:

I would guess 99% of app developers won't make back their yearly developer fee
Maybe easier I answer them here :)

František:

And the income is produced by adverts?

Pasi:

I used public transit in Helsinki a lot back then. I simply did not like the existing apps enough and wanted to learn coding got iPhone so made my own app

No I don't want to do ads. I don't like tracking people at all. So the apps are all paid or IAP.

The main issue was probably that the data API was out of my control and I had to wait a long time for Helsinki to finish up providing some data that I needed

So I could never be sure when the data would become available

My learning from that was to never rely so much on an external party for my app data

Also if the API was closed or radically changed, the app would become unusable

Would need to abandon it or write a major update

František:

And you never started to code apps for android?

Pasi:

Another app, AreenaX, a player for YLE Areena (the national TV in Finland) had to be taken off app stores because YLE closed the API

No, only Apple platforms

Hobby developers rarely do both. Or never do both platforms well. People usually love one platform enough to start developing for it.

Although I've seen some exceptions

František:

But some of the apps, especially in transport, have to rely on external APIs.

Pasi:

Yeah. And that's why I don't think I'll develop another transit app again :)

František:

With your Karasto app you also work with external party API aren't you?

:D

Pasi:

I am. But the user is configuring the maps that use external APIs

So there's a long list of predefined ones but the user can add any other map or layer

From any standard WMTS, tile map or other API

František:

I see it, as a development in the minds of the developers but mainly of the organizations (as are transit companies, and cities), that once they make angry all the developers, they find out, that next time, they have to be careful, when they are doing some big changes in the API, and prepare the API subscribers on the change.

Pasi:

Yeah. Helsinki Transport was really good about that, they inform devs about upcoming changes

It's just that sometimes some promised updates take a really long time

František:

I see it as that the data owners have to get used to the world of open data.

Pasi:

They need to make sure they document their API properly, inform in advance about changes, version their API so old functions are still available for some time

I think they should also market apps that use their data

If they actually want end users to access their data this way

Especially if they have their own app

Because otherwise they drown out the third party developers

František:

And did you communicate any way with the data owners? (I don't know, who was running the API, you used for Transporer) Or with the officials of Helsinki? About your app, and what they could do better?

Pasi:

I was in contact with them all the time, over email etc

František:

"I think they should also market apps that use their data" Now, I don't understand. You think, that they should sell the apps and not offer them for free?

Pasi:

No I mean if they have open APIs, and third party developers use the data and build apps. They should have a website which tells everyone about these apps. If their intention was for the data to get used and end-users to benefit from it.

It's really hard to get yourself heard. People won't know your app exists.

František:

Ok, now I understand.

Pasi:

So making an app is not just coding it up. It's also a lot of marketing.

František:

That is how I found you! :)

Pasi:

And with that, the organization that opened the data should help

František:

<https://avoindata.fi/en>

But it is all Finnish open data.

not like Helsinki public transport company.

And how did you make a marketing of your app? If you tried that.

Pasi:

HSL does have (did have?) a page with links to all apps

František:

If any other way, than rumours.

Pasi:

But nobody knew it existed

Once they launched their own app it was marketed everywhere, at metro stations etc

So basically they drowned one all third party apps

You just keep a lot of noise about it everywhere

I'm not good in marketing so don't ask me :)

But yeah I understand why they did what they did and all that is okay. It's just that every developer working it open data should be prepared that the data they use (and maybe even make their income from?) will suddenly go away, since there are no guarantees.

So in a way, it may be dangerous for the developer

But yeah, in the best case it's a win win for both. Organization puts their data into good use by opening API, developers get publicity and perhaps even some money

It has worked much better with Kartasto the map app

Oh and yes. I did get awarded a prize for some of my open data apps. But not Transporter actually

František:

Interesting. As you describe it it looks like to be a developer is quite tough life.

Pasi:

Well, I'm now making it sound like that. But in the end I wasn't making Transporter to make money (only partly). I wanted to learn how to code.

I definitely was not expecting to make millions or anything. Or to quit my day job with that app :)

So it was a hobby all along

But it also is not easy. And I still talk to people who only know app developers make millions, and think everyone is like that

When in reality it's just many many nights in front of computer coding up an app, that some people may use, some of them will like it, others will hate it. So you need to know what you're getting yourself into ;)

František:

I never thought of it as an ungrateful job. It never come to my mind, that sometimes the count of bad reviews could hurt.

But it also gives you great feedback. If the comment it. If the people just give one star review without comment, than it is not really helpful.

Pasi:

It definitely does. Imagine pouring countless hours into it for months. And when it's in the App Store someone gives a one star for some reason you cannot understand.

But making apps and reading reviews hardens you and you learn to read between the lines. Many times they do have an actual point.

The most difficult thing is to accept something you've worked one for a lot of time and think is great actually isn't

And go back on something you put a lot of effort into, and try again

The bad thing being a sole developer is, you look at the same thing for so long, without any external feedback (anyone telling you it's not great) that you become blind to the problems

And it's difficult to get anyone you know to tell you to your face that's it's actually not good and you should fix it

That's the hardest part

František:

And were you thinking about to get a funding for the app somewhere else, than from the users? Like ask a city for some money, and then have yourself and maybe somebody for you to help you to develop the app.?

Pasi:

So at some point you're kind of going blind. Just hoping you got it right.

I think this was not in the interest of Helsinki city at any point. They did not want to acquire an app

František:

Yeah, I am working in design company, and we do a lot of testing concepts, and it hurts when you see, that whole your idea is wrong, that it doesn't work at all.

Pasi:

So there aren't that many options than to try on your own

And it's really really difficult to go back

If you don't have to

František:

(And your purpose was to learn how to code the app, so it wouldn't make a sense to hire some colleagues, right?)

Pasi:

Yeah no. We can say I made some tens of euros per month. There is zero chance advertising the app, paying anyone for anything

Like I said, most developers are lucky if they make back the 99e they paid Apple or Google as yearly fee

After taxes

But I should say it wasn't all for nothing. I did learn (I really think) and I've learned to make better apps. And so do recognize when things go wrong, what not to do etc

So it's about personal development too

I would guess a lot of apps made using open APIs are made by not so experienced developers, like I was back then

It's a good place to learn. You get some cool data to work with, maybe get some users for what you made.

I need to go. But I hope you got some answers to your questions :)

František:

It could be interesting to find some statistics, research, who are the major developers on google play/ istore.

I wanted to be a data scientist, but when I started to learn and code more and more, I had a trouble with my wrists, and had to stop working on computer so much. So i changed everything and find other job.

And thanks a lot for all your answers, you gave me a lot of interesting things to think about.

I will use it in my research, our talk here was a good replacement for the call.

Thanks a lot!

Rozhovor 6

Boira Development - Madrid Metro | Bus | Cercanias - aplikace na plánování trasy

Raul – vývojář mobilních aplikací pro Android, Madrid, Španělsko (jméno změněno pro anonymizaci)

Proběhlo skrze mailovou konverzaci:

Hi Pablo,

thanks for the reply. I feel sorry for your covid illness, I went through it in February. I understand that you don't feel in the mood for a Zoom call.

So thanks for the opportunity to send you the questions.

If any of the following questions make you feel uncomfortable, because it is too personal or a business secret you can just skip it and continue on to the next one.

I am writing my master thesis on the topic - *Successful open data initiatives abroad - transfer of foreign practice in the development of sustainable mobility in Prague*. So for me is interesting anything connected with your experience building mobility apps based on the open data.

Could you please describe to me the **story and context**, how you came up with the idea of the first Boiradev Madrid/Barcelona/Zaragoza/San Diego Metro Bus etc. app? What was the app situation in the area? Were you the first app for this purpose or you came up later but with a better one?

I am interested in the environment and impuls which led you to begin and establish the project, and is it possible to describe the impact of the project? Were there some big problems or issues?

What role played **open data** in the development and sustainability of the apps? Would it be possible to make your apps without open data?

Did you communicate and cooperate with the **stakeholders** in the mobility area? As are the transport companies, politicians or anybody else? And how does it go?

PR and marketing - What **communication channels** did you use to get the apps to the public? Did you do some marketing and PR strategy?

Funding - I suppose, that the apps are making some revenue from the ads, was it the major purpose to develop the apps to make a profit? Or is it necessary that the apps are making profits? Or had you any other (maybe from public resources) funding for developing the apps?

You and your team did a great job with the apps! I am pleased that you are willing to answer me some questions. If is at the end more comfortable for you to have a zoom call than answer me by text, I am available anytime from now till late Tuesday for the call.

I would like to anonymize your answers in the research, so there couldn't be a way to recognize what answers are connected to your apps. But it would be good, if I can mention, that one of the interview was with the developer of Boiradev public transport apps.

Thanks a lot!

Frantisek Pfann

Hi Frantiksek,

Sorry for the late reply, last week I have been having a holiday break with my family, today I'm back to business.

Context:

In 2009 I graduated from University in the burst of the worst economical crisis in Spain of the last decades so I had to move from a relatively small city to Madrid looking for the chance to find a job in my field (Hardware and Electronics). At the very same time, the first Android devices appeared in the market and I got one as a self Christmas Present because I was really interested in the idea of "Openness" and the possibility of coding my own apps.

To go to my job I had to use various means of transportation, eg. Bus + Train, or Metro + Train and I felt that there was a lack of information available to plan the best routes so I coded a really simple App just for me, I wasn't thinking that anybody would find it really useful. At this point, I was just scraping data from the Transportation Companies Websites, like the bus company to get Bus Arrival real-time info or the Metro web to get routes suggestions.

Official Apps were inexistent or really basic with a very bad UX, so being one of the pioneers in this field helped my app a lot to become the most popular transportation App in Madrid and keep in that place 10 years later. In recent years official apps have emerged but they are poorly maintained or the UX is still very bad.

Open Data:

In Madrid, there are many Transportation Companies, with different political levels dependencies, eg. Trains depend on Spanish State, Intercity Buses depend on the Madrid State, City Buses, Bikes, Car Parkings depend on the Madrid City Council, Metro is compounded of various private companies that depended on the Madrid State.

Each political level / **stakeholder** has a different approach to **Open Data:**

Spanish State Level: Almost no open data available or not useful at all, no way to contact to discuss about it. They don't care about scraping web data like train timetables, routes, etc...

Madrid State Level: Some open data available but usually not updated, they have some public but internal API's, they don't care about developers using them.

Madrid City Council Level: Very Goog Open Data Portal, happy to discuss about new API's, they contacted proactively me to provide access to Open Data and improve my apps.

Metro Private Companies: Zero Open Data, Zero communication at any attempt to get access to their private API's. They block any scrapping access to their site or app, they fight against open data.

I know that other app developers like "CityMapper or Moovit" have better access to all transportation data at all levels, I guess this is due to them being World Wide known startups with large funding and "high level contacts" and that they offer in exchange users data/metadata, which probably not many users are aware of it.

I also think that at some level, some companies are worried to share open data because it could prove that they are not providing the service they have agreed to (Millionary contracts paid with public money), e.g. Company X has to provide service every Y min at the line Z, from 6:00 AM to 1:00 AM...)

PR and Marketing:

The first years I invested 0€ in marketing, the growth was purely based on organic search and "mouth to ear" propagation among users. Now that the market has matured, we invest a little on Google Ads to get new installs, nothing sophisticated.

Profit:

In the beginning, I just coded the apps for fun as a hobby/side project while I was working on my "actual job". Ads hadn't yet arrived to the mobile platform so I had no income. When Admob appeared as a monetization solution I started to earn a few euros each month but little by little the amount was increasing. I realized that I liked more coding apps than my job on electronics so I switched my career and joined Samsung as Android Developer where I learned a lot.

2 years later, in 2015 I quit Samsung and founded the company with a friend betting on making apps as a way of making a living. Our business model is based on making open data from different domains, eg. Transportation, Electricity Prices, Pollution data, Tides, Weather, etc... easy to use to people and monetize it with Ads or subscriptions to remove ads and get premium features. We won't become riches but it provides enough to cover server expenses and get a decent salary with all the benefits of remote work and self-employment.

Kind Regards.