Notes/Report: Roundtable Discussions on Semantic Interoperability and People

The Chair (University of Espirito Santo, Brazil) opened with brief notes and some questions: Transparency is not only a tool for auditing but also for management. Looking at the semantic web from a government point of view, we have an opportunity to create an ERP system – distributed and collective. This can only take place with people involvement. Need more than transparency of data but also of metadata so that info can be queried. Currently we are leaving data behind and not providing all the services possible. We could have the real citizen to build the service that he or she wants; so semantics are a fundamental issue. And we need good reference models so that citizens can combine info and so that government agencies can share information. False agreement problems occur when we think we agree but do not have the terminology clear. Interoperability is not only about technology – which does not mean that the tech problem is solved – but we need to build models. The reason that electronic markets have failed is because there were many concepts that seemed trivial and routine but actually hid important considerations.

So, questions are: Does it make sense for us to build semantic interoperability? We need reference models to build semantic interoperability, but these are hard to build, are not simple to build, and how are we going to do this? How do we get people involved in this? Think about knowledge management lesson learned that central repository for knowledge did not work because it was detached from daily processes and no incentives. We need different incentives to get folks involved – sense of purpose, autonomy, etc.

Chile responded that it is difficult to motivate a public servant that knows he cannot be moved or removed. We need to be more creative with punishment and price incentives. How to make them feel that they can go that way. We have a good experience in which public servants have a yearly bonus if they comply with e-gov as certified by digital agenda agency. A legal framework is also needed to help ensure compliance. We have yet to explore the annoyance of citizens, perhaps a media campaign highlighting that citizens are doing things that they should not have to be doing.

Egypt shared an experience with Ministry of Justice and authentication where staff at first did not want anything to do with computers (Land Registry section for instance, which was part of the Ministry, preferred old habits and rules). So they left them with computers to play games on and for listening to music as a way to get them familiar with technology. Later they turned off the games and had them focus on work.

Mexico shared that for the people working with transactional systems, it seemed as though they have become workers in a factory where creativity is no longer needed. We have behavior problems when building data forms and standards. One gentleman at the time of retirement, when asked what he did, said he realized that he was simply waiting for retirement. So, if we build tools, we must try to find ways to enable creativity and find a way to change or enhance. We have to look into the paradigm of making systems intelligent and making the incentives clear to people that these add value to what they are doing.

Iraq urged that we look into history. For example, we had difficulties with civil servants because for 30 years they thought the government was an exploiter rather than that they were part of the government. On metadata and the common understandability of that, you should consider issues of different language and different cultures. In integrating these – even when using the same language – maybe we should think of coding, which classifies knowledge and topics and subdivisions. This can help ensure queries work.

Chile offered that there is another way of looking at it depending on what you are trying to interoperate. For example, documents are well known and do not have to be coded as the format is known to all. Translating birth certificates for example, semantics have not been an issue because we are keeping the paperwork as it is in the first stage, in a format familiar to all.

The Chile consultant offered a view of the environment and content built by users, by using free tools. Citizens have more power and the media is changing. One of the major challenges is the view people have that they will lose some power. Look at raw data access. Look at the US government’s open data initiative (www.data.gov) or check out xxx. One of the challenges is to change the idea of the government to provide it all but now others can use it. Change the mindset or way of thinking. You might want to change the vocabulary as public servants use different words than the person on the street. We must call a paper or document what the people would call it, not what we might call it in government.

The Chair voiced his agreement and stressed that we need an application people can use. He noted that some relations with historical dependencies need to be addressed.

BID added to the idea of birth certificates not being so easy. In Latin America, the name of the father comes first and then name of the mother. This is not the case in Europe. One of the challenges found is in civil registration, where it is difficult because of different representation and many different forms, are sometimes done at the local level and are not computerized. As part of BID’s work on identity and
identification, we have developed an elaborate glossary of terminology just on this, with peer review by academics, government, civil registry, etc.

The Chair added that it gets worse with double citizenship.

Chile gave more details on the civil identity card and noted that it does not always match the name used by the individual. The question becomes which name is correct.

Colombia shared its experience with semantics. From the government point of view, we created a level playing field to facilitate the classification of information. It was useful to create this internal info-sharing but it does not work for meaningful communication with the citizens. What we found was that there are useful models for technical parts but not so for semantics. They could not necessarily be combined; they have to be separate. It is more complex.

South Africa commented that what the structures of semantics does is to try to find an intermediary or a way of interpreting data. Some agencies for instance have four sets of data fields required, while another agency only uses three. This works so long as the three are the same. Should we come up with the middle ground way of communicating and others can add other fields but the foundation should be standardized.

Chile responded that we have APIs and we should not try to standardize how to name things so we should not try to force all to use the same ones. So use whatever you want outside, but use APIs inside. With time, colloquial terms will change and what you write may not be useful. We should reflect humankind rather than try to shape humankind.

Chair offered that semantics is mapping concepts to names. We cannot impose a single conceptualization to everyone. For example petroleum means different things, as what can be extracted and is economically viable, or what is its composition. Both users of these terms do not want to change the term they use. So we need a precise link between the two so we do not impose an inaccurate conceptualization.

Serpro illustrated with another example with an entity that is called 13 different things by different people. For example when the government is planning they call something an administrative unit. But the budget folks call the same unit a different name. Another example is when you want to compare budget info with human resources. Great effort for something that should be simple.

Chile consultant shared yet another example on purchasing that had problems due to semantics, for example if you want batteries for the car you would get a listing from the kitchen. Let us look at history of Rome and Ceasar who wanted to be king. Once he dropped the word king he got the power and now the head is called Ceasar. The real way to solve the problem should be APIs.

Mexico stated that while semantics problems are complex we need to make sure we do not add complexity to services to citizens. It is like being at the supermarket where you see too many products. It destroys value in the market because it becomes too complex to decide what to buy. In some cases people end up not buying. Similar to phone companies that offered too many options and thus confused people. It is really important that the services that we offer do not become as complex because people prefer simplicity. If you ask too many questions with too much specificity, you might destroy this way of communicating with them.

Chile shared a different point of view using facebook’s growth as an example. There are lots of applications and ways to use them. People have figured out how to use them. If you offer at least one way then they know how to use, they will latch on to it. The other parts they will not use. On facebook people use their own words, choose what they want to do, on the same platform. Be careful to not over-structure. What we want to do is provide a platform.

IBM offered that the issue is where you set the standard is important. If you set it too high it might get too complex, but set it lower at the API and framework level then you can innovate on top.

The Chair shared that the interface should be as simple as possible but the mapping should be as complex as needed. Looking at organ donor acceptance rates in culturally similar countries, the results were very different depending on how the question was asked.

The Chile consultant brought up two areas: 1) public servants who need to get information from citizens may ask questions that they do not need for the transaction; 2) how to put into an information system the obvious context; how to build the obvious context into the IT system.

Chile asked whether many users use it like Wikipedia: the more we interact the more contacts and the more complexity. So do the same users have to define the concepts or we have the tower of Babel.
The Chair politely disagreed that we might have realities in our mind that we cannot share. We should build islands of consensus where we understand the concepts and contexts. If we all have different ones then the ties we need to build would be enormous.

The Chile consultant recalled the Wikipedia example, but is it top down or bottom up. In Facebook your name might not be legally correct. But for many transactions between citizens and the State, a legal framework is necessary so it might not be as simple.

The Chair also reminded us of other examples where semantics is challenging, like in period after the 9-11 attacks. There ensued a big discussion of whether it was one event or two events as this had enormous insurance implications.

BiD offered that we all have many identities, and legal identity is just one. We might not use that legal one on Wikipedia or Facebook. People have a number of e-identities. Are we discussing interactions between citizen and government or the wider interoperability of communications? We could continue here for days but we should define our own context.

The Chair responded that we are talking more than the relationship with citizen and government because the issues will manifest themselves in these.

Chile added that if we do not consider the larger issues it might come up later so we should address both issues – government to citizen, government to government, and citizen to citizen.

The Chair shared that in the past we are used to building isolated systems and schemas that represented single conceptualization. He asked if there is awareness that the models they use to use no longer work. Are they being trained for the new interoperability?

Chile responded that yes these were isolated but by talking about interoperability you can move to a new system without abandoning what you learned. Look at web services for example; you just need to figure out a way that you and I agree on what we share that we understand it. You can keep your closed environment as long as we can map those shared services.

South Africa said that you need a paradigm shift. Looking at SOA for integration but it is more than that as you can re-use different parts. So you need to do some training on the idea of re-use and add to this training on enterprise architecture.

In Colombia we needed training and we used a different word, not interop but collaboration. We changed the concept. We say you must collaborate with another agency to share knowledge, info and perhaps change how you do things. The public servant is a difficult person so we have to change their way of working. We have another strategy that people have to share their information services. If an agency has information, they must put it in a directory so that any agency that needed it can get access. Rather than thinking what I need, we change the thinking to what can I share.

Serpro offered that the idea of Web 2.0 and active information sharing rather than the old passive model. The main focus is to share this new vision of government. We normally think of only our needs but now we need to think of the other person’s needs. It is helpful to understand dependencies.

Egypt said usually the question is do I study hard and make all the right decisions and then make connections or do I make the connections quickly maybe you miss some of the semantic mappings. I recommend that you do something quickly and then fine-tune. It might not be the best but at least you have something up and running.