V: The first question of the first part is the understanding of the circular economy. How would you briefly define circular economy, and sustainable consumption, in one sentence each?

C: Two completely different things I guess.

V: You can put them in one sentence each.

C: I think about circular economy, the word there is circular and the other is economy. Circular means to keep materials in the system as long as possible. Trying to avoid that we have to use resources that are still in the ground so to say. And economy gives you the sense of economic perspective as well so to say. That means it is not necessarily sustainable, because social aspects are left out of that. So more in detail, circular is in the narrow sense related to reuse, good maintenance, prolonged use, reuse, remanufacturing and refurbishing which are two kinds of trying to keep things longer in the system.

V: That is a very long sentence.

C: I am sorry.

V: No that’s fine.

C: And then all the way down to recycling. I guess you can ask yourself is it the same as cradle-to-cradle or not. I guess for many people it is. So why and how do we move from cradle to cradle to circular economy, that is an interesting question. Is it just marketing things, or what kind of hot terms that maybe we will have something in five years. Sustainable consumption is, I guess, much more that has to do with more responsibility to the users. Circular economy is like: it is fixed, but how can we do it in a more circular way whereas sustainable consumption is more maybe about changing the way we fulfil our needs. Circular economy can be both, I don’t know, I don’t like circular economy necessarily, I would never have used it myself as a starting point but now that it is all around this term I kind of have to hop on that train.

V: Then the next question is how do you explain the key characteristics of the future circular economy to others? So really of this ideal state of circular economy, to people who don’t really know anything about it. To relatives, or friends.

C: I usually say what I said just now: reuse, recycle, refurbishing, remanufacturing, trying to keep materials, because it is mostly for materials right? Try to keep that in the system. What I think is interesting is: is it a technical issue, because for example sharing economy as a part of circular economy, that is more like dematerialization that we use less products but I guess in the narrow sense that is something completely different than circular economy. So circular economy is a very narrow term, although I think generally people understand it in a wider sense. And anything related to production and consumption which is good for the environment, is that circular economy? Not to me as a scientific topic but as a marketing term maybe yes. I tend to be a bit ironic when I communicate circular economy. I have to learn that I think. I am also very sceptic because more than 15 years I wrote my thesis and that was called end of life, it was political, technological assessments of how we produce, use and recycle products. But it was not called circular economies. I am also trying to understand a bit what is the difference between what we did 15 years ago and what we do now.

V: Why is circular economy now such a big thing huh?

C: Now the environmental awareness and the climate issues are much more prominent and much more agreed upon that it is an issue. So that is a new context for the same topic.

V: A higher interest maybe as well. Then the next question is imagine a truly circular economy. How would consumption change and why?

C: People would not desire new products as they do now. It would require a different perspective from industry, it would have other models of making money. Those two things mainly. And infrastructure would be even better than today to exploit materials but not the complete product or product past to make sure they end up where they have most value I would say.

V: So circulating materials products, back to the consumer.

C: From the consumer perspective, the industry perspective, an economic point of view, and it is an infrastructure and I guess also politics who then would be setting clearer boundaries of what is allowed and what is not allowed. They of course have problems with making general guidelines, circular is not always good. We should not keep televisions which use a lot of energy in the loop because you lose less. That is interesting right. Would you want to use much more energy to keep products longer in the loop. That is a complete sustainable assessment issue.

V: I think it is often about how you assess it. What do you measure, what do you take into account. And then depending on that you can truly develop it.

C: Circular economy in itself has very narrow system boundaries. And it has to do with scientific and political priorities. Is it CO2 emissions vs scarcity of materials? I think circular economy is very much scarcity of materials oriented. And if you really put that idea forward it might be at the cost of other environmental issues. So that is the question: can you do everything in one go, optimize, or do you need to go and sub-optimize some of these concepts. I don’t know but people who do complete life cycle analyses can help us to prioritize.

V: They we are coming to the second part. The second part is based on the sustainable business model, and there are three parts to the sustainable business model. There is the value proposition, then the value creation and delivery and finally the value capture. Each of them have different elements, but I will see what you talk about and otherwise I will come back to these elements So value proposition, this element refers to the value the firm offers to a specific target customer segment. The question is, how should companies shape their value proposition, when implementing circularity and sustainable consumption?

C: Value propositions only include value if you offer something that your customer is willing to pay for. So that is completely the same during circular economy or not, you always have to take it into account. What users want, or what they need. Sometimes as a company you react to a certain demand, and sometimes you create a certain demand because people might not know what they need. And you can do that by watching trends and interviewing people and having good marketing departments. So understand the market that you are targeting for acquiring your value propositions.

V: So how do you think these value propositions, for example products and services, are going to change in the transition?

C: Well, I think that in general the whole economy and society goes into a direction of convenience where convenience comes more important than things like ownership, which are more traditional concepts, and that gives opportunities to creating different kinds of value propositions. Things like status is interesting, because those in today’s way of thinking on average means acquiring new products. Maybe we can change that that it gives status to shop second hand, it gives status to share things, it gives status to actively recycle and it is interesting to think: is this something of a company’s responsibility, is it policy, is it municipality’s that play a strong role, is it education from the kindergarten and up. I guess it’s a slow process and here as well, do you optimize, do you have the ambition to create this ideal society right away or do you say well okay, one thing at a time. That would depend on society from society. In a totalitarian regime it would be easier to get things, but this is the general democratic western society so to say. It is an interesting question, how much can be steered, how much can be directed through interventions. Taking responsibility and how much can we just accept it is a very slow process?

V: And do you think the relationship with customers should change or will change in that process?

C: It is already changing, I think.

V: In which way? Of course it is also related to the different service offerings or product offerings, but how do you think it is going to change?

C: If you take something away, like ownership or the newest thing, you have to offer something else. And that is probably apart from convenience. If you offer convenience rather than a functionality, that gives a more social or emotional relation to your customers. Not just technical. You offer services, you may be more often in contact with you customers. If it is about maybe, why do you have company’s keeping ownership of the products they use? It keeps it for them interesting to keep them in the loop and not make money out of selling more new products. You have to increase the emotional bond with you customers.

V: And what do you think the value proposition for the environment and the society be? So we talked about the value proposition for the customer, but what could and should this for environment and society be?

C: So do you mean a value proposition from a company, to a society?

V: yes.

C: Is that so much different? The interesting difference there, is if you have direct contact with the customers you cannot greenwash anymore, you cannot trick them into anything. But creating a brand, an image for the company to show how sustainable we are, there is always some degree of unethical or not unethical. That is a thinner line, you can pretend to be sustainable, and you can succeed into people thinking you are sustainable, if you are approaching the market or the society or whatever. But it is harder to do that on a one-to-one customer company relationship. So you should see to that it is sufficiently aligned, otherwise you shoot yourself in the back so to say.

V: So being more transparent so that customers and society see what you are actually doing.

C: But the question is also a bit of a chicken and egg problem. Do you build your image and the way society looks at you by having very good individual contacts or do you first start to create that brand company level, targeted to society, before you reach individual customers. I guess it is a parallel process. It has to be aligned.

V: Then we are at the next part, and that is value creation and delivery. So in the business model, how is value created and delivered, and the question is how do you think companies should create and deliver value in the transition to the circular economy. So it is about the activities, resources, distribution channels, partners and clients, technology and product features.

C: I guess I already mentioned some of those things like keeping ownership on products, a company is getting more incentives to upgrade than to sell new stuff, spare parts, logistics, knowledge that your employers have about traditional ways, an overview of product lines across time, and I don’t know. You talk about product services like a main goal. Are there other concepts that are sufficiently different that will become equally important? I am not sure. Will companies be involved in circular economy activities? If you think about sharing economy. Things that will be shared are produced by companies, but will they be an active part in the share economy or nor or can it be without companies, is it even better without companies? I guess it all depends on the product in your hands, but also what will be the ideal thing. I am kind of hoping for at least two or three important or interesting concepts next to just product service systems.

V: That is what I am trying to see, what other things could there be. So for example for activities you said of course how distribution is done is going to change, and reverse logistics. Key resources you already touched upon a little bit, so you said that the employees should be more knowledgeable, and that resources might stay longer in the company ownership. Can you think of anything else, tangible or intangible resources that needs to change?

C: Information about what the customer wants. Perhaps you need more insight in what people want now and what they need in the future and what they need to change. I don’t know too much about it. When you are selling iPhones you need to have information about how they experience the iPhone now, what they might be missing, and look at trends how social media develops, and how people like to be entertained, and where, but that is all with the idea of a physical product in your hand. What if apple would be a truly circular economy? So this is about trying to take back Iphones and remanufacture them and put them back in the market, talking about the Lucy’s and Juana’s topics, if there is going to be something else next to product service systems, you need information about things that you don’t know yet what that is. It could be that company’s need resources based more on philosophy, more futuristic perspectives, back casting. In the nineties when PSS came on back casting was often used, now you don’t hear so much about it anymore it was a new feature in society. I guess thinks like trend watching, not only how do individuals react to technology but how do groups and societies and neighbourhoods and families, how do they act, what are the practices. They would need more insight in that, and probably some external help to break away from locked in ways of how to look at it. Maybe I am just not preaching in my own parish. That is of course what we want to research.

V: Okay. A colleague of mine also researches how groups of people react to technologies. Do you think the distribution channels would and should change in the transition? The channels themselves.

C: I guess so. Going back to product service systems, do you buy them in a shop? Anyway consumption is changing and retail channels are changing and people are doing a lot of orientation first on the internet before they go to shops. I guess internet will be much more relevant here. I was thinking now about the salesmen that come about my house selling alarm systems. I feel like I don’t like you coming into my house because I experience you as some eastern European person that wants to do chores around the house or they want to make paintings. But he said, how do you think I can sell my stuff in any other way? If I ring I will be an irritating phone terror, and people don’t just go into a shop just to buy an alarm system. They need to be made scared somehow, you ringing my bell doesn’t help me. So it is interesting how many sale channels can you imagine? Physical shops, door to door, internet buying, what other things can you think about? I don’t know, community fairs, fairs, might be an interesting paper actually. How many different channels of retain can you specify which are sufficiently distinct, and then which ones might be under or over exploit, and can you think of maybe completely different ways to make people aware of value propositions. It is also a fundamental question do you want people possible way to fulfil their needs, or do people themselves become aware and then actively look for ways to get it.

V: Does it depend on the amount of marketing.

C: Yes, but because marketing is usually about: here is the functionality as a value proposition, be aware that it is available and preferably buy it from us. That is one thing. Consumer initiatives, marketing there is the other way around. Maybe creating new ways for those that offer and those that want to acquire meet themselves. Physical, yes, digital, yes, in a fare kind of setting, yes. You have the company websites, but you also have Ebay where demand and supply meet each other without the company being in between but that is not what you ask. I guess there we haven’t seen the end yet of how that develops in the demand and supply together. The question here is it is not just demand and supply, it is different things to supply, trying to match that with those who not yet realize that they can demand other stuff than what they have been demanding so far. So you have actually three unknown variables. You have different kind of demand, supply, and meeting place where those should meet. Not consumption practices but economics practices that need to change. I am thinking about Elizabeth Shove and her social practice theory but this is more economic practice theory or exchange of functionality change theory. There are probably people that have been thinking very intelligent thoughts about this.

V: We have the distribution on one side, and the partners and suppliers on the other side. What is your idea about those, what should change there in the relationship or the role of the partners and suppliers.

C: You mean in sense of supplying parts to companies that put products together?

V: Yes or for the company the partners at both ends of the supply or manufacturing chain during the entire process and then suppliers that supply parts or also services.

C: That also becomes more complicated. That is not just ‘I want, you supply, pay, done’. It are also relations of trust, relations of understanding each other’s needs. But also possibility. Competence and capability in a broader sense than what is more traditionally seen as the core competences of a company. Keeping track of where things are, just on time deliveries, which are of course all known concepts. But I don’t know, lean, agile, not just of getting the right parts there as they need to be. But people and information needing to be where it is I guess. It is pretty linear so far, in a linear economy, information goes from supplier to manufacture etc. Nobody really needs an overview of the whole supply chain. Whereas if you want to be novel, innovative and optimize a system where not only physical things but also information and data and so on is just as relevant, you need a better flow throughout the whole chain. It is also a question how you store insights about what customers want. Is that text, is it video, sound, is it visualizations, that might be interesting also. That might need to change.

V: Technology and product features. How should they change, and what can be their role in the transition towards the circular economy?

C: That is a very broad question. Can you narrow that down?

V: No if you can tell me with an example. You talked about the tv.

C: information on products, how to recycle them, where to go, what are your opportunities, of course there you have to distinguish between questions that people wonder about that they have anyway, and then there is also information that they might not know is relevant to ask.

V: So use information technology to save this data and to have information about these individual products.

C: I think about telephones now. There might not be so many people that think okay I bought a new Iphone, what can I do with my old one. So it might be important to have information not only on a marketing campaign but also on the product itself. A lot of information on the packaging and people throw it away and don’t know what to do. And some people don’t want that information. I have all my old mobile phones because I like to see how life was before. I might be motivated to return them for recycling or refurbishing if something is in it for me. But then I would need to be aware what alternative could be in it for me compared to the fun of having them. It would be the type of feature that you might need but I can also imagine that you say well if you are going to make phones or other products that are designed in a way that exchange of parts or figuring out which parts are critical to the longer survival so that they are easily accessible and people can easily repair them themselves, right now products are often designed so that it is impossible to repair themselves because a company wants to avoid liabilities. That people first try to repair themselves, and they don’t succeed and then they send it to the company for repair. Obviously companies rather repair it right away, or operate them right the first way but that might be different for different product categories. Some product might be so simple that you can design it in such a way that upgrades might be done by the users themselves. So I guess user friendliness in home reuse, recycling, manufacturing and upgrading might be something that we can see more in products.

V: Yes that is an interesting idea from product features. And then maybe also use technology to inform the user more. Okay. Then we have covered all the elements of this aspect. Then the final one is the value capture. This is about companies capturing monetary and other values. How should companies capture value to achieve circularity? It could be about cost structure, revenue streams, value capture for other actors, and also the growth strategy of the company.

C: Again very broad question depending on what company and industry you talk about. I guess in general you come to stereotypical thoughts. Of course by capturing value from services and selling experience, convenience, emotion rather than selling materials as in products. Making material manifestations less important in favour of others will make it less important to sell more materials and it will make it more attractive to take materials back into the system. If you can offer me as a company a experience of providing a nice free poster on the wall of all my phones that I had rather than those phones physically in a drawer. Then I would in a much easier way caress that feeling of what my life has been phone-wise than looking at what drawer I had put them in, and I would be willing to give away those phones which would then help circularity of materials. So if I would have to give one answer, getting value from selling emotion and experience and functionality rather than just material.

V: And how could that change revenue streams? The financial revenue streams, of course the customer pays for something different. How do you think is that going to change the frequency or the way of revenue streams.

C: The money streams are divided over a longer period of time, through subscriptions, not one time purchases and something but a little bit every month. I guess if the circular economy really hits that part suppliers and material suppliers won’t need them anymore. Ideally all mines would close in the future, but then I guess new industries might pop up that are specialists in creating these experiences, and these feelings of having a better life, of getting a better deal.

V: The value capture for others. We only talked in the beginning about value proposition for others, how is value captured for the environment and society? So what is suggested, what is the company saying what it does, but how is it actually captured and how it may also be measured in the end what the companies have done for the society and the environment.

C: That is a good question because do you do that by comparing to the previous situation? Now we have a circular economy because we have used 40% less materials and we have increased our income. Is that one way, is that fair? We don’t compare the performance of our televisions to the televisions of 20 years ago. That is autonomous technology development where or where greenwashing then becomes important. I guess being circular or not can be very factual, just by saying we have used less raw materials.

V: Which is then good for the environment because you take less, extract less.

C: But what lies behind such a statement? Can you measure that in different ways as well? Can say we have increased the amount of happiness amongst our customers or social partners or governments by reducing their bad conscience, is that important? Let’s be honest, climate change and environmental issues and so on, that is a subjective problem. I read somewhere that earth would not like anything more than to eradicate all humanity by climate problems. It is a self-cleaning principle, but problematic for us then. Sometimes I think the best way to solve the whole climate problem is by indoctrinating ourselves that we do not have one. But I guess there are some universal values. It is good to have dry feet, something to drink, not too dry, not to watery, it is nice with a bit of wind, not when it’s stormy.

V: it is nice to not have natural catastrophes more.

C: one’s catastrophe is another ones potential to sell emergency shelters. I would always say the answer is very obvious, but it is interesting to see if there are any non-obvious ways to measure success of the circular economy because it is pretty boring stuff and nobody will notice this privately. So if you are buying a well-functioning IPhone five, being very circular, you have not spent too much money and your bad conscience is reduced. But is that enough, because it is not as cool as getting a new one. So how do you have sacrificed something, what have you gained. We need to measure that, and be very careful that we don’t overestimate the benefits of circular economy. If this means less happiness for companies and peoples, how are you going to sell that. Thanks to you, people in Sri Lanka don’t have a tsunami today. That is cool. Is there other ways to present happiness and what I see there is that convenience is interesting. We are accepting less and less privacy, we don’t care so much anymore. We like to give away responsibility to products. You phone being your alarm clock, regulating the energy at home, self-driving cars, all things where we redistribute responsibility to technology. I think if you take this a couple of steps further that it also provides options for circularity. But also completely different, it might be that in twenty years people might say it is ridiculous, that we were all walking around with these individual phones, individual conglomerates of materials. You just need a very simple thing and it is all connected to a sensor processing unit or whatever, but at today we think but then all my information that is all locally stored is then available to others. I think in the future we might be less worried about this.

V: I think we are nearly beyond that, everything is stored in the cloud now anyway.

C: Exactly, but that was not possible ten years ago because people think. Now you put down photos of your babies all over the internet. That also offers possibilities for circularity, if in a way we can capture that.

V: So the convenience might also be a driver in the end. By providing simpler solutions and taking value out of things.

C: For some user groups at least.

V: And what do you think about growth strategy and ethos of companies? Should that change, how should that change, should there be different growth?

C: As long as you live in a democracy I think it is a non-relevant question. I think companies that say we accept a certain level of income so we can pay our employees and maybe change the furniture every 20 years and that is enough, we do not need to grow, it is in the nature of people and their companies. There is growth to survive. The drive to sell more and more and be bigger and bigger.

V: So you think growth is going to maintain, also as a psychological thing.

C: I think so. It is not desirable, I don’t see any evidence for it otherwise. Maybe people that want to go back to zero I am only wearing used clothes and I don’t need more money that I need for buying food. Those will for a long long time be minorities I think. Especially in Norway where materialism and status and consumerism is very prominent.

V: Under the poverty line at 20.00/22.000 euros per year or something. Then we are coming to the next question. This business model part is completed. Do you feel any element is missing in the sustainable business model framework? Do you feel there is any element that is not covered that should have been in there.

C: I think I added some elements in addition to what came up in addition to what came up in the questions. Nothing pops up.

V: Can you think of any outstanding examples which some of these business model elements played a role in the transition to the circular economy. There are many companies who have already transitioned in some of the elements. Can you think of some outstanding examples, and how these business model elements relate to that?

C: I don’t know specific examples. I know Rolls Royce with their airplane engines, or Patagonia with their recycled bottles, a company that sold floor tiles from recycled carpet, and there are many examples but not something that really stands out that would be valuable for you.

V: I know these examples as well. Then you do know these companies, but can you think of one of them and what could they do to really achieve circularity more holistically. They have all done a little bit, what do you think should be the next steps to really reach circularity. If you want you can pick one of them.

C: I’ll pass. I have some aspects but I don’t know if all aspects are always relevant to all companies.

V: It doesn’t have to be about all of them, if you can just think of one of these companies and what they are doing now in order to be circular, or to be a bit circular. What would they need to do to really be circular in the ideal sense of the definition.

C: We sometimes play around here with Ikea as an example. Is Ikea circular, no not really, they try to sell stuff that people bring back because there is a scratch here or there in their cheap products corner. If there are some products that are sold through all kinds of online services, why doesn’t ikea take that back themselves and supply spare parts. Where the problem is, the scratches or whatever, but of course they would bite into their own philosophy because they sell new products not used products. They could do that but should they do that? If they want to be super circular they could do that but they would stop being the company they are.

V: How do you think can circular business models lead to sustainable consumption?

C: By definition they do because otherwise they would not be circular in the good sense. You are not trying to keep products that are worse in energy consumption or whatever. You don’t want to keep them into the system. By definition it should lead to a more sustainable consumption.

V: And then also if you want to look at PSS or sharing, then it is also about consumption avoidance or reduction, reducing the need.

C: I am wondering about rebound effect now. More sustainable consumption. You have this nice cartoon where you have this one family that says we are trying to be sustainable by consuming less. What are you trying to be more sustainable by buying lots of energy friendly products. I don’t remember exactly, but it is mainly what is sustainable by doing the same as we do today but with less environmental impact, or actually reducing the environmental impact by not needing so much as before. Is that truly sustainable, by reducing our needs? We live in a free world, right? Then again can you voluntarily help people to need less.

V: Reduce consumption, avoid consumption, is that possible with a circular business model?

C: Is it only for idealists, or is there a grey zone for people that are not idealistic but open to that. I think you always have to pay something in return in the shape of convenience or emotional stuff or whatever. I did not buy an electric car and I did not take a half year bus subscription because of the environment. That was basically economics, time to work on the bus. And I think there will be a very small minority that will be seduced only by the sustainable arguments.

V: Then the next one, just leading a bit back to the first part, what do you think will be the key difference in the way business will be done in a circular economy from a user consumer perspective. So what will be different as a user or consumer in a circular economy, what will you see or perceive as a difference to what we have now. In the really circular economy.

C: This is turning back to the question of product features. You might receive pointer or incentives or stimuli to help you make circular decisions. So on this bottle says you will get 2,50 back, but not on this cup, but I guess there are things that we throw away for a while for example this mug doesn’t say anything. I guess in a truly circular economy you would get a pointer, so do this with it. Especially if you own the stuff. Now we are in an office environment, the problem is somebody else’s. I think a lot of circularity is not achieved because people are misinformed or uninformed, that might be one thing.

V: So basically the consumer has more information where he needs it on what to do with products.

C: Yes but also get pointer is whatever a phone is saying: deliver this phone for an upgrade back, then you get a phone that is so much better that this one because so and so. And right now if you do it this week so many phones in estimate and they happen to have a very good way to put a new screen, much better, and now there is a window of opportunity because there is a second hand market for these screens and they need these screens right now, something like that. You can optimize better by matching information along different actors.

V: And by using different resources they would basically consider using your phone as a resource.

C: I am thinking about my shoes. At some stage I would want to throw them away because I would want new ones for some reason. But it would be nice to get a marker on them, if you throw them away now they can still be resold. If you wait three months they will be so worn no one will want them. I don’t know, there could be.

V: Giving the option if you are thinking about it anyway, better sell them now that you still get some money. So basically they keep track of that and inform you in time so that you can make the decision do I keep them or do I sell them now.

C: Yes, people have different needs and I guess theoretically that that is a very interesting connection to the different valuables here. It is about information provision, so everything needs to be connected because you don’t know that at the time it is being manufactured, so there needs to be a chip in there which gets a signal from a company that says right now we have found out there is a specific need of shoes for this kind of material and age. And of course it would have sensors then to measure how worn it is because not every shoe wears the same way down. I guess vital elements of a product which make it less or more interesting to use or remanufacture the information needs to be collected and processed and feed backed to the one that is in charge of whether it is going to be reused or recycled or resold. That might be true.

V: That is interesting. I think we reached the end now.