Q: How would you briefly define circular economy and sustainable consumption in one sentence each?

A: I’d define circular economy as a new economic model for addressing human needs and fairly distributing resources without undermining the functioning biosphere of crossing any planetary boundaries. Then in terms of sustainable consumption, well honestly, I would say it’s quite a similar thing in a way. It’s about not consuming beyond your fair share of resources, considering not only who else is alive on the planet right now, but also future generations. If you do consume something, it has to be either regenerable for future generations, or recoverable for that purpose as well.  It’s a moving target in both cases, because the system we work in is changing, so tipping points are sensitive to the current state of the system.

Q: How do you explain the key characteristics of the future circular economy to others, relatives or friends who have no idea what circular economy is?

A: I usually tell them to read something that we’ve written. One of the easiest metaphors around circular economy is to talk about a natural system in relation to the human economy.

Consider the forest, there all kinds of different species within the forest that all occupy different trophic levels and resources are cycled through different actors, so nothing is necessarily designed in such a way that it cannot be recovered or re-used in that system. The basic idea is that we have designed an economy that has some aspects of an ecological model, but we’re very bad at the recovery aspect, so we create a lot of things and then no longer go further, and we need to get better at the break down and reuse of many of these components. For us, the material cycling side is just a single point, an indicator, of how that economy is performing and it’s actually by far not the only aspect of what is important for circularity, because you can have small children taking a part in waste over hid fires and over valuable precious metals and that doesn’t fit in any sane person’s definition of circularity. Likewise, you can extract a huge amount of resources from the environment in very damaging ways, undermining natural capital, and again you’re technically not violating any ideas around material use and recovery, but that’s certainly not circular. So, there are all these systemic parameters that have to be taken into account and that’s where we come in with planetary boundaries as an edge condition as well as fair distribution for human needs as the other edge boundary condition. So that’s roughly how I would describe it, I mean I could talk about it for hours.

Q: Imagine a truly circular economy, how would consumption change and why?

A: First of all, it depends on the circumstances. The rest of the planet, how many people are living on it, that’s a big factor, but if we are considering our current trajectory and the current population, then I do think that based on current technologies, consumption levels will have to go down, because we don’t have enough resources for all the different uses that we are applying them to at the moment. There are ways that we can deliver the same services at much greater efficiency, so that’s something that definitely has to happen and certainly is on its way, but we’re not focussing on increasing the efficiency of the correct things within the system. Also, we’re focussing on single elements to optimize within the system, rather than the system as a whole. As an example: instead of optimizing the way, urban planning is done, so that demand for mobility is structurally decreased, we’re focussing on increasing the efficiency of vehicles, which is the wrong part of the system to be optimizing and that goes across the different industrial activities etc. So we’d need a completely different system design that structurally decreases demand for certain types of consumption without decreasing the level of service and needs that are fulfilled through products designed in the economy, and then everything would have to be designed in such a way that it’s fully recoverable within the right time scale.

Q: We’re going to talk about the future circular economy now. You’re working on circularity; can you tell me a bit about how you’re implementing that and what role the business model plays in that?

A: We’re working a lot with companies that are aiming to implement circular approaches, and ourselves in terms of some of our own projects and a circular business model is quite essential. One of the issues is that the current financial systems aren’t necessarily designed to support circular initiatives or projects. Case study that I can think of is for example, Schiphol Airport, they are one of our clients, and they’re essentially a real estate company. They build a lot of real estate and vent it to different users. They have a lot of physical fixed assets in form of these buildings. Right now, the way that accounting works, if you build a building it has a certain value and you define what the residual value will be (at the end of it’s life). So, you subtract that starting value and then you have the amount that you can depreciate from you balance sheet, which actually means that you pay fewer taxes. That’s beneficial for Schiphol’s current accounting, because they can depreciate millions of euro’s per year, based on these real estate assets. If they designed them to be circular and modular, it means that their residual value goes up very high, that means that they can sell all the different parts of the building at the end of its life. That means you subtract the starting value and the residual value and you end up with something very tiny that you can’t depreciate. That completely changes the profitability of the company. It may not work at all. This is just one example of many, having to do with accounting, that you need to figure out, because in the future we value money at a lower amount than in the present. That’s structurally designed in the way that we calculate accounting. That’s why net present value calculations exist. It makes circular business models handicapped. Either you have to change the entire system to change these incentives and make them function differently or you have to figure out certain tricks where you redesign the way that financial flows are working and you still manage to make this profitable. A lot of the time what’s needed to kick-start a successful change of circular business model is initial capital investment, so you have to buy a lot of this equipment that you’re going to be leasing to start with, and instead of selling it all at once, you have to adjust to getting a yearly amount of money. That is actually better in some ways, because it’s predictable and stable, but it means that to be able to upfront make these costs, one cycle of this is needed before you have enough profit to do this repeatedly.

Q: Can you think of one example of a company where you helped them implement aspects of circularity and can you tell me about what should be the next steps to achieve full circularity?

A: Yes and no. A lot of the things we do at companies is look at their resource flow systems and what’s going on currently. Some of that stuff is under non-disclosure, so I can’t really talk about it. Maybe one of the cases I can talk about very easily are with building projects that we’ve done. For example, we worked very closely with a neighbourhood development. We defined circular building criteria for this housing development and we basically defined these instructions for each of the architects that were designing the houses and then they used those to come up with designs. The designs themselves are at a very high level of eco performance, so in many aspects the circularity is taken into account, if you not just consider recycling. The site is also going to have a very unique sanitation pilot. Now the key question would be; to what extend are they able to implement circular design principles in the construction, whether they’re able to really do design for disassembly in the construction process. It was very hard to find construction companies to participate in this experiment. A lot of the time you come up with a theory and it’s not even technically impossible, but it’s really hard to find people to execute it. Certainly, there’s progress on many fronts, but if you’re designing for research recovery and changing business models etc. in actual projects, people are just overwhelmed with the lack of time and resources to do it.

Q: How can circular business models lead to sustainable consumption?

A: If you provide people sustainable things to consume, then the consumption will be sustainable. Just because you use a circular business model, doesn’t mean that it’s actually going to lead to a better outcome in terms of an absolute definition of circularity. People often talk about how leasing is super circular. That’s not true. Leasing is just leasing and if you have a circular product system design, it could help, or it could not. You can take into account this case study about leasing pants. For us, it’s a bad example of using leasing, because pants are made of an uniform jeans (cotton blend) in particular. The costs of having each pair of pants shipped back to a central location rather than depositing them somewhere in a common stream. You can have circular business models applied to certain products that are not going to do better in total performance, in terms of material recovery, material complexity, energy etc. So if you have a sustainable product system that you have defined and designed, consumption will be more sustainable. Ideally, you are also encouraging more sustainable consumption. Not necessarily less service delivered to the consumer, but less material.

Q: What do you think will be the key differences in the way business will be done in the circular economy from user or consumers perspective?

A: Again, this depends on whose definition of circularity you’re using. Within a circular economy, ultimately, there shouldn’t be any ownership of materials. That means companies should not own materials either. If companies only lease their products, you will end up in a very imbalanced situation. There will be a few companies that own all of the key resources and get to do with those resources whatever they want. That’s not an ideal situation. I think that the neo-liberal capitalist gross model is incompatible with a circular economy. That means that exchange of goods and resources will look entirely different in a circular economy. I would imagine that recourses will be in a common pool that they can be used in different types of products by anyone, if they follow the guidelines of circular development, but they will have to return the resources to that pool after a certain amount of time, or be available to put back into resource circulation. The exchange of goods and services possibly happens through entirely different means, a different form of currency. You want to be not encouraging rampant consumption and you want to ensure there is a basic distribution of goods and resources. That doesn’t mean it has to look like a communist economy, but it’s just a different model. It’s about creating new ideas rather than designing stuff just to sell huge volumes of it.