**What is open innovation?**

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So, what is open innovation? Let me give you a definition and discuss it a bit more in detail with a bunch of examples.

Open innovation is the purposeful use of inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation. It actually has five key components. First of all, it involves the use of inward knowledge and outward knowledge to accelerate internal innovation processes and also make it available for outside usage. Basically, it’s about opening up the innovation process.

Now, why would we do that? Because it obviously involves risks as well. Opening information to someone that involves potential risks. But nowadays, it might be a key way to accelerate and spark innovation. When you think about it, innovation is something very difficult to manage and guide, and to spark as well, because it's about ideas and new ways of doing things, this is something which always involves a lot of different perspectives on these particular problems. Otherwise, it simply won’t grow or accelerate, so in order to manage and spark it, opening it up might be the simplest option.

The question is, how is that done? One of the most prominent examples currently making waves and being used quite widely is opening up data. When you think about opening something up for knowledge intake, and giving knowledge out as well, probably the easiest option to do that is opening up data because knowledge is also quite a tricky concept. We can also think of this problem in terms of Open Data innovation. Open data means giving access to your own, your institutional, or your government data to whoever — to the public, journalists, companies, startups, and other nations. It's not limited to any type of actor; it's putting it out into the public realm.

How will that actually work? If you Google around and look at open government data portals, this is one example of how it is actually being done. If you look at the Estonian version or you look at other European countries, these tend to be quite extensive. You can go there and access data that the government has collected and made available with specific meta-information for people to use it, because you obviously need additional information on the information. So what is it about, what do the numbers you have there mean? You could also do it for different types of technical information, like technical information system logs, which is done in some countries as well, this is a bit more narrow but the same logic applies. Simply putting it out there with the hope that it will be used and someone will add a bit of value to this.

So how will opening up data actually spark or accelerate innovation? Maybe in 5 different ways. First of all the guiding principle behind it is, obviously, simply ensuring transparency. Transparency, in itself, will not necessarily start innovation but it is an important guiding principle. If we think about what transparency does, it actually levels the playing field and levels the information field as well, and by doing that it makes certain types of things that are usually blocking innovation less likely, like corruption for example. All this corruption, in essence, is basically information asymmetry, someone holds valuable information which they can use for their own particular gain, without giving access to others and this is the essential mechanism of corruption. So transparency will help us to fight that a bit and when there is a more level playing field, by definition, all kinds of ideas have more room to emerge as well.

If we look at actual ways that open data creates innovation, through this open innovation process, then maybe the second core way it happens is co-creation. What does co-creation mean? It means that someone takes this data which is now out there and turns it into some kind of application or some kind of analysis, that the data owner hadn’t really been thinking of, or wasn’t using it for this particular purpose. Why? Because they have collected it for their own institutional or state functions which have been fulfilled. So you simply put it out there because maybe now someone else can start to do something else with it. A very prominent example of co-creation is a famous Chicago food inspection case where restaurant inspection processes were made much more efficient thanks to information being put out there as open data and the community that was interested in this particular problem, because it’s essentially sort of a data problem, how to make inspections more efficient, more precise, more useful, created an algorithm which predicted places where inspections should happen because the chances are that certain violations may be happening. A nice example of co-creation, meaning a particular problem, from an institutional point of view, was solved by actually partially getting knowledge from the community on board, and the result was basically a big improvement of pre-existing services through co-creation with citizens and the community.

The third important way of how it is accelerating information is simply sparking new business models. Now how does that work? Essentially a bit similar to co-creation because business models are slightly different, it’s not simply providing public value but it’s providing private value for companies as well through monetising public information, but monetising in a very particular way. Let me give you a couple of examples again, which are working much more widely across different countries. Different business registries collect information on businesses and make it publicly available as well, through different services. If I am now a small or medium-sized business owner I would like to know information about my potential contractual partner in order to actually sign a contract with them and start to exchange either services or goods. Now before I do that I would need to do a bit of due diligence and understand that actually I can trust this other partner. If you are a small business this might become a bit more difficult for you because you essentially need to fetch different kinds of information from different places on your potential future trading partner, in order to understand whether this is trustworthy or not. On an abstract level these are costs that I am incurring because I need to do this in order to sign the contract. Now, there are actually multiple kinds of businesses that take this public information and turn it into a business intelligence report and make it available to me with some sort of subscription model and as a result, if it’s really sort of rolled out across the society and it’s being used, what it actually does is it lowers contracting costs for all. This is because you don’t need to check so much information, you don’t need to consult so many lawyers before doing something, and because the information is simply out there as a service in an attractive package and I am willing to pay for that because what it actually does is it takes raw government data and adds value to that by actually doing a bit of analysis on that and presenting it to me in a way which is useful for me. Raw register data might not be so easily usable for me because these are huge data sets which not everyone is able to use. So these types of business models actually emerged because data was made available.

The second example very widely considered or used is all kinds of data from healthcare or social services because, when you think of specifically healthcare, patient information is very useful for thinking of new treatment regimes, maybe even trying to do a bit of new drug development. So making this patient information available, obviously in an anonymised format, but still available, might actually reduce the costs that otherwise companies or societies incur when they try to test new ways of how to treat people. Again a very easy sort of way to add additional value data by simply making it available and society should reap the benefits

Fourth element, how it sparks innovation is basically it forces institutions to be more efficient, internally and maybe externally as well. What do I mean by that? Internal efficiency for example, when you think about it, public institutions usually have a responsibility to respond to citizen queries by journalists, or any interested party that has a right to request information from the government. When a request comes in, someone needs to deal with that request. Meaning someone needs to do relatively repetitive work and respond to those queries by fetching this piece of information, which is by law essentially public information, and forwarding it to a concerned citizen, journalist or company that needs some form of information. Now, ferrying information between two actors is not a very efficient way of spending your time so why not simply make it publicly available, even though by law it is already public information, but make it technically publicly available as well, and as a result the need to respond to many queries in a repetitive way actually falls away and the institution will work in a more efficient way basically. Also in the same way within that institution leveling the information field, think of all the different kinds of dashboards which are nowadays quite popular, these are not necessarily a strong innovation but the logic behind these is the same. Previously when we needed to fetch that information we went on the same level information playing field, so if you need to make a decision in an organisation that is structured into many different departments and the heads need to come to some sort of agreement, when everyone is operating with slightly different types of information that is actually a bit problematic. Whereas when they can open a dashboard, when it’s a public dashboard as well where the same type of information which they need to make this decision within the organisation is actually already public then by definition they are already looking at the same type of information. For an organisation this makes internal processes much more efficient because no time is wasted again arguing about “wait a minute I have this information, why do we have slightly different numbers?” So this essentially comes partly automatically when information is being opened up.

Maybe the final point is simply, or the final, let’s say, wish, and how it should essentially result in innovation, is to create better services by adding publicly available information to your own services. We know societies are quite complex phenomena, so especially when governments need to work on different types of prevention problems, like preventing crime from taking place, preventing fire accidents from happening, trying to make society safer for example, then public information merged with information or data which is not so public, tends to provide additional value to the data that is privately held as well. I mentioned fir risks for example, this is something which is very costly to society, so if we could, for example, predict this a bit better, by using publicly available weather information, regional information, geoinformation, which tends to a large degree to be public as well, and merge that with information that institutions hold on the state of buildings or something like that, which in most countries is not publicly available information. Then actually this particular institution which is tasked with prevention, makes these decisions with better information, like this public realm geoinformation, and usually tends to be adding precision to these models that are needed in order to predict certain risk scores and try to prevent that through targeted interventions. So adding freely available outside stuff tends to make your own decisions better as well, so better services.

So to wrap up, the logic behind this, although it might become technical at certain points, is actually relatively simple. We need to manage a process that seems to not be so easily manageable, that has a lot of creativity in it, innovation like new ideas, so that we are maybe better able to manage it and spur it and accelerate it by letting it manage itself by opening up. Opening it up, opening up data mostly, means that someone else who has some other problem, or has some idea about this particular data, will come with this idea and test it out on the data and as a result we have something that wouldn’t have occurred otherwise because if I’m sitting on my data and not opening it up this other personal business, or start up, or journalist wouldn’t be able to test or wouldn’t be able to come to this particular idea because they weren’t aware this time of data exists or is publicly available for them to test their idea. So managing or automating this innovation process by simply losing control over it, opening it up, that is the core of open innovation, either a process or product will come out of it by simply making access to the data, that could guide this particular process or product in the future, available in the public realm.

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