

7

Prosumption for sustainable consumption and its implications for sustainable consumption governance

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1. Introduction: The triumph of the linear input-use-disposal economy

The market economy has turned individuals in Western societies from self-sufficient, low-throughput producers of goods to highly interdependent, high-throughput consumers of goods. It has also turned our societies into massive resource-consuming and waste-creating operations. Dramatically improved production methods offer access to new goods at lower prices. This has shifted the economic logic of maintaining and repairing goods to replacing them frequently instead. However, this development has also turned once resource-efficient sufficiency economies into industrialized overconsumption societies with high environmental impacts. There are two main reasons for the replacement of sufficiency with overconsumption; (1) productivity gains in industrial production processes resulting in increased purchasing power, and (2) sophisticated marketing and sales tactics.

First, since the Industrial Revolution, production in factories capitalizing on technological innovation and specialization have greatly outperformed the largely self-reliant production system that preceded it. It became cheaper for individuals to consume that which other people produced rather than producing themselves. Highly productive factories lowered per unit production costs and increased economies of scale, making their products even cheaper. Furthermore, increased productivity resulted in great increases in gross domestic profit (GDP) per capita and purchasing power (Lucas, 1988). The world population grew from 3 billion in 1960 to 5.2 billion in 1990 (Lucas 1998), while world production grew from USD 6.7 trillion to USD 22.3 trillion. Production per person in real income (purchasing power parity) grew at 2.2 per cent per year, and thus more than doubled for the average world citizen. More productive individuals needed to work less to attain more purchasing power, and thus a large global consumer class with extra income at its disposal was created. Productivity expressed as GDP per hour worked increased from USD 22.30 in 1970 to USD 59.80 in 2016 for Germany (a 168% rise in 46 years), or from USD 31.10 per hour in 1970 to USD 63.30 in 2016 for the USA (a 104% rise in 46 years) (Organisation for Economic Co-operation and Development, n.d.). This led to almost complete abandonment of self-sufficiency in industrialized

economies as it simply did not make economic sense to grow your own vegetables, sew your own clothes, or make your own furniture, compared to purchasing them on the market. Likewise, repairing items became increasingly uneconomical compared to the production of new consumption goods. In industrialized societies, most individuals are specialists, not generalists, dependent on others to produce most of the goods they need in their lives (Toffler, 1980).

Second, increased purchasing power in industrialized economies made it possible for individuals to purchase new goods for pleasure and not out of necessity. This spurred the marketing industry to develop strategies to increase sales of new goods in order to attract this disposable income. Critics go so far as to claim that marketing has changed Westerners' lives from 'consuming to live' into 'living to consume' (Shaw and Newholm, 2002). Marketing, it is argued, has perpetuated the commodification of life in which the market economy absorbs non-market areas of life, equating growing consumption levels with increased quality of life (Kilbourne et al., 1997). Marketing, seen through this lens, thereby perpetuates the ideology of consumerism, with all its negative environmental and social consequences. It is argued that marketing has even co-opted the sustainability debate and turned it into products and profit (Moisander et al., 2010), thereby perpetuating the linear production–consumption model of the market economy (Arvidsson, 2005).

Together, productivity gains, increased purchasing power and a sophisticated marketing industry have created environmentally harmful levels of overconsumption in industrialized countries. Productivity gains have made mass production cheaper than sufficiency production and have simultaneously resulted in more disposable income. Sophisticated marketing and sales strategies have successfully encouraged individuals to spend any extra income on seeking pleasure and meaning through ever more consumption. Unfortunately, individuals with higher incomes also have higher ecological footprints (Aşıcı and Acar, 2016).

Overconsumption is thus a problem of the global consumer class. This chapter discusses the idea of the prosumer as a remedy for overconsumption and its environmental consequences. I argue that there are two types of prosumption – for pleasure and out of economic necessity. I also argue that these two types of prosumption must be discussed in different ways within sustainable consumption governance in order for prosumption to become a force for achieving more sustainable levels of consumption.

2. The age of prosumption

The term 'prosumer' originally coined by Alvin Toffler (1980) refers to the development of the individual's participation in markets from being a passive consumer to an active participant in production, maintenance and repair of consumer goods (Ritzer et al., 2012). This participatory role of consumers in production is enabled by modern technology: for example, DIY tutorials on the Internet; peer-to-peer

platforms (Ritzer et al., 2012); better access to tools and raw materials; makerspaces with professional equipment; lower costs for equipment; cheaper access to parts and materials from across the globe (Bradley, 2016); shifting public preferences towards service- and experience-based consumption (Ritzer et al., 2012); and a (cautious) effort by authorities to counteract a linear production–consumption system. Due to these factors numerous makerspaces, tool libraries, and open workshops have been established by grassroots movements and public actors to encourage and support this development (Bradley, 2016). In its broadest sense, prosumption embraces the co-creation of value proposition, product and service innovation, production, advertising, and extension of use (renting out) (Bardhi and Eckhardt, 2017). It can happen in a commercial setting (for example, Build-a-Bear workshop) or in a less commercial environment (for example, bike kitchens).

Indeed, value creation has moved from the workbench to the marketing department and, most recently, into the consumption practices of the individual (Prahalad and Ramaswamy, 2004a; 2004b; Vargo and Lusch, 2004; 2008). Toffler (1980) argued that the post-industrial age would lead to an increase in prosumerism; individuals who actively participated in the production of the goods they consume. He describes this development in three waves: (1) sufficiency (or production for use), (2) consumption (production for sale) and (3) prosumption (the co-creation of products). For Toffler, the main distinction between the traditional production process and prosumers was that goods are produced in the first case for someone else, while prosumers produce for themselves. This has implications for product value, which, in the case of prosumption, is measured not only in monetary terms, but also in the time invested in production and in the added value that participation in production adds to the product. This means that the same production process may allow for vastly different levels of value creation, depending on the amount of effort the prosumer puts into the production process. This, for Toffler, will lead to a demarketization and demassification of production. Toffler attributes this development to societal long-term developments like reduced working hours, higher educational levels, increased labour costs for skilled labour, and a desire among individuals to be physically active, as well as a belief among some people that they can produce an individually more suitable product for themselves than the market.

Toffler's idea was being viewed with some scepticism as early as 1986 (Kotler, 1986), and it must be acknowledged that the changes Toffler anticipated have not yet materialized. Despite some examples from the last 30 years that offer anecdotal evidence for the changes that Toffler believed would emerge, it is hard to ignore the overall trend of increasingly faster linear production and consumption, with more goods being bought for less money and disposed of without maintenance and repair. Mobile phones, for example, are not only famously short-lived, with an average lifetime of two to three years, but they are also notoriously difficult to repair (see the iFixit 'Smartphone Repairability Scores' (iFixit, n.d.).¹ Unfortunately, many other products also exemplify the short-lived consumer culture of today (Cooper, 2016).

Against this context, prosumerist practices are largely niche; they are also often performed in addition to high-volume 'conventional' consumption rather than instead of it. Kotler (1986) refers to the latter as 'the avid hobbyist': individuals who spend most of their time producing for others and consuming from others and who fill their leisure time with practices (hobbies) that turn them into prosumers during these moments. According to Kotler, this is distinct from what he terms 'the archprosumer'. This second type of prosumer practises a lifestyle of 'voluntary simplicity';² they are also highly productive (see also Salvia and Cooper, 2016). Their underlying theme is 'small is beautiful' and 'less is more' (Kotler, 1986).

Despite Kotler's scepticism, Ritzer and Rey (cited in Davis, 2016: 160) claim that we are about to witness 'the age of the prosumer'. No doubt aware of the loaded nature of their statement, they qualify their claim by putting it into historical context. They acknowledge both its beginnings in 1980 with Toffler, and Kotler's more cautious approach in 1986. They further acknowledge that despite the three decades since the claimed mass arrival of prosumerism, it is still marginal. What makes them argue that we might finally have arrived at 'the age of the prosumer' is the revolution in information and communication technology (ICT). The arrival of the Internet and of social and knowledge exchange platforms, such as Facebook, Wikipedia and YouTube, have led to a dramatically changed production of and access to knowledge (Ritzer and Rey, cited in Davis, 2016) making the distinction between producer and consumer ever more blurred. Much like Toffler (1980), Ritzer (2014) argues that the distinction between production and consumption is a consequence of the Industrial Revolution, during which production changed rapidly during its beginnings, while consumption patterns and levels have changed in its later stages. Ritzer and Rey (in Davis, 2016) claim that the US society of today is a consumption and not a production society. Not only is the average American more often a consumer than a producer, but she receives increasing responsibility (or freedom) to take charge of the production process, for example: ordering food at a self-service counter, putting together self-build furniture or preparing food delivered in bags with ingredients and cooking instructions.

Marketing scholars discuss this idea of market-supported self-production of products and services as co-creation or co-production. The idea that has taken hold is that of the consumer as the ultimate value creator. Vargo and Lusch (2004) argue that value creation over the last half century has moved from the production line (as in the post-Second World War thrift economy) to the marketing department (in the recent needs creation and consumption perpetuation overflow economy), now ending with the consumer (in the global, highly competitive and connected economy of today).

The justification for this development can be found both in economic reasoning (fewer employees are necessary in a shop where consumers operate their own scanning and payment machines or where consumers build their own furniture from parts) and emotional reasoning (a child values a bear that she has built herself more than a teddy bear from the shelf that looks the same as any other). Marketing

scholars such as Prahalad and Ramaswamy (2004b), or Vargo and Lusch (2004) argue that the lines between producers and consumers are becoming increasingly blurred in postmodern societies and that this offers new opportunities for businesses to create and capture value.

3. Prosumerism as sustainable consumption?

The individual acting primarily as consumer in society has been heavily criticized in relation to the environmental cost of an (over-)consumption lifestyle. Alternative, less environmentally harmful ways to satisfy individuals' need for goods have had limited success. Low production and transaction costs for purchasing new products, compared with high production and transaction costs for maintenance and repair of older products, combined with the marketing-induced social desirability of new products, have doomed any attempt to reverse the consumption logic towards high-quality, low-throughput consumption.

Prosumption has received attention in recent years due to its perceived potential to achieve the functions that consumption performs for the individual, but with reduced environmental impact (Eden, 2017). The hope expressed is that prosumption will lead to increased demand for products of high quality and an uptake in the maintenance, repair and reuse of goods (Kohtala, 2015). This hope builds on a few recent changes in society, the economy and technology.

3.1 Awareness of environmental problems related to overconsumption

First, collective awareness about the problems associated with high levels of consumption are receiving more attention (see Reser et al., 2011 for a study regarding concern about climate change). While the 1960s, 1970s, 1980s and partly the 1990s were dominated by a lack of awareness and a belief in technological solutions for any potential consumption-related problem, the turn of the millennium has seen increasing scepticism towards humankind's ingenuity in finding technological solutions and a growing awareness about the scale of the problem. This has resulted in a shift in values and attitude with regard to the purchase of new goods compared to the maintenance and repair of quality goods. In fact, the very nature of newness and 'untouchedness' is somewhat losing its allure. Sharing usage and reusing what others have used before is becoming ever more popular. This is evident, not least, in the surge of popularity in second-hand (vintage) clothes and the consequent loss of stigma associated with wearing used clothes (Cassidy and Bennett, 2012; Fischer, 2015; Parsons, 2002; Veenstra and Kuipers, 2013). It has become more socially acceptable to preserve, repair and reuse (Salvia and Cooper, 2016). This is also reflected in cautious political action. While politicians have proven wary of disrupting the market economy in any major way, they have indeed been experimenting with incentives to encourage maintenance and repair/reuse. The Swedish government, for example, lowered VAT on repair services for bicycles, shoes, leather goods, clothes and home textiles from 25 per cent to 12 per cent (Swedish Ministry of Finance, 2016).

This change in what is deemed societally preferable holds the potential for prosumption to change how people think about themselves and who they strive to be, or at least how they appear to others.

3.2 Information and communication technology

Technological innovation has resulted in a dramatic reduction in the transaction costs of prosumption. The revolution in ICT has resulted in a cornucopia of readily available knowledge on how to maintain and repair goods. Fox (2014), for example, lists several ICT-enabled tools for DIY work:

1. OpenMaterials, a website dedicated to the open source making of materials;
2. Instructables, a website for users to share DIY tutorials;
3. Make Magazine, a web- and print magazine for the DIY community.

The same ICT revolution has also allowed for very different interaction between end-consumers and producers (producer-to-consumer) (Vargo and Lusch, 2004) as well as among consumers (peer-to-peer) (Eden, 2017), allowing for much closer interaction between actors. In the case of producer-to-consumer interaction, this development opens up the potential for long-term interaction between producers and consumers that thrives on more than sales (for example, service agreements, skills training and education). This is what Vargo and Lusch (2004) have called service-oriented logic in business, leading to value co-creation. On the level of consumer-to-consumer interaction, it allows the formation of decentralized networks of individuals that blur the lines between producers and consumers (Eden, 2017). Furthermore, the ease with which ICT allows for such peer-to-peer interaction pushes such behaviour from niche to mainstream (Eden, 2017). Indeed, Ritzer (2014) suggests that the Internet is the natural home of prosumers today.

Interestingly, this development not only offers simple, cheap and fast access to knowledge, but also offers a simple, cheap and readily available platform to communicate and self-promote consumption acts. In Eden's (2017) words, the Internet offers a space to harness 'likes' for one's prosumption achievements.

3.3 Cheaper access to production resources

The revolutionary changes in ICT have also made it significantly easier for individuals to access raw materials and tools. Nowadays high-tech components, parts and professional tools can be ordered from across the globe via online retailers such as Alibaba and Amazon at relatively low prices. Furthermore, platforms such as 100kGarages or Shapeways allow creative individuals to connect with manufacturers who will custom manufacture their designs (Fox, 2014). Equipment and tools for DIY maintenance and repair have also become more accessible, even for non-professionals, and access to specialized tools has become much easier (Fox, 2014), not least due to the proliferation of DIY workshops of all sorts that can be accessed for free or a small fee. Makerspaces have emerged in many urban areas.

Here individuals can – for low fees or for free – access advanced equipment, as well as skills or parts.

Together, higher awareness of the environmental and social consequences of overconsumption, easier access to equipment and parts, and the knowledge of how to use them could push prosumption from being a niche activity into the mainstream and thus have the potential to reduce overconsumption.

4. Two ways in which prosumption can result in more sustainable consumption

As stated by Kotler (1986), there are two types of prosumers – (1) the ‘avid hobbyist’ and (2) the ‘archprosumer’ – to which the above forces apply in different ways. Increased consciousness about the negative consequences of overconsumption and a resulting shift in desirable behaviour towards quality and maintenance, as well as significantly easier access to the necessary knowledge and skills, increase the experience value gained from prosumption for the avid hobbyist. In order for these individuals to become prosumers, an act of prosumption must be attractive enough to invest time that would otherwise be spent on other (consumption) behaviour. Time, not products, is the primary factor that differentiates this from other consumption behaviour. For this to happen, individuals must find more value in spending time on prosumption than on consumption. The archprosumer, on the other hand, is more often limited by money and engages in prosumption for primarily economic reasons. For the archprosumer, any prosumption activity will directly reduce the need to consume the product since the primary motivating force is the ability to gain access to goods more cheaply than through consumption.

I have modified Kotler’s terminology and adopted different terms for these two distinctly different types of prosumption in order to capture this main distinction in the motivational force to engage in prosumption: (1) ‘emotional prosumption’ (primarily connected to the avid hobbyist) and (2) ‘economic prosumption’ (primarily connected to the archprosumer).

This distinction is important as prosumption only has an impact on overconsumption patterns if an act of prosumption replaces an act of consumption. Indeed, where prosumption is an add-on to unchanged consumption behaviour, no positive impact on consumption levels can be expected. This distinction becomes more relevant due to the continuously widening wealth gap in industrialized economies of recent decades. Wealth and income in industrialized economies are becoming more unequal, with some individuals having a great deal of money, but little time, while others have a great deal of time but little money at their disposal.³ For the latter group, the maintenance and repair of old goods has become a more attractive option as DIY has become more financially attractive due to the above-mentioned reasons. These consumers are money-poor, but time-rich, and it is most likely that prosumption will replace the need to purchase goods (Figure 7.1).

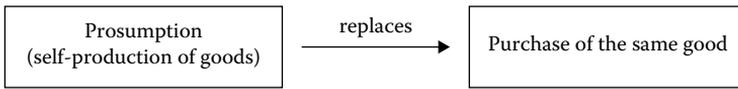


Figure 7.1 Economic prosumption

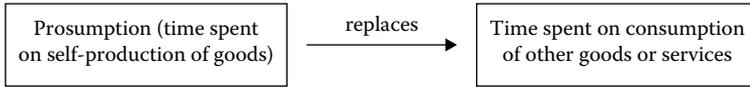


Figure 7.2 Emotional prosumption

Any act of economic prosumption will therefore primarily be an add-on to the consumption these individuals can afford, while they use their time to free up their limited disposable income for other acts of consumption. This has further implications for the nature of prosumption engaged in by these individuals, as only money-saving prosumption is of interest to this type of prosumer.

However, this type of prosumption is of limited relevance for the problem of overconsumption, as overconsumption is not caused by economically restrained individuals. The wealthy consumer class – those individuals with excess income to spend on consumption not essential to their existence – is the main cause of global overconsumption. Their prosumption activity is an expression of emotional preference for prosumption compared to other activities they could do in their limited time (Figure 7.2).

These consumers are rich in money but have little (or no) excess time and self-production replaces another leisure activity. An act of emotional prosumption thus results in less time to spend on other activities.

To illustrate this distinction, I would like to refer to the example of *Cykelköket* (bike kitchen) in Malmö, Sweden. This is a DIY repair workshop for bicycles that offers free access to tools and used spare parts, as well as a community of people interested in bicycles, and provides the possibility for them to learn from each other (Bradley, 2016). As a regular visitor, the author of this chapter has observed that there are two types of users: those that come to the bike kitchen to practise their hobby and whose primary motivation is to enjoy themselves, and those that come in order to gain access to a bicycle as cheaply as possible. While the observable actions of both groups are identical – they both build, repair and maintain bicycles – the impact of their actions on their consumption patterns will be very different. For the economically constrained individual, time spent in the bike kitchen will most likely replace the purchase of a bicycle. The bike kitchen primarily enables this individual to put a cheap resource (time) to work to get access to a needed product (bicycle). For the emotionally motivated individual, however, the same act will most likely replace other activities. This is because the individual has adequate economic resources, but not enough time on

their hands. Putting time into prosumption results in less time to spend on other activities, including consumption. Furthermore, consumption replaced by an act of prosumerism must by no means be directly linked to this act of prosumption. The wealthy consumer spending time at the bike kitchen in Malmö might already own a bicycle, and even buy a new one at the same time that she repairs a bicycle at the bike kitchen. What appears counterintuitive at first makes perfect sense if one reflects upon the reasons why an individual chooses to spend time at the bike kitchen. If pleasure is the primary reason, then pleasure is associated with bicycles for this individual. It is therefore likely that the individual derives pleasure from bicycles even outside of the context of the bike kitchen and, since money is not the limiting factor for her consumption patterns, it is likely that she spends money on cycling even beyond the act of prosumerism. An emotional prosumer's activity at the bike kitchen is unlikely to reduce consumption in the field of cycling; in fact, the opposite is the case. The consumption replaced could be anything from a beer with friends, a day trip to the beach, an afternoon spent in front of the TV or fashion shopping on the high street. In essence, what is happening is that self-identity is derived through emotional prosumption and that this derived self-identity has the potential to replace acts of gaining self-identity that are more environmentally harmful (for example, through fashion shopping). Here, the opportunity cost of prosumption is not so much measured in monetary terms as it is measured in the pleasure (and self-identity) derived from these activities. Prosumption therefore has a meaningful impact on overconsumption only when the time spent on prosumption replaces another less sustainable activity. In practice, this means that emotional prosumption is sustainable if the time spent on repairing a bicycle replaces a shopping spree at the mall or a road trip with a gas-guzzling SUV. In short, the sustainability of prosumerism depends on the *crowding out* of less sustainable behaviour.

5. Discussion

The following discusses what this distinction between economic and emotional prosumption entails for business as well as policymakers.

5.1 A market economy for prosumption

Sustainable consumption is usually conceptualized as meaning that some people need to consume significantly less (the global consumer class), while other people need to consume more (those living in poverty). Ideally, increased prosumption can have a positive effect on the lives of both groups and do so in a way that is compatible with the market economy. For those consumers with low purchasing power and thus a small environmental footprint, increased opportunities for prosumption can provide cheap access to necessary products with low additional environmental impact. For those consumers with high purchasing power and thus a high environmental footprint, increased interest in prosumption has the potential to crowd out more resource-intensive consumption behaviour.

A significant difference between economic prosumption and emotional prosumption is that only the latter lends itself to swift integration into the mainstream market economy. While prosumption conducted in the pursuit of saving money will more likely thrive on community action or on public subsidies of this behaviour, emotional prosumption lends itself well to monetization. Indeed, marketers have long argued that successful businesses can emerge from the appetite of wealthy individuals for experience rather than ownership. There are two reasons why such a profit-oriented, market-based approach to prosumption as a tool to reduce overconsumption is desirable: (1) the greater likelihood that prosumption will crowd out consumption due to superior experiences and (2) the reduced purchasing power of prosumers for spending on 'traditional consumption'.

5.1.1 Crowding out consumption

The increased involvement of for-profit businesses in the development of prosumption would lead to intensified focus on improving the positive experience of prosumption activities. In particular, when the prosumer is a wealthy individual who can put extra spending power into prosumption, if this is deemed a desirable experience, businesses should prove capable of improving prosumption experiences. This, in turn, should result in prosumption becoming an increasingly attractive activity compared to 'simple' consumption.

5.2.2 Reduced purchasing power

Available income significantly influences overall consumption of individuals. Indeed, standard economic theory argues that consumption levels are fundamentally a function of income (Campbell and Mankiw, 1989). The ability of for-profit businesses to create additional value in prosumption and to extract higher prices in exchange reduces the remaining purchasing power of emotional prosumers, thus limiting their ability to increase their ecological footprint from consumption. While counterintuitive at first, from this perspective, a more expensive prosumption experience is in fact better. Time is the limiting factor in prosumption for the wealthy, overconsuming individual, but disposable income is the primary factor for determining total consumption levels. To clarify, even an intensive prosumer who embraces self-production in various aspects of her life can still cause much damage with her disposable income during the rest of the time. As long as prosumption does not influence overall disposable income, even a person who spends many hours a week gardening at home and fixing their own bicycles can spend remaining disposable income on several long-distance flights. However, when increased prosumption also means a diversion of part of the disposable income of a person to prosumption, increased prosumption then means that the person has less disposable income available for other consumption (Figure 7.3).

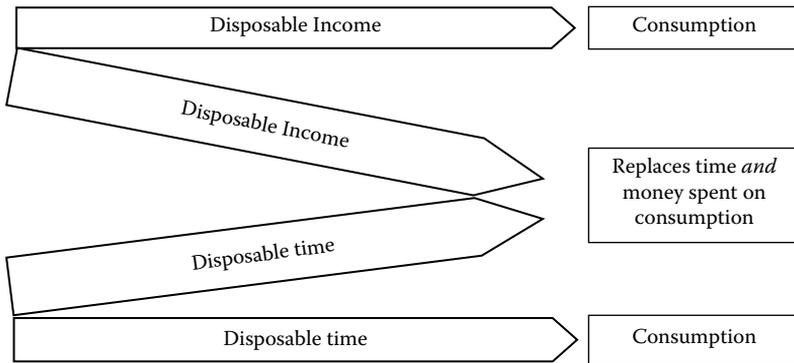


Figure 7.3 Marketization of prosumption

5.2 Sustainable consumption governance and prosumption

My distinction between economic and emotional prosumption in conceptualizing the potential of prosumption has relevance for sustainable consumption governance in two ways. First, it implies that policymakers should not focus their attention on the actual *products* replaced by prosumption. Instead their focus should be on the *time* prosumers engage in productive or non-productive self-production. Indeed, the productivity of prosumption is secondary. In a way, the more non-productive time a prosumer spends on the act of self-production, the more time is channelled away from other types of consumption (or from other aspects of the individual's life). Thus, while focusing on replaced goods means that inefficiency in prosumption is problematic (Salvia, 2015; Smith et al., 2013), it is not time that is the decisive factor. To take one example, we could compare a prosumer repairing her own bicycle with her bringing it to a bicycle repair shop. The bicycle repair shop is most certainly more efficient in using the resources needed to repair bicycles. If we only compare the outcome – a working bicycle – then it is likely that prosumption is less sustainable than a professional repair service. However, a repair done at the bicycle repair shop does not mean any time sacrifice for the owner of the bicycle, while prosumption, on the other hand, does entail this.

For sustainable consumption governance, this means that not only monetary incentives have to be changed (such as Sweden's decision to reduce VAT on repairs), but that incentives to use time differently, for example, by working less and spending more time on prosumption, are also needed.

Second, my discussion counters the argument raised by activists and some scholars (for example, Bradley, 2016; Hult and Bradley, 2017; Seravalli, 2014, cited in Salvia and Cooper, 2016) that prosumption and the DIY movement are most sustainable when they are non-profit. Instead, the argument detailed in this chapter provides a more nuanced understanding of prosumption and sustainability. While not-for-profit community-driven prosumption might be more beneficial for economic prosumption (and thus for social sustainability in that it provides a new low-cost

option for financially constrained citizens to access the products they need), from an environmental sustainability point of view, I argue that for-profit prosumption can have a greater positive impact on consumption levels. For-profit organizations are particularly good at creating additional value for consumers, while also extracting disposable income for this added value. In a prosumption future, where many for-profit organizations compete to provide the best prosumption experience, the total amount of time and money spent on emotional prosumption would be much greater than if not-for-profit organizations were to drive development towards more prosumption. The potential to divert consumption time and spending power towards prosumption is therefore greater.

6. Conclusions

This chapter has focused on the distinction between economic and emotional prosumption in conceptualizing the significance of the idea of prosumption for overconsumption. It discussed the two main motivations for individuals engaging in acts of prosumption, and their respective impact on consumption behaviour. The bike kitchen in Malmö was taken as an example.

This chapter argues that economic and emotional prosumption are two distinct behaviours with different implications for sustainable consumption. Economic prosumption, while having potential to result in more social sustainability, provides little potential to mitigate the environmental consequences of overconsumption. This latter potential is only inherent in emotional prosumption.

The latter implies the necessity of emotional prosumption becoming more of a market-led development, moving away from not-for-profit, voluntary-run projects supported by public funding. This argument weighs even heavier when considering that emotional prosumption often caters to a group that is well-funded and is not dependent on public financing for activities that provide pleasure. My argument thus raises the question of whether municipalities such as Malmö should focus their resources on places such as *Cykelköket*. Municipal and national policymakers could instead focus on prosumption as a more general behaviour, expressed in any form, be it at home, in a community workshop or a commercial space. The broader the push towards prosumption, the more successful the value shift will be towards valuing uniqueness, skill and maintenance instead of mass production, convenience and innovation. Public funding should be reserved for economic prosumption, while emotional prosumption should be encouraged by other means (such as regulations, taxes or business development). In line with the argument of this chapter, not only would such an approach save limited public funds, but it would also increase the success and societal dissemination of prosumption. As argued, the emotional prosumer derives satisfaction from the continuous engagement with one consumption object as opposed to the consumer who derives satisfaction from the engagement with new consumption objects. The emotional prosumer pays for this satisfaction not only with money but partly also with time. A successful push

for market-led prosumption could very well lead to the refocusing of consumption from the rapid consumption of mass products to the extended consumption of high-quality products. This is the main contribution of prosumption to more sustainable consumption. Ultimately, it can contribute to a development from a goods-centred approach to consumption (focused on ownership) to an experience-centred approach, and ultimately an accomplishment-centred approach (in which *how* consumption is achieved becomes equally important as what is consumed).

7. Concluding remarks

With this chapter I hope to encourage three things: first, a willingness by policy-makers and others to engage with the idea of prosumption as a tool to achieve more sustainable consumption patterns in order to critically evaluate real world examples of the trend (for example, makerspaces, bike kitchens, community gardens or experience-centred businesses) and to distinguish between initiatives that have the potential to change consumption patterns and those that have no measurable impact on overall consumption levels. For example, despite a noticeable increase in popularity of prosumption (Salvia, 2015; Salvia and Cooper, 2016), the absolute volume of saved resources and prevented waste for initiatives such as the bike kitchen in Malmö are questionable. According to Bradley (2016) the bike kitchen in Malmö prevented 1000 bikes from going to landfill during its first three years. This compares to an annual market for new bicycles in Sweden of 600 000 sold units in 2015 alone (Svensk Cykling, 2015).

Second, I hope to expand debate on the scalability of prosumption niches, which would most likely involve their integration into the market economy or increased support for them from the public sector. Both options are possible, but both come with consequences.

Third, I hope that a change in the debate about presumption can be encouraged, away from a focus on the products that prosumers prevent from going to landfill towards a focus on the lifestyle changes that greater prosumption would imply. Ultimately, prosumption should be interpreted as a development from consumption focusing on ownership towards consumption focusing on experience and expertise (for instance, knowledge and skills). The latter has the potential to change consumption from a fast throughput model to a high-quality and high-maintenance model.

8. Future research

For future research, several questions arise from this chapter, which all need to be answered to understand the actual impact of prosumption on overall consumption levels. A case-specific understanding needs to be developed of the actual environmental footprint of an hour spent as prosumer in comparison to an hour spent on whatever else the prosumer would have done during this hour. Further research on the actual

environmental costs of prosumption is thus necessary. It is easy to argue that an hour spent at the bike kitchen in Malmö does not result in a large environmental footprint, even though we should not forget that the existence of the bike kitchen itself results in a certain environmental footprint. However, if we were to imagine a makerspace that provided heavy duty or specialized equipment resulting in high resource use, the question arises whether an hour spent using this equipment is preferable to an hour spent in front of the TV or sitting in a café drinking coffee with friends.

This leads us to the second relevant question: the type of behaviour that is crowded out by increased prosumerism. As argued in this chapter, prosumption has its largest impact on behaviour by crowding out other types of behaviour. It is therefore important to understand which types of behaviour the prosumer is reducing as a result of more hours spent on prosumption.

A third research direction emerges from this chapter's suggestion that commercial prosumption could make a significant contribution to the reduction of consumption levels. It is far from clear how willing individuals are to pay for the experience of prosumption. Studies should therefore look into this issue with regard to 'emotional prosumers'.

Finally, it is relevant to study the indirect effects of prosumption. This chapter has been mostly concerned with the immediate outcome of time and money spent on prosumption. It has not discussed any potential change in values, attitudes and preferences that prosumption could bring about. It is conceivable that an individual engaged in bicycle prosumption could also develop a positive attitude towards used but well-maintained clothes, household goods and electronics. Potentially, prosumption could even lead to a change in personal values, in which newness and ownership lose their appeal and could result in a general rejection of overconsumption as a way of seeking pleasure and defining identity. It is thus conceivable that a prosumer would not only prefer the activity of repairing a bicycle over a road trip in an SUV but that the individual loses interest in owning an SUV completely.

NOTES

- 1 According to the website Statista, the average replacement cycle length of a mobile phone in 2016 was only 22.7 months in the USA, 21.6 months in Western Europe and 20.2 months in urban China (Statista, n.d.).
- 2 Shaw and Newholm (2002) define voluntary simplicity as a generic term for a variety of behaviours that have in common the fact that individuals voluntarily forgo maximum possible consumption, and maximum possible achievable income.
- 3 For a study analysing increasing wealth inequality and disparity in working hours in the USA between 1967 and 2006, see Heathcote et al. (2010).

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