

## Interview 2

Interviewee	02-Esri-B
Interviewer	Ashraf Shaharudin (TU Delft)
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### Interviewer

So my first question to you, could you please describe your role in [Esri distributor in country B]?

### Interviewee

I am the <redacted>. The proper name for my area is <redacted>. Basically we are familiar with the name <redacted>, in general. And we are in charge of anything related to data within GIS. As you know, we are software providers, so data is an additional value proposition for our customers. So we basically drive sales centred in data and we help our customers to achieve their goals in projects through geospatial data. That's our goal basically.

### Interviewer

OK. And how long have you been working in this or a similar role?

### Interviewee

In this role, I've been leading the team for <redacted> years. I've been in [Esri distributor in country B] for almost <redacted> years.

### Interviewer

OK. And before your current role, you also work related to providing content service?

### Interviewee

No, I've been working in Esri for <redacted> years and <redacted>. And I was involved in different roles within Esri, but only in the last <redacted> years I've been involved specifically with data.

### Interviewer

OK. Can you please describe how your current role is related to open data?

### Interviewee

One of the main things we do in Esri is to try to facilitate the access to public data sets to our customers. So there's a lot of public data, open data, or official data sets that are available in our country but normally they are disperse, they are in different places published by different agencies. So one of the jobs we do or we try to do is to offer that in a centralized catalogue that in the ecosystem of ArcGIS is called Living Atlas. So basically here in [country B] we try to talk to public administration, public agencies that are customers of us, and they are already using our software and they can contribute to this catalogue. And we also gather other data from customers, companies that are not our customers, to transform it and register it inside the ArcGIS platform.

### Interviewer

OK, now I would like to move to the topic of open data services by [Esri distributor in country B]. Could you please describe the open data services offered by [Esri distributor in country B], including who are the services for? You mentioned a bit about Living Atlas. Is there any other services and who are the target customers of these services?

### Interviewee

The job we do as a <redacted> team is basically -- regarding open data -- is basically through the

Living Atlas. So this is our way to make open data more accessible for our users. So Esri -- this is not only a thing for us, this is a global initiative -- Esri has a very deep commitment with OpenStreetMap. So basically if we get a customer that wants to bring the data into the ArcGIS catalogue, it can also be shared or made available for OpenStreetMap to make the updates. But this is not something we do directly, this is some global initiative.

Esri as a company and we particularly in [country B], we have technology to enable our users to create open data portals. So this is more a technological part of the company that we don't carry on directly from our side. It's more of a software piece that allow our customers to publish open data, their data as open data. But our job is basically -- the things we do regarding open data is through the Living Atlas.

**Interviewer**

OK. Could you please describe what are the main activities in providing this open data services through Living Atlas? What sort of things that you have to do?

**Interviewee**

We have basically 2 lines of action. So if the public agency -- we work always with data or almost in all cases with official data that comes from public administrations, there are a couple of exceptions, but they are rare. The idea is if they are our customer so they are already using ArcGIS, we train them to publish the data directly in our platform. I mean, they probably will have the data already published. So our mission is to make it available through this catalogue, that is easy to search and to use within the ArcGIS ecosystem. This is easier for us because we don't need to maintain the data. I mean, if the public administration is the owner of the data, they can do the administration and the maintaining of the data by themselves, which is more logical in this way. There are some other agencies that publish data and they are either not our customers or they are not publishing services with our technology or they don't want to get involved directly. So in those cases we do that job for them or basically we gather that data and we republish it in our platform, so we can make it available through Living Atlas.

**Interviewer**

Do you have to do a lot of converting format from data suppliers for example if the data suppliers do not provide in shape file format, so do you have to do a lot of this conversion?

**Interviewee**

Sometimes. We work mainly with geographic data. So many people share the data -- many agencies share the data in geospatial enabled format, so it maybe it's a CSV with coordinates or maybe it's a shapefile, something like that, that doesn't require too much conversion. But sometimes it comes, from instance the [country B] cadastre provides in GML, which is not an easy format, so you need to do some conversions. Sometimes we create some integrations to read data, load data from API or services. There are some real time or at least very frequently updated services like meteorological data or traffic incidents, and we create some automation so we can basically publish ArcGIS service that is continuously updated.

**Interviewer**

OK. The [country B] cadastre, is it <redacted>?

**Interviewee**

It's called <redacted>. It's part of <redacted>. It's an agency within <redacted>. But it's called basically the <redacted>, something like that in [country B].

**Interviewer**

Yeah. So I think I got confused because <redacted>. So they're not the cadastre?

**Interviewee**

No, that's part of the <redacted>. The <redacted> has the <redacted>, which is basically the part of the <redacted> that is in charge of publishing data, of making data available and they are part of another ministry differently. So we have in [country B] the main agency for geographic data is <redacted> or <redacted>, which is the national mapping agency. And then you have the national cadastre, they publish only cadastral building and parcel information. And we have the <redacted>, which is the <redacted> of [country B], and they provide all the census, on population information and all the statistics regarding population, economy, lifestyle and things like that.

**Interviewer**

OK. Thank you for pointing it out because I actually just realized just now when talking to you, because <redacted>. And I realized actually in [country B], it's <redacted>. So my next question is, so how long has [Esri distributor in country B] been offering the open data services?

**Interviewee**

That's a good question. I'm honestly not sure I think probably, around 10 years ago, something like that. I'm trying to -- let me check because I'm so bad with dates in the past. Like I never. I can never remember the exact date of something I already remember is far away or not. But in fact I was -- I led a project in [country B] when we released our first version of ArcGIS Online, that was our cloud based environment and that was the time when Esri started to launch base maps and public data. So probably was a little bit after that. Let me check if I can find the date of. 2013, so it's nine years. Yeah, probably maybe 8-7 years. The first thing Esri released was basemaps that were based in public data and commercial sources. And then I think they started to create more content in general within the platform when we release the online part of our technology.

**Interviewer**

And how do you think the open data services that you provide benefit or attract customers?

**Interviewee**

The feedback we get from customers is generally very positive. As I said, the problem, at least in [country B], is that there are a lot of public data but -- I couldn't say if it's a problem with the legislation that the laws are not very specific on how the public agencies must release the data. But the fact is that every different agency does it in a different way. And we have a very complex -- for the size of our country -- we have a very complex government structure because we have <redacted>. So it's very complex. There's part of the government is under the local or the regional or the national. So if you are looking for a specific dataset, you don't always know where to look. So the job we do is basically trying to aggregate all this and put it in the same repository. So I have the feeling that our customers really value this very positively because they have a few clicks for instance, all the data we need -- not all the data, we would like to publish all the data, but that obviously impossible. But I have the feeling that even in the open data community that is more often they are pro open source and not very pro proprietary software, they kind of look at with what we do and they are like trying to do the same thing basically. So generally speaking, we have a very good feedback about the way they use this data.

**Interviewer**

OK. And how do you think the open data services that you offer benefit [Esri distributor in country B] itself? Do you see a more take up rate of ArcGIS software for example?

**Interviewee**

We don't have metrics in place to do that, but our feeling is that that's true that the fact that we have data that is integrated in ArcGIS, even if it's public data that you can find elsewhere, it's very positive for our customer and it's one of our key selling points. That's why we try to do it because we want to support our customers, but also because we think we drive business or at least it helps see our software more positively.

**Interviewer**

Yeah. How many staff are involved in the open data services in [Esri distributor in country B]?

**Interviewee**

In our department, we are <redacted: less than five> people. My role is a <redacted> and I lead the team. And we have two people that are more technical and they are basically in the data preparation. We are not -- our time is not 100% for the open data. We do also other projects and we also distribute premium datasets that come with the license from third parties, from companies that sell it basically.

**Interviewer**

Yeah. So all these <redacted: less than five> people are in the <redacted> team?

**Interviewee**

Yeah. We are -- the <redacted: less than five> are the <redacted> team.

**Interviewer**

OK. What are the costs of offering open data services to [Esri distributor in country B], financially or non financially? What are sort of things that you have to bear because you are offering this open data services?

**Interviewee**

You mean the cost?

**Interviewer**

Yeah, it doesn't have to be numbers, but what sort of things that you have to bear the costs in order for you to provide this open data service?

**Interviewee**

It's basically the time and the people you need to put to make that. You need to do the two things. One, technically you need to process the data and publish it and maintain it and be aware that there are updates and you need to do all those things. And the other thing is that you need to do that promotion with customers. If you want some your customers to publish this data into ArcGIS Living Atlas, in this case, you need to educate them, you need to tell them the advantages, you need to help them the process the first time, and so on.

**Interviewer**

Do you also have to bear the cost of server for example?

**Interviewee**

Of what?

**Interviewer**

Server like hosting the data, the server.

**Interviewee**

Yeah, that's true. You're completely right. Yeah. The thing is that that's not a fixed cost for our department. I mean, basically Esri Inc -- it's a cost we pay, but as we pay it as distributors, as part of our licensing, it's somehow hidden in the rest of the cost of the company, so it's not a cost that we see specifically. But we are paying Esri for the use of our infrastructure even if we are paying as distributors, so it's probably not the same cost customer will pay.

**Interviewer**

OK. But right now, it's not a main concern? There's no issue of like increasing cost of server?

**Interviewee**

No, because we are using -- the infrastructure we are using, we are using also for demonstrations and for technical, for our basic daily job. So it's not something that we are using specifically for this. We also have some local hardware, some servers that we have to maintain, we have some infrastructure to make demos but again it's like a shared cost between different areas and is not used exclusively for us, so we don't have a specific budget for hardware in our area. But these two is also a cost that you have to have in mind.

**Interviewer**

What are the challenges encountered while providing open data services?

**Interviewee**

From the Esri perspective, the main challenge I see is that it's not easy to find geospatial data available. So there's a lot of open data, but there is not so much data that is geospatially enabled. Or they are a lot of data that might be spatially enabled, but it's maybe only at the region or province level which is not very detailed and not very useful for most studies. And then when you have geospatial data, as I said, one of the challenges is that the information is so dispersed and it's in different web pages and different formats. And there are a lot of information that is published as an OGC service, so if you have a WMS service, basically you can do anything for displaying it but you cannot do any analysis or any data extraction from it, so it's not very useful for anything but visualization. So you need to do a lot of work of like compiling data from different portals, different places, different web pages, each one with a different format, each one with a different way of downloading. You need to put everything together. You need to set up processes. If it's not in shapefile, CSV you need probably to do some conversion. You need to -- for instance <redacted> or <redacted>, they have RSS feed so you can subscribe and see where are the changes in the data but I don't think anybody else does this, so you need to go and check if there is a new version of the data. It's really complicated to maintain a catalogue, especially when it grows.

**Interviewer**

So you have different standards, different format. And do you also have issues with irregular update, meaning that they update, but it's not yearly or something that you can predict when they would update it. Is it also an issue?

**Interviewee**

There are some data sets that have like constant update periods, most of them are yearly or maybe every six months, but they're definitely some data that hasn't changed in five or six years and maybe this year they are going to change it and you don't know until you see it published or you are aware of the legislation and all the documentation. But that you cannot be aware of everything in every area it's impossible.

**Interviewer**

And for [Esri distributor in country B] do you also process data from a certain regional or municipal only, even if those data is not available for the whole country. Do you also process that or you only process data that is available for the whole country?

**Interviewee**

No, we do both. And there are some data that is available for the whole country. As I said, normally different data is handled by different areas or different levels of the government. So normally ministries and other government agencies has data for the whole country and there are some regions that have data only for the region and there are municipalities that have data only for their cities. So we do all the way. We have some contributors in the general government, others in the regional governments and others in the local government.

**Interviewer**

Who are the key open data actors that [Esri distributor in country B] engage with? Apart from you mentioned open data providers, different agencies, are there any other people in the open data ecosystem that you also engage with? Perhaps you also talk to users or your other partners, standard body, for example?

**Interviewee**

Not from my area directly, but the people who work particularly with our customers in public government, they are involved in some events and meetings that are hosted or participated by people in the open data ecosystem, the spatial data infrastructure symposiums and similar other organizations. We, from our area, we are trying to get more involved with the guys at the OpenStreetMap community, but we have just started to be in contact with them.

**Interviewer**

Do you have any example of projects or cases where [Esri distributor in country B]'s open data services demonstrated impacts?

**Interviewee**

I have one use case in particular. It's something we did as a demonstrator of what you can do with technology and open data. I can share that with you because it's public. Let me look for the URL and I can share it with you.

**Interviewee**

So basically what we took here was traffic data – accident data in <redacted>. And we did some statistical analysis. We did a process of turning it into geography because it was referred to addresses. So we need to geocode it and transform some of the addresses. And what we did was -- you want me to share the screen.

**Interviewer**

Ohh yeah yeah. If you can share the screen?

**Interviewee**

So basically in this part here we talk about -- we use notebooks in Python, some R as well, to convert the data from the original source to something geographical. And we did some cleaning of the data, we analysed some patterns, we detect some problems. We use also some regular expressions on R to try to -- there were some addresses that were referred to intersections or things that were referred to some major highways inside <redacted> and we need to do some change to make sure that the geocoder where was able to find the coordinates for those points. And we did at first some

visualization, so this is basically how the accidents in the city are happening across, I think it's two years. Yes, it's two years. So you can see for instance, by gender, you can see by age, and you can filter by district, by number of people involved, by type of accident; you can filter and see what's happening and where.

And we have some number data numbers here. We have the maps, for instance the districts of <redacted> that record the top accidents, the more common top accidents, the gender and things like that. And we did some -- also some a couple of analysis there were like 1000 ideas we have but we stuck with a couple of ideas, basically if they are more accidents near schools. So we created this service areas, this isochrones around schools in <redacted> and we analysed if the number of accidents in the near area are higher or lower than in the outside area. We in fact found out that was the opposite, that there are less accidents near schools, which means that probably the signs and all the security measures in the streets are working somehow and people are more aware of the fact that they are school right there. But we also did like a geographic analysis on how the accidents were distributed around schools. And we found that there were some places that apparently they had some local places where accidents were higher -- so the number of accidents near schools were higher. We did some statistics to find that actually there was a clustering, so there was some areas that the statistically have more points, more accidents around the schools that in the average of the city.

And we also did another study on how was the relationship between the place where accidents were taking place and places where the hospitals were to understand which places had a high rate of accidents and at the same times were far away from a hospital. So we analysed the distance that the time between the accident and the nearest hospital for the top places basically. And we did some segmentation by day of the week and time of the day. And we did some analysis of -- this is basically a map that shows number of accidents and distance to the closest hospital. And this is the same, but in 3D. So you can see where the most accidents are. In the darker colors are they are further away from the hospital, from the nearest hospital.

**Interviewer**

This is fantastic. I have a few questions. One is this commissioned by the <redacted> or no?

**Interviewee**

No, no, we did this as you know on our own, just as a demonstrator.

**Interviewer**

And this is all based on open data?

**Interviewee**

Yes, this is all from the open data. The only thing that is not open data is there the road network to do the calculations because this is using our own raw data that is based on HERE data.

**Interviewer**

OK. And so this is done by the <redacted> team people that you mentioned?

**Interviewee**

Yeah.

**Interviewer**

Wow. OK, that's impressive. So you do a lot.

**Interviewee**

We actually had at that time, we had a trainee, some people from the university. He was doing a master and he had the work with us. He's working with us now in other area but he helped us especially with data transformation on the Python and programming.

**Interviewer**

Yeah, to me this is a fantastic example of how you show the value of open data. So in a way, it also encourages other data providers that this is the kind of analysis that we can do if you release your open data.

**Interviewee**

Exactly. Yeah, that's the idea. And we try to say I mean if you put the information with a more accurate or a better geospatial information, you can do a lot of things. Because they published the data only with the address, not the coordinate points. So it's like very hard for a regular person. I mean we are expert in geography, but for a regular person is very difficult to [process] the data and do this kind of analysis.

**Interviewer**

Yeah, but the <redacted> is the data provider, right? And so they also provide data of where the accidents occur?

**Interviewee**

Yeah. It's a whole data set that they showed where the accidents are happening. But they are referring to the postal address instead of coordinates.

**Interviewer**

OK. So my next question is regarding [Esri distributor in country B] in the open data ecosystem. Do you think [Esri distributor in country B] plays a role in enhancing access, supply, or flow of open data?

**Interviewee**

We would like to think that we do both from the technological point of view, because we provide technology to help our users, to provide data in a way that is it's multiformat at the same time, honors the geography and allows citizens, but also developers to access the information. And from our perspective, from the content perspective, our goal is to make the data that is owned by the government or created by the government more easily accessible by the professionals that work in this case with GIS technology, which I think is positive because normally we get a very positive response when we go to a government and say to them we want to publish your data in our platform because what they want is to get more channels of diffusion, they want the data to be more accessible.

**Interviewer**

So to them, it doesn't matter that you that you publish your data on your platform at the same time they publish their data on their own platform? To them it's fine?

**Interviewee**

Yes, I mean it depends on the government, because if they are already using our software, they are probably publishing with our platform, so making it available through the Living Atlas is for them trivial. If they are publishing with a different technology, normally they have their own set of OGC services or open data catalogue or web page or something with CSVs or whatever, normally they'd say: there's the open data catalogue, take the data you need from them and do whatever you want

with it because it's open. But they don't want to get involved in the process of publishing it again in our platform.

**Interviewer**

Yeah, but you do sometimes take data from their open data platform and put it in your platform, right? Yeah.

**Interviewee**

Yeah. And we recognize that's not the ideal thing. I mean from our philosophical perspective, probably you should have a single repository or things that are referred to -- like data spaces and things like that. But in the real world, I mean, there is no way there is -- even there is the OGC that supposedly tells "this is the standard", it's not easy to get a simple or a single set of services for everybody.

**Interviewer**

Yeah, but from practical point of view, is it a lot of work for you then?

**Interviewee**

Yeah, we try to balance the usefulness of the data and the cost for us to process it. If it's a very useful data like we said, cadastre for instance. Cadastre takes a lot of processing because it's a huge data set and this comes from GML, so it takes a lot of processing, but we recognize that these are very important dataset because everyone uses it. So, we take the effort the time to publish it. But maybe there are other products that are not so popular, they are not so used or they are very local, so, for us maybe doesn't make sense to take the effort to create the data.

**Interviewer**

OK. Do you think [Esri distributor in country B] plays a role in connecting other actors in the open data ecosystem?

**Interviewee**

Again, we would like to think that we do. But as I said before, my feeling is that many people in the open data space are advocates of open source software. So they kind of see us like the enemy. So it's difficult to find a balance position. I feel that this is like some kind of religious belief. You know, you are advocate for the open source software or not. It's the kind of if you believe in that there is no way you can think outside of that. We are different technologies that live in the same space and we try to do our best to solve the problems of the users. It's that simple. And the end of the day it is that simple. There shouldn't be, let's say, dogmatic views about the way you approach these kind of problems.

**Interviewer**

Do [Esri distributor in country B] organize the yearly, I think they call Esri GIS conference? So you do organize it as well every?

**Interviewee**

Yes, we host a user conference every year.

**Interviewer**

Yeah, and usually, do you also have the demonstration from the <redacted> team?

**Interviewee**

Yes, but instead of doing something specifically for content only, what we try is to talk about content in the different presentations for the different industries. I believe that makes more sense instead of

having, let's say, specific presentations revolving around content. We try to have a small chat about content in the, let's say, utilities track and the local government track and the tourism track. So each type of user only has the view that impacts their own business basically.

**Interviewer**

OK, instead a big plenary session, it's more like small sessions?

**Interviewee**

No, we have a big plenary session that is more about strategic positioning and a lot use cases. But then after that plenary session, we have normally some technical sessions that are centred on our own software, basically software pieces, software packs. And we have vertical tracks, so there are like a set of use cases and technical presentations that are related to let's say, retail, and another one related to engineering, another one related to utilities. Instead of giving like a content presentation as a technical presentation completely isolated from the rest, we try to talk about content in the different verticals because it makes more sense to tell them -- the data from engineering is this one the data you are interested in is Lidar data or whatever, and it's a different thing that you are going to tell to retailers that you are going to talk about lifestyle and demographics and stores and POI and things like that.

**Interviewer**

And so some of them are open data and some of them are not open data, right?

**Interviewee**

Yeah, some of them are open data and some of them not, yeah.

**Interviewer**

But do you think in general these contribute to a much more conversation about having data open, do you think in some ways it helps us all to spark the conversation?

**Interviewee**

Yeah, actually we are in a moment now that most of our presentations start with the Living Atlas. So before we start talking about technology, we talk about, I mean anything needs data. So on top of your data, we are providing a set of data that for context for your project. And then this is the technology to make it real or to put together and give you the answers you need.

**Interviewer**

Do you have any suggestions or wishes of how [Esri distributor in country B] way of doing things could or should be? Is there anything that should be changed, whether in terms of technical or nontechnical aspects?

**Interviewee**

We are -- in the time I've been in -- because the <redacted>. So from the time <redacted>, I think there has been a change in our companies mentality. I think this must be a commitment for the whole company. If the only people who talk about content are my team of <redacted: less than five> people, we are not going to be successful with it. And my feeling is that this is changing mainly because in the IT business in general, everybody's talking about data. So every technological company understands that data is like the new frontier, like some say, is the new oil or something like that. So from the very top of the company they recognize that the data as a message to the customer, as an initiative or a strategic commitment from the company, as something that you need to do. So yeah, what I said was true. In the last user conference we I saw that many of my colleagues talk about data as part of the demos. And this is something I'm very proud of because we have like,

changed the mentality of the company and everybody's thinking that the data is part of what we do now.

**Interviewer**

So do you hope to see more resources in terms of like staff or in terms of budget to the <redacted> team?

**Interviewee**

Yes, because we are also growing in terms of business. So that that definitely helps.

**Interviewer**

OK. Now do you have any suggestions or wishes of how other actors in the open data ecosystem should improve, be it a data provider so data users, what do you think they could do better in order to help you as an intermediary?

**Interviewee**

As I said before, I'd like to see more detail geographic data, which is not common. Most of the -- this is a huge challenge for most of our customers because they often don't have the technical abilities or the resources to create this information. I think that's the biggest part. Creating data, maintaining data is very hard. We talk a lot with local administration. We have data product that is focused on the sustainable development goals. And we talked a lot with local administrations and the local administration is producing a lot of data because it's the agency that is closer to the citizens you know, it's your city. So they have a lot of information and a lot of local information. But putting all the information together and having it in the same system is extremely hard. And there are like some very basic information that municipalities must have and you cannot find anywhere, for instance, business information. I mean, every business in the city must pay taxes, so the municipality must have the information about this, this businesses and they don't. For me it would be really nice to have this detail information all in place or published with geographical data because we could do a lot of fabulous things. But only the biggest city have them, and even if, like <redacted>, they provide the data in a format that is not very suitable or not very easy to process. It's very difficult, it's very difficult because every administration does the thing differently and it's very difficult to keep track of all the data that is floating around.

**Interviewer**

Do you think that some of the data they collect but they do not publish or some of the data they do not collect at all?

**Interviewee**

Probably both. There are some data that they collect and they're not publish. Supposedly as far as I know, the laws in [country B] forced the government agencies to publish all the data. The thing is that, as I said before, it's probably not very specific so many administrations, that's the bare minimum to just put the check, meaning "I have published data and that's it", so, they don't put many effort in it. And there's probably some data that they do have and they use for a specific process, and it's so particularly captured for that specific project in a specific system built for that that it is impossible to take out from there. So there's probably information that is lost somewhere and nobody knows where it is, except the maybe the couple of people that work specifically in that project.

**Interviewer**

Yeah. And so maybe there are also some data that do they do not see the value of collecting it, so that's why they haven't collected it?

**Interviewee**

Yeah. Or they are unable because of time or resources or money.

**Interviewer**

Next, what do you think about the emergence of open source software like you know QGIS and also database like OpenStreetMap? Do you think it change the way [Esri distributor in country B] does things or should it change the way that [Esri distributor in country B] does things?

**Interviewee**

I think we should collaborate and contribute with those initiatives. But I think that what we do is what we must do. I mean, I don't think we can improve the idea more other than you know, put putting more resources to bring more data into the system. But the philosophy of what we do, I think is very well thought out, to be honest.

**Interviewer**

Yeah. So you think, they are target market for ArcGIS, they are target market for QGIS and you do different things, you serve different purposes.

**Interviewee**

Yeah, I mean each platform and each technology has its pros and its cons. We see ourselves as a complete and integrated platform. QGIS is specifically a desktop application that might compete with our desktop application and do more or less the same. Our advantage is not having that specific desktop platform or desktop application, but the fact that that desktop application is integrated with a lot of other application that makes sense in a corporate context. If you need to do something with drones, we have an application for that, it is integrated with the rest of application. But at the end of the day, every company will use whatever they find useful. I think open source software is a really nice idea but the problem is that many companies think that open source means free, and that's not true. You simply are distributing the cost in a different way. That's the main discussion that we see in [country B] at least.

**Interviewer**

My last question, are you familiar with INSPIRE in general like the concept of INSPIRE directive?

**Interviewee**

Yeah. I'm not the main person that works with INSPIRE, there are or some other people in my company that are very focused on INSPIRE initiative.

**Interviewer**

OK. But my general question is with the development of SDI, spatial data infrastructure in Europe, especially since INSPIRE, what will you say are key lessons learned? What do you think are the do's and don'ts for emerging open data ecosystem? What can be learned from INSPIRE or SDI since INSPIRE?

**Interviewee**

This is a question that one of my colleagues would be able to because I'm no expert in this. My feeling is that it's too complex. It's very specific, it's very complex, has a lot of information in it, has to be in a very specific way, so my understanding is that most of our government agencies were not able to put it into works until very recently, and I'm sure that many of them never could do it anyway. I think again as a philosophy it makes sense, but probably the way they implemented it made it very difficult to -- as in, again because maybe it's also a problem with our structure in [country B] but if

municipalities need to do this with the amount of resources and knowledge and technical ability they have, I see this really, really complicated.

The main philosophy what we do with the Living Atlas and ArcGIS online in general is that you are sharing content in a very similar way that you would do in Facebook basically. You are just publishing content and tagging it with some words, so you can find it in searches. It's very human in that way, it's not so structured, so it's probably easier. It's probably more difficult to manage in the long run or more difficult to harmonize, but it's easier for the users to publish and find content in a more natural way.

**Interviewer**

OK, so that's the end of my questions to you. But before we end, do you have anything that you would like to share with me with regard to open data ecosystem or Esri or anything that you think would be beneficial for me to know?

**Interviewee**

No, I think we have covered a lot of topics today actually.

**Interviewer**

OK, I'm gonna stop the recording now.