

DEMOS HELSINKI

Demos Helsinki Futures Brief

The consumer business
models of the future

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HELSINKI**



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"Resource-smart products must offer something more: they need to be smoother, quicker, simpler, healthier, more enjoyable, more reliable."

Contents

- Foreword..... 5
- Introduction: The success stories of the coming years will be created by smart-ups 6**
- Five major shifts that enable a new type of business 8**
 - 1. The decentralised generation of renewable energy 8
 - 2. The platform economy and the Internet of Things..... 8
 - 3. The servitisation of production and consumption 9
 - 4. Cities become smart 10
 - 5. The global middle class is growing 11
- Consumers: what about them do we need to understand? 13**
 - The consumer does not invent new things 13
 - Supply dictates consumption 13
 - Four myths about consumer behaviour 13
 - Myth 1: The consumer acts rationally 13
 - Myth 2: Consumers choose the cheapest product 14
 - Myth 3: Values direct consumer decisions 14
 - Myth 4: Only legislation can create change 15
- Climate change, the biggest business opportunity in the world 17**
 - 1. The circular economy..... 17
 - 97% new, 3% used 17
 - Five tips for mastering the circular economy..... 18
 - 2. Dematerialisation..... 18
 - Less of what adds to climate change 18
 - Five tips to master dematerialisation 19
 - 3. The sharing economy 19
 - Established companies, new business models 20
 - Five tips for mastering car sharing 20
 - 4. Optimisation 20
 - Five tips for mastering optimisation 21
- To conclude: Towards new, climate-friendlier markets 22**
 - Recommendations 22

Foreword

The economy in 2038 will be different from the economy in 1958. The years and decades to come will be marked by decarbonisation, urbanisation, climate change, the depletion of natural resources and the pursuit of the circular economy. At the same time, the global middle class is growing, digitalisation is penetrating all societies, and Millennials will propel changes in consumer behaviour. These drivers will shape the economy, test the resilience of businesses, and create a need for sustainable ways to achieve a sustainable and fair standard of living.

About one-third of the global population belongs to the consuming middle class – and their behaviour is changing. Millennials are projected to overtake Baby Boomers as America's largest generation group in 2019. Baby Boomers enjoyed cheap energy, abundant resources and freedom granted by private car ownership. Millennials are less likely to have driver's licenses, they reject the necessity of ownership, embrace digitalisation and value premium user experiences.

The industrial economy needs new alternatives. A crucial question is how to identify compelling new opportunities deriving from global trends and challenges, and how businesses can deliver winning products and services that take into account the three cornerstones of sustainability.

We call these game-changing companies smart-ups. Their value proposition serves a growing number of environmental, social or economic needs in society and the daily life of consumers. They rethink energy infrastructure, mobility services, spaces, commodities and our kitchens – while often offering a premium user experience. Smart-ups disturb and sometimes disrupt entire industries while gradually liberating us from a dependency on natural resources and CO₂ emissions.

This Future Brief explains new business models needed for transforming our economy. It is based on a long-term work of Demos Helsinki, where we have been working together with big and small companies and entrepreneurs forerunning in the consumer cleantech business. We thank The Jenny and Antti Wihuri foundation for supporting this work. This paper is also part of the SmartUp Accelerator project, funded by Interreg Baltic Sea Region as part of European Regional Development Fund.

Entrepreneurs and businesses with a forward-thinking mindset will be able to identify opportunities in a burdened planet dotted with comfort-seeking consumers. Those who can set us free from dependency, improve our living standards and react to the exigent demands of consumers will be the shapers of the future economy.

Smart-ups base their business models on platforms, access over ownership, decentralisation, optimisation and pleasant user experiences. They 'servitise' everyday life by creating new service layers and have a positive impact on our perceived quality of life. These business models are often created by start-ups, but established companies can also learn a lot by thinking and acting like smart-ups. If not alone, then together. Collaborations with innovative companies can be beneficial: they add value to strategic planning, catalyse new business models and accelerate diffusion and upscaling.

Smart-ups seek and open new markets by combining megatrends and the driving forces behind new business ideas. Mobility becomes a service, decentralised energy infrastructure caters to prosumers, assets are shared and optimised, and data is used responsibly. Smart-ups excel in understanding their customers' minds and delivering ecological and financial benefits in an increasingly post-industrial era.

The dominant industrial era business models will not prevail in 2038. This *Futures Brief* supports entrepreneurs, business developers, supporters of innovation, public funding bodies and investors in their daily work. It explains consumer myths, provides tips for mastering the circular economy, dematerialisation and optimisation, illustrated by international business examples. Expect concrete recommendations and suggestions range from product-free lifestyles to platform business and servitisation. Different readers can utilise all this in their pursuit for a more sustainable, one-planet economy. This *Futures Brief* helps us to think, act and develop like a smart-up.

Antti Lippo

Innovation Manager, Smartup Accelerator
Demos Helsinki

Introduction: The success stories of the coming years will be created by smart-ups

We have one thing to thank for the unexpected economic growth of the past century in the Western world: we make use of fossil fuels extremely efficiently.

In the 19th century, coal was used to increase the efficiency of industry and make it easier for goods to be transported to consumers. The 20th century saw the world population multiply four-fold and the urban population 13-fold. The most important development, according to world historians J.R. McNeill and William McNeill, was the appearance of cheap oil for consumers in the 1950s. Cars and aircrafts could not run on coal but oil did the trick. Wood-heating would have required hard manual labour but the use of oil, coal, natural gas, hydropower and nuclear power freed time for other things.

Thanks to these new sources of energy, mobility, productivity and wealth grew. In practice, this meant more space at home, more and better electrical appliances and more opportunities to travel for both business and pleasure.

The standard of living in the Nordic countries in general has been high: second cars and year-round second homes – electrically heated, of course.

The growth of living standards in Western countries is largely tied to the use of fossil fuels, which has led to – and will continue to lead to – severe problems. The most urgent of these is climate change, a challenge brought on by us westerners. Climate change is also a challenge that needs to be dampened by everyone. Meeting the aims of emission targets is obviously easier said than done. It requires decisions from corporations and states that would lower emissions without compromising wellbeing. Few are ready to give up the benefits gained.

Still, many fields commonly seen as being conservative have taken stands on the frontline of emission reduction. One example is the automotive industry, a field that experienced a hit in its reputation some years ago.

In September 2015, just before the climate summit held in Paris, it was disclosed that Volkswagen –

one of the biggest car manufacturers in the world – had manipulated their emission calculations. The motive for their meddling was, of course, financial. Media reports on this caused the company's stock to drop by more than a fourth of its value and it has yet to return to its previous worth three years later.

Car manufacturers have not had it easy on other fronts, either. Urban youth in western cities are now acquiring fewer driver's licences than their parents for the first time in history. To say nothing of car ownership.

A change of direction has become inevitable: new concepts, new business models, new something.

Many big car manufacturers have turned to the solutions of developing car sharing services or investing in existing sharing models. General Motors has invested in Lyft and Toyota in Uber. Volkswagen has supported Gett, a service that uses only professional licenced chauffeurs.

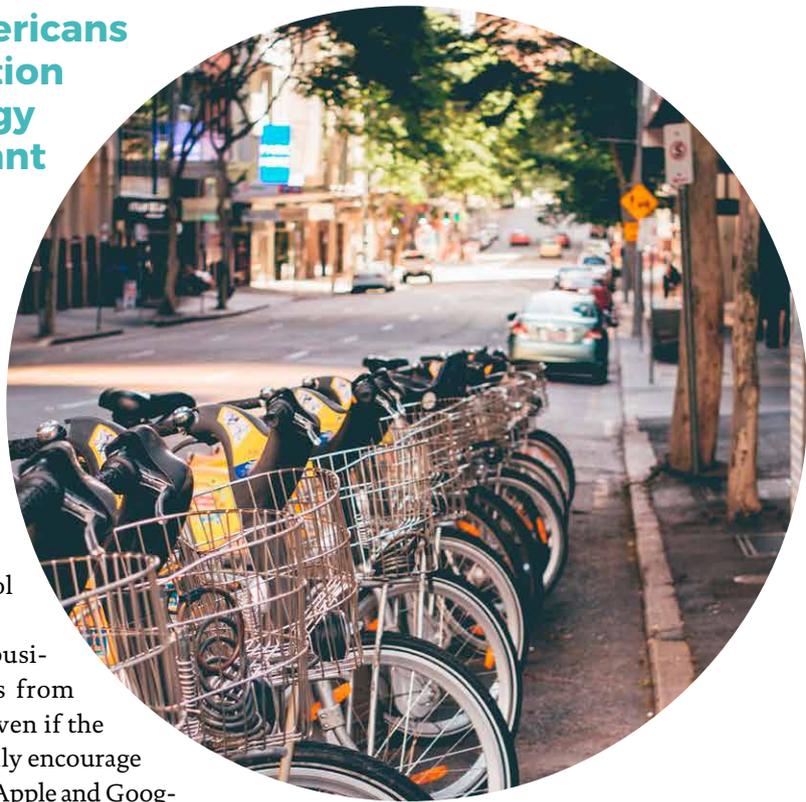
Investments are always a business decision yet it is likely that in these cases, the objectives are more ambitious than quick profits. The car companies obviously gain shares in the companies they invest in but at the same time they can access new business models and ideas. It is quicker and more cost-efficient to invest in existing services than to find a concept, build a brand, and break through with a whole new service.

These efforts made by companies are in line with what people around the world support: environmental action. The US-based Pew Research Center conducted a study in 2017 which concluded that 83 percent of Americans see the augmentation of renewable energy sources as important for the country's energy politics. 75 percent of Americans are worried about environmental questions and only 29 percent supported President Trump's decision to pull out of the Paris climate accord. Climate change is not just a trans-governmental issue and a worry for energy companies. Instead, climate change affects the whole corporate field at large, from retail to financing.

The starting point for this *Futures Brief* is that there are routes to lowering emissions.

International agreements such as the Paris Agree-

“83 percent of Americans see the augmentation of renewable energy sources as important for the country’s energy politics.”



ment seek to encourage international political bodies to ban fossil fuels, or at least to raise taxes in a way so that they slowly become unprofitable. For instance, the German Bundesrat has decided to ban new petrol and diesel cars from 2030 onwards.

Another route is to encourage businesses to direct their investments from fossil fuels to renewable energies, even if the current legislation does not necessarily encourage this. Such an example has been set by Apple and Google (Alphabet), both among the most highest-valued companies in the world. Apple has stated that all its premises around the world now only use renewable energies. Google has proclaimed that it is headed towards a carbon neutral future. At the moment, Google purchases enough renewable energy to match at least 100% of what the whole company consumes. Google – which started off as a search engine – has become one of the world’s biggest investors in renewable energy.

The third route is the one that this *Futures Brief* describes. Climate change may be an urgent problem, but reacting to it offers new and durable business opportunities that are waiting to be developed.

This *futures brief* is based on the idea that the success stories of the near future will be created by smart-ups. They are companies whose products have been designed from start to finish to support an easy and enjoyable user experience. In addition, these products save natural resources and utilise digital technology all-encompassingly. Professor Steve Blank from Stanford University has defined start-ups as “temporary organisations designed to search for a repeatable and scalable business model”. A smart-up can be defined as a growth-seeking company looking for a scalable business model which would liberate its users from a dependency on CO₂ and natural resources.

Smart-ups have the potential to harness tremendous environmental and business opportunities, so long as they manage to infiltrate as deeply as possible into our everyday lives. The most relevant innovations are born in cities where the proximity and interac-

tion of people lead to ideas being born and put into practice. Much in the same way as the industrial revolution managed to enhance the capacity of factories, the targets of optimisation now lie in vacant business premises and residential quarters, unused cars, the expertise of people, and other elements typical of the urban landscape.

The easiest business opportunities find space in markets committed to housing, mobility and eating. The average Western citizen spends 60 percent of their net income in these areas. The same areas of life also account for 70 percent of natural resources and the majority of our carbon dioxide emissions. The shift to a zero-emission world starts in our kitchens and on our daily commutes.

The recipe for harnessing the potential of resource-smart solutions into revenues is a traditional one: you need to offer better solutions than your competitors.

The promise of energy saving over the long term is a good start but not yet enough as it remains hard to predict what the final effect will be of many solutions for creating lifestyles that minimise the consumption of resources. This said, resource-smart products must offer something more: they need to be smoother, quicker, simpler, healthier, more enjoyable, more reliable.

New products need to be so good that one would choose them even if smart resource usage happened not to be the primary purchase criterion.

Five major shifts that enable a new type of business

Five significant shifts are currently taking place as the keys to developing smart-up businesses. How have these driving forces affected your business?

1. The decentralised generation of renewable energy

One century ago, energy was produced in a dispersed manner in private coal ovens. As society moved towards the 20th century however, the centralised production of electricity and heating became the norm. Right now, there is yet again a shift happening: towards decentralised systems.

Decentralised energy generation changes our perception of energy efficiency. More and more electronic appliances and buildings produce their own energy by collecting it from light, heat or movement.

The shift towards distributed energy generation has been accelerated in particular by cheaper solar and wind power technology. In 1997, producing one watt of electricity cost 76 dollars. By 2015, the price per watt had dropped to less than one-hundredth of this, to 0.57 dollars. The International Energy Agency IEA has estimated that solar power will become the cheapest form of energy production in 2030–2050. While currently solar energy only produces one percent of the energy needed by humanity, the availability of solar power is expected to double every two years.

The sun only needs to shine for 14.5 seconds to produce the energy required by all mankind in one day. If it were possible to store all this light, our full annual energy requirements would be met in 1.5 hours. The only thing we are now missing is a suitable battery to store it all.

According to several forecasts, it is merely a matter of time before battery technology reaches a point where individual energy producers can detach themselves from the centralised power system. The Powerwall home battery and solar panel system introduced by Elon Musk in 2015 gave a first taste of this. The

company's website promises that it can minimise grid-dependency. The Powerwall is a good example of how decentralised power generation changes the power grid. What was once a one-way distribution network of large-scale power plants becomes a multi-direction transmission system operated by actors of different sizes.

In addition to batteries and home power plants, such a system is supplemented by electric cars and home electronics, which all benefit from fluctuations in energy supply and demand and the price benefits arising from this. If the price of electricity rises too much, a hot water accumulator turns itself off and power stored by a car battery at a point of cheaper electricity redirects this energy to the house. In other words: the system becomes flexible.

2. The platform economy and the Internet of Things

The aim of all industrial systems throughout time has been to enhance production capacity. Perhaps the most typical form of enhancement in the 2010s has been the platform economy, a system which offers opportunities for private individuals and companies to sell their products and services.

At the moment, half of the most valuable companies on the New York Stock Exchange – including the two most valuable ones, Apple and Google – consider themselves platform enterprises. In addition to these, companies such as Uber and Airbnb – also platform businesses – have experienced exponential growth in recent years and have become multi-billion-dollar companies. Along with many others. These so-called 'unicorns' are privately held start-ups that are valued at \$1 billion or more. The majority of such companies fall to the category of the platform economy.

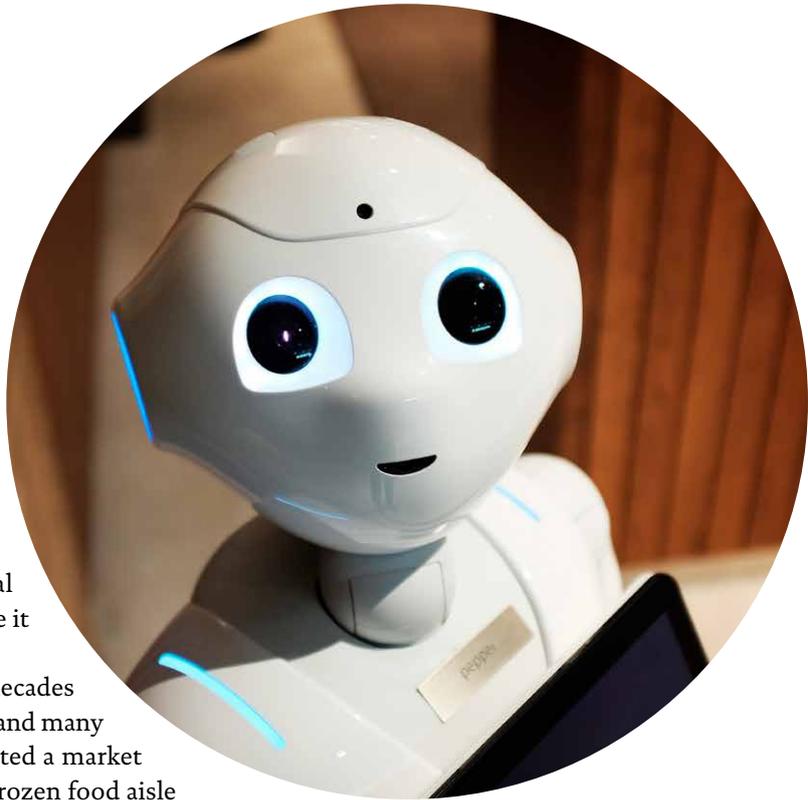
The platform economy has been made possible thanks to the ever-growing efficiency of computers: the development that started in the 1960s has yet to see an end. Digital systems make it possible to process even larger amounts of data. In addition, information

networks are becoming faster, sensor technology is becoming cheaper and cloud services grant access to the necessary data processing effectiveness and software expertise to also smaller companies. The result is a hyper-connected society where different applications connect enormous entities of physical and virtual experiences to one another and make it possible to cross-manage them.

Pizzas have been delivered for decades but it was Deliveroo, Foodora, Wolt and many others that can be seen to have created a market between a restaurant meal and the frozen food aisle of the supermarket. Companies managed to digitise the urban restaurant offering in a way that a couple of smart phone swipes would send a delivery person to your sofa with a ready meal. This business model is based on the idea that the delivery company controls the whole delivery chain. Food delivery applications handle paying, choosing a meal from many alternatives and the delivery of it. The consumer is left pleased with the ease of the transaction, the company receives exact data on the consumer's behaviour and can build a network of actors around this process.

Typical features of platforms are that the application's creator gets to dictate the rules of the process where a private individual – such as a car-owning taxi driver – can then offer their services within this pre-set system. This market calls attention to a steady balance of supply and demand so that users stick with the service and that the companies offering it are content.

The open aim of platform companies is to gain a monopoly status within the market that they have created. This makes it possible to offer cheap and efficient services when the platform's mission is to make the market function in an optimised manner by adjusting the service's price according to the supply-demand axis. For the user, however, a monopoly is not always the optimal solution. This is illustrated by the fact that the EU's competition commissioner recently imposed a hefty penalty on Google for abusing its dominant market position.



3. The servitisation of production and consumption

Software-as-a-Service, or *SaaS*, is a familiar concept to many in the digital world. Many have also used SaaS products offered by Finnish telephone operators before even hearing of the concept. The users of SaaS products pay for them with a flat monthly rate.

The current line of development has brought this thinking from operator services to other fields, referred to as *X-as-a-Service*, or *XaaS*. Servitisation is a development whereby physical products are replaced by services. For instance, the Finnish textile service company Lindström no longer sells hand towels or doormats, but instead offers a service of providing clean, hygienic, ecological hand-drying for office spaces. Xerox no longer sells printers but instead promises functional printing possibilities. Servitisation is due to next take place in cities and in people's everyday lives.

Servitisation pushes people to rethink what we are actually buying when we make purchases. Often we do not even need the product itself, but rather the service provided by it and this can be offered in a multitude of ways. The father of the concept of disruption, innovation expert Clayton Christensen, sees servitisation as a natural phase in business; the company learns to serve their customers better and better.

“When customers pay a monthly flatmate for their power, energy efficiency investments and energy saving become interesting and profitable ventures for energy providers.”

In his book *Competing Against Luck: The Story of Innovation and Customer Choice*, Christensen describes how the companies who understand why consumers make the choices they make are the ones who succeed. Christensen’s advice is to consider which “job your customer is hiring your product” for.

The servitisation of the mobility sector is in full swing. For instance, the automobile giants BMW, Daimler and Citroën all offer car sharing services alongside their traditional car sales businesses. Car sharing is not a new invention but major corporations have transformed it from a marginal field into a fixture in the Western urban landscape.

Mobility-as-a-Service, or *MaaS*, promises a single platform on which users can use all forms of transport. When buses, trams, trains, taxis and shared cars can all be found in the same service and users can pay for their travel with the same card, urban traffic becomes far easier for citizens without their own car. The Finnish company Maas Global is possibly on the very frontline of this thinking: at the time of writing in mid-2018, their Whim service is up and running in Finland (Helsinki) and Belgium (Antwerp and Ghent), and the company is currently looking to further expand their business.

The servitised future starts to reveal itself when we examine what happens when business sectors such as hardware stores, clothing shops and energy companies slide into a smart-up state of mind.

In this future, the energy producer will become an energy operator. When customers pay a monthly flatmate for their power, energy efficiency investments and energy saving become interesting and profitable ventures for energy providers. Hardware stores can sell energy saving services instead of windows, and clothing shops can offer a fashion lending service on top of their own selection, or for a monthly flatrate.

The pioneers have proven that there is demand. Many business opportunities are just waiting to be found.

4. Cities become smart

Didi Chuxing, Uber, WeWork, Delivery Hero, Hellobike. The fastest growing technology companies and the start-ups racking up major investments are linked by one thing: the urban landscape.

Cities have surpassed nation states as the shapers of the world. In the urban utopia of the 2010s, traffic and modes of transport adapt to the needs of citizens. You can choose a bike, a tram or a car, depending on what suits you best. Vehicle idle time decreases, as does the inefficient use of buildings thanks to solutions such as mobile applications where one can book a working space or yoga room, for instance. Restaurants hand out their surplus food at the end of the day to those who want it. The city is smart for a good reason: it expands, finds elasticity and adapts to the needs of its citizens and the environment.

On the other hand, it is not easy being a city: energy prices are mounting, the repair deficit is growing, the internet is disrupting the world of commerce, and more people are moving from peripheries to cities than urban infrastructures can keep up with. Yet these are all problems that can be solved with smart solutions.

Smart cities aim to be carbon-neutral, lively and interesting. The smart city wastes nothing, because there is a constant up-to-date sensor-based tracking of how buildings are used, how energy is spent, and how modes of transport and people navigate through the city. The life of citizens and visitors alike is made smoother thanks to open data. Decision-making on all levels receives support from the data produced by people and their surroundings.

The smart city offers huge opportunities for citizens and companies. When the physical environment links to a network – or in other words, when society becomes hyper-connected – an enormous flow of information starts to take place between things, buildings and modes of transport. This information is then at the disposal of governing bodies, citizens and companies. As an example of this line of thinking, the City of Barcelona designed their new bus lines by first releasing an excessive number of buses into traffic and making too many bus stops for them. The buses started to navigate the routes equipped with sensors and the city’s traffic engineers could then follow the traffic flow in real time and optimise the best bus routes and direct the buses to the best bus stops. In this way, the needed information was picked up directly from the real demand and the service was optimised accordingly. Without the initial trial, this information would not have been available.

5. The global middle class is growing

About one-third of the global population belongs to the consuming middle class, the size of which is continuing to grow, especially in Asia and Africa. Ever-growing consumption is opening up new markets but is also resulting in growing emissions. If the Global South's middle class seeks wealth in the same way as the middle classes of the Global North have done, the planet will not be able to bear this load. Companies around the world are now eager to find business models that produce services and products for developing markets in a way that ensures a steady rise in the standard of living. Digitisation assists the scaling of new services around the world. Around 95 percent of the global population already lives within the reach of mobile networks. Only a fraction of people in Sub-Saharan Africa have a bank card or access to mobile banking services. For a long time, this meant that the majority of consumers were dependent on cash. This in turn meant that it was difficult to make pricy purchases let alone engage in online commerce.

A solution has been found in mobile payments, which have allowed many countries to “leapfrog” over the bank card phase. For example, Kenya's leading mobile pay service M-Pesa has in 2018 already 22 million users, equating to 70 percent of the country's adult population. Using M-Pesa is not dependent on societal status or level of wealth. Its use among society's poorest – those living with 1.25 dollars or less daily – almost quadrupled in the years 2008-2011 to around 72 percent of that demographic.

Similar leaps are foreseen also in the energy and mobility sectors. “Carbon leapfrogging” refers to skipping the fossil fuel economy and moving directly into an economy that uses smart, renewable energy sources. In Kenya, where close to 90 percent of households are not part of the electricity grid, shared solar panels in houses or villages have quickly become common. For instance, the start-up company M-KOPA has attached over 600 000 houses to their power grid. The company has reported a daily rate of 500 new houses daily. A crucial step, however, is to secure political support for these measures. As we have seen in Western countries, if the use of fossil fuels becomes too commonplace, the way out is tricky.





Consumers: what about them do we need to understand?

Even if grandmas and grandpas still pay their bills at their local bank branch, the aforementioned phenomena are so widespread that whole societies seem to be undergoing great changes. These changes give birth to new businesses but also exterminate others. The smartphone market more or less killed off the entire alarm clock industry. The most crucial realisation in developing new business is to recognise an imminent change before others, and to understand how consumers are reacting to it.

The consumer does not invent new things

The customer is king, all bow down. This is why businesses organise consumer panels and surveys. How do you like our product? What qualities would you like our product to have? What kind of products would you like?

This line of thinking has one severe problem. The consumer does not come up with new things. Henry Ford famously stated that if he had asked people what they wanted, they would have said faster horses. When we are asked what we want from a product – for instance, a car or a mobile phone – we tend not to offer particularly imaginative suggestions. The device could perhaps be cheaper and better. It could be slightly faster, easier to use, more enviable, more ecological, and more time-saving.

When the consumer is asked what they want, they do not want the product to serve a completely different purpose. Perhaps they wish the washing machine to wash their shirts quicker and using less water, but not that the machine treats the fabric in a way makes conventional washing entirely unnecessary. This is no wonder as the consumer has better things to do. Their time is a precious and scarce resource.

Supply dictates consumption

In short, the true power to offer useful products to people lies in the hands of the companies producing them. Companies change people's behaviour and in this way create a new market space for themselves with no competition. This thought has been popularised by W. Chan Kim and Renée Mauborgne. They named it the Blue Ocean Strategy. If the supply is the same as before, consumer behaviour remains unaffected. Blue Ocean markets have created a whole new infrastructure for consumption, and cracking a market open produces exceptional profit margins. For example, Apple opened their iTunes service and commercialised digital music and went on to dominate the market for a good two decades.

Smart-ups have similar aims. They seek and open new markets by combining megatrends and driving forces to new business ideas, as discussed in the previous chapter.

Four myths about consumer behaviour

Myth 1: The consumer acts rationally

Most of us see ourselves as wise consumers. An act of in-depth comparison and consideration precedes a purchase decision. We then tell ourselves and those around us what a great choice we have made. This strengthens our self-image as unique beings who make good choices. Information and recommendations might guide us but the choices are our own. We understand the selection, the various factors at hand and we find the most suitable products. This is why the market economy works: there are better products for a cheaper price.

This is how we think as consumers. The merchant is also a consumer, a rational being who thinks that they sell products to rational consumers. The mer-

chant knows that the product and the price need to be appropriate, otherwise there is no deal. According to this thinking, the consumer is a wise king.

This is however not true. According to consumer studies, people constantly state that they want more information to be able to make healthier, more economical, environmentally friendly and socially responsible purchase decisions. Municipalities, NGOs and ministries have met this demand by providing consumer education and advertising campaigns.

Companies, too, have heeded consumers' wishes: their web pages now offer detailed product information. This information, however, often proves to be less useful than the rational merchant or the rational consumer might think. We do not learn to do things by reading or adopting conscious decision-making rules but rather by imitating others. Our most relevant sources of information come from our parents, friends, neighbours, and other peer groups. (Heiskanen et al., 2009)

Peer information can be thought of as an invitation to make a purchase. We know that our friends supply us with information about what they have chosen and why. We just do not understand the weight that we give to the information we receive. Often we are not even aware of a choice to buy something before hearing a recommendation! This is why consumption culture arrives in waves. New products and fashions do not spread because the consumer acts rationally and looks out for their own interest, but rather because everyone else has made the same purchases.

We are just as blind to how little we want to deviate from the norm. We may very well know what would be most beneficial to our own health or to the environment yet we are confined to habits and we act as we did in the past. In short, we never truly reach the point of making a true decision.

Myth 2: Consumers choose the cheapest product

Everyone knows it: money dictates our actions. People often buy products of poor quality because they are cheaper. Healthy, user-friendly, ecological products only sell when they become cheaper. The Rolex guys and the organic devotees are and will remain niche groups. The mass markets are run by price.

Consumer segmentation traditionally assumes that some people truly make purchases according to price, or in other words they calculate what they can afford. Another significant group is formed of the price-conscious who believe that price optimisation makes sense even if it is not mandatory. A third large

group is composed of people who consume meanings and experiences. Even the meaning-shoppers have a budget but they happily pay more for the products and services that they truly desire.

A recent study suggests otherwise. According to the study, the poorest and the most calculated consumers are directed by preferences just as much as necessity and needs. (SOURCE: Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty by Abhijit Banerjee). Everyone has inclinations, be they smoking, Coca-Cola, a piece of designer clothing, or a well-cushioned sofa. When we contemplate these items, our price-consciousness evaporates.

Frugality is a virtue but the individuals who save systematically are rare. The same person can just as well spend thousands of euros a year on heating a large house and pay for expensive travel abroad, but still choose a specific route with their car to reach a gas station that has petrol for a few cents cheaper than another.

As disposable income grows, people are more willing to spend money on completely new objects. When flatscreen televisions entered the market, practically everyone already had a television set. Flatscreens cost significantly more than people were used to when purchasing a television. The business kicked off regardless. Perhaps the prices went down a little bit and many thought that we can also afford such an expensive and fancy television. The same phenomenon can also be witnessed for smartphones, tablets, faraway travel and urban SUVs. Each category has managed to create a product that is so enticing that people want it regardless of the seemingly high price.

Myth 3: Values direct consumer decisions

We learn values in school and in the home and changing them takes decades, even generations. The biggest consumer group is the one that acts in the same way they always did. They buy the same brand of coffee that they always had at home, or drive a Toyota because their previous car was a Toyota. Only specifically ethical people make ethical consumption choices.

A pioneer of value studies, the philosopher Leo Strauss, has stated that values are "hidden / latent needs and motives". An action discloses these hidden needs. And action has therefore more impact on values than values do on actions. If we want to change consumer behaviour, we need to focus instead on making actions easier versus changing values.

Ecological consumption is not necessarily connected to ecological consciousness. Instead, factors

leading to purchase decisions can often be something other than ethical values – they might have to do with, for instance, new experiences, making everyday life easier, or saving money. According to values researcher Martti Puohiniemi, ecological products can be marketed towards young people for instance by linking them to stimulation or hedonism. Male consumers can be reached by developing sustainable products that boost the owner’s societal status or performance – one clear-cut example is of course the luxury electric car Tesla.

The segmentation of consumers is a basic tool of marketing, also for green products. Segments are easy to understand as well as direct tools to assist decision-making for management. The simplicity of segment thinking easily leads us to forget one basic fact: each consumer most often belongs to several segments simultaneously. There are no “only green” consumers as the majority of consumers are green at a certain moment and the majority of green consumers also belong to other groups.

All consumer studies show that people’s value emphases are situational. The same individual can leave the Fair Trade bananas at the shop but still spend their evening browsing information on the most efficient solar panels. Environmental values are a significant factor to most of the global middle class. But only a tenth of this group sees them as the most important factor guiding purchases. Serving this crowd does often not equate to creating a highly successful business. Knowing this, ecological mass products must always fulfil also values other than environmental sustainability. Often very high quality products are also highly ecological. Environmental friendliness has become a part of the quality essence of products and services.

Myth 4: Only legislation can create change

Laws are central to creating new markets. Smoking indoors stopped only when it was banned under an EU directive. The motor vehicle tax and stricter construction regulations created the market for low-emission cars and energy-efficient buildings. A global carbon tax or emission trading would solve the whole climate crisis in one go, so let us stop fiddling around with green products. Everything will sort itself out once we have laws that put an end to the lousy behaviour of companies and consumers.

The triad of information, price and values is complemented, or actually refuted, by a fourth myth: “people will not change their behaviour before they have to.” It is true that a global carbon tax would solve a great part of the challenges on this planet and place all

“Environmental values are a significant factor to most of the global middle class. But only a tenth of this group sees them as the most important factor guiding purchases.”

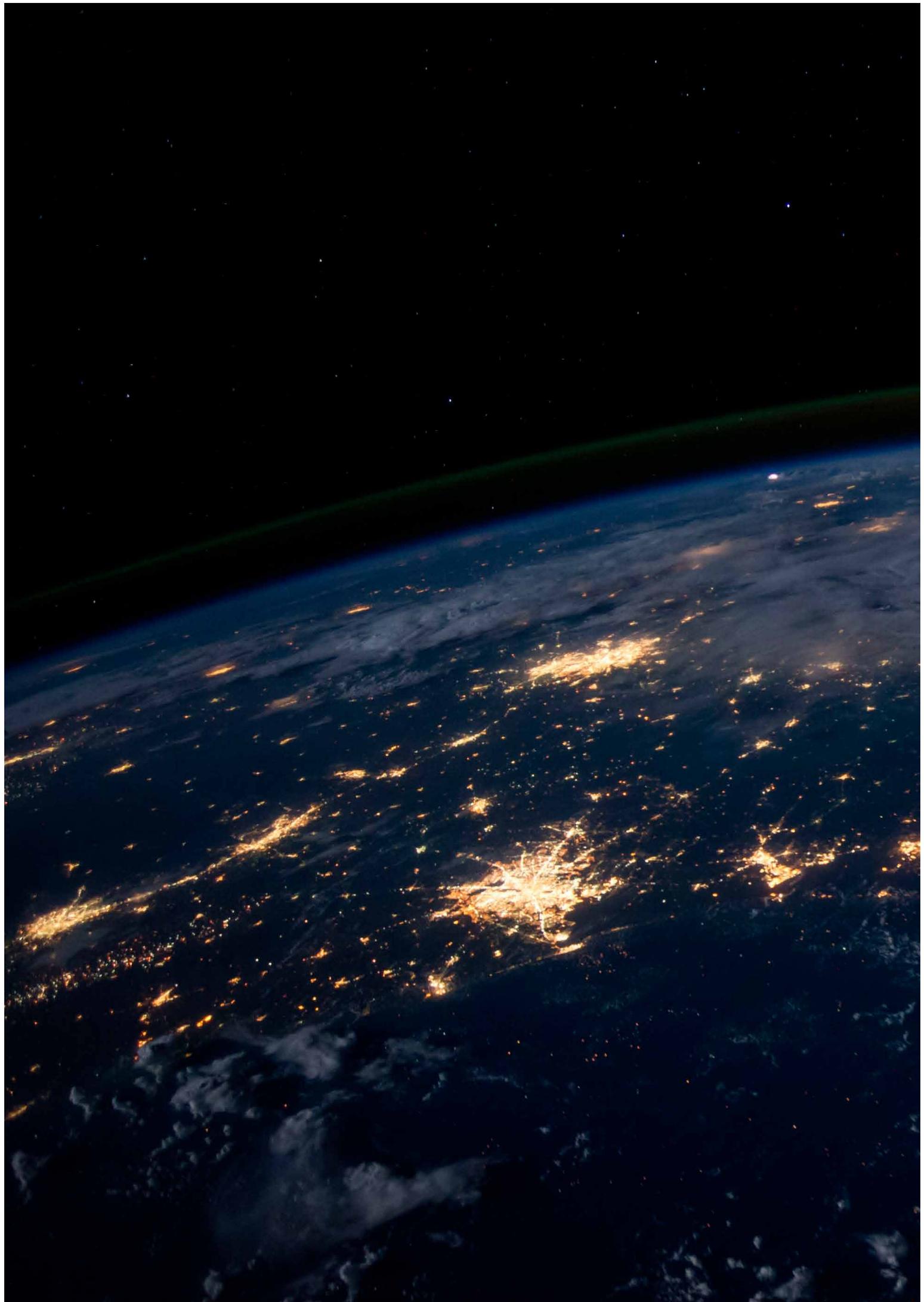
corporations on the same line. But such a development is not foreseen in coming years.

Most people do not actually want new regulations. The execution of restriction and sanction-based legislation is slow and difficult in wealthy contemporary societies where individual freedom is key. Banning smoking in public spaces required decades of campaigning, the support of the medical field, and a row of slight price increases for tobacco products. Regardless of the strong support of the non-smoking majority.

Examples from different fields of society show that legislation and product development around the same questions often develop in intertwined rapid spurts. It is hard to imagine a more enticing way to address politicians than new and successful business ideas. For legislation to change, it is important to get politicians to believe the change would create new jobs. In addition, politicians are people. They visit the same supermarkets and buy the same items as their voters.

And: the world has plenty of successful products that have not needed the support of new legislation. Skype started to offer free online telephone calls in 2003 and revolutionised the telephone business. The company’s technology was based on the same technical platform as the illegal music sharing service Kazaa. Traditional telephone operators sued Skype for facilitating free telephone calls and for luring customers away from telephone companies, but to no avail. Now Airbnb and Uber are undergoing similar battles in various countries.

When faced with such destructions of creativity, the job of governing bodies has been to react through laws and taxes. The developers of surprising hit products have often anticipated how legislation and taxation will progress and have then been able to skilfully reach people interested in niche markets, while at the same time finessing their product for the masses. When legislation finally catches up, these companies then have a strong head start on the market.



Climate change, the biggest business opportunity in the world

Climate change forces us to examine our lives and consumption patterns from a new perspective. The great shift will also bring with it great opportunities. In this next part, we present four models that will transform the business world.

1. The circular economy

In February 2005, Ellen MacArthur reached the shoreline of Ushant, an island off the north-westernmost point of France. She became the fastest solo long-distance circumnavigator of the globe. The 23-metre sailing boat was MacArthur's whole world for 71 days. It was crucial to optimise her use of electricity, food, water and fuel, as any miscalculation could have had dire consequences.

During her journey from Falmouth in the UK around the world, MacArthur realised that her sailing boat was a direct representation of humanity and the world's resources. If we use them recklessly, we are soon in trouble.

"The system we have created that squanders natural resources and produces waste is completely broken. Fortunately, we can replace it with a new, creative system where waste exists only as raw material for producing new things", MacArthur said in 2010 after creating a foundation carrying her name to support the circular economy. She was one of the first people to use the term "circular economy" for an economic system where materials circulate and waste has been minimised.

Around 10 years passed before everyone started talking about the circular economy. The European Commission has expressed its support for the concept, stating that it should become an alternative to the industrial economy that is known to waste natural resources. The public sectors of Northern European countries have supported numerous circular economy initiatives in recent years.

97% new, 3% used

The basic idea of the circular economy is that as natural resources become scarce and expensive, the recycling of products and materials creates new business opportunities. The model demands a new relationship with raw materials and waste. The circular economy works perfectly when the amount of waste becomes zero. Instead, waste is treated as raw material to create something new.

As an example of this, we can think about children's clothing and supplies. Many of the items we rack up for our little darlings end up having little use and children grow out of clothing quickly. Some 100 billion dollars a year are spent on supplies for children but only three percent of these are purchased second hand. If the methods of the circular economy – which at their simplest are flea markets and recycling groups on Facebook – were to function more efficiently, then 85 percent of clothing items would not end up in landfills as is the case currently.

It is easy to understand the circular economy regarding consumer items. Yet the system offers opportunities for growth in all sectors. Consultancy giant McKinsey forecasted already in 2014 that the circular economy would benefit the mechanical engineering industry as well forestry and the construction sector. There is a crying need for technology that can facilitate the circular economy.

Why is such a small fraction recycled? Why do 85 percent of jumpsuits for kids end up at the dump?

"It takes too much effort to trade, list things and ship", says CEO and co-founder of Swap.com, Juha Koponen.

The success of Swap.com is thanks to volume and ease. Users who want to get rid of things do not need to price them or bring them to a self-service flea market, nor invite an online flea market customer into their home to try something on. Swap.com charges 1.5 dollars and 30 percent of the selling price when a product is sold. Swap.com's turnover in 2017 was 16 million dollars. This is just one example of the opportunities of digitisation and the circular economy for smart-ups.

“We managed to push down transaction costs through automatisations and industrial processes”, Juha Koponen says. In other words, Swap.com managed to digitise the flea market.

When a consumer is given the chance to purchase second hand children’s wear easily online but cheaper than in-store prices, even clothing giants are facing pressure to look into the sustainability of their own actions.

H&M is one company that has taken the initiative in this respect. The fashion retailer started collecting used clothing items in 2013 and investing in research on using recycled materials. The direction is a praiseworthy one yet the results remain modest. There is a great need for better technology. With their current systems, it takes H&M 12 years to recycle 1,000 tonnes of clothing. The company produces the same amount of new clothing pieces in an hour. There is no end in sight for the growing mountain of clothes.

Five tips for mastering the circular economy

1. The circular economy is not about raw materials but mostly about technology. Almost all successful circular economy companies have patents related to mass data, logistics, or network management.

2. Consumer passions switch from one field to the next. First it was food origin, then clothing, and perhaps soon something else. Follow the moves made by pioneers in parallel fields and consider how they would translate to your own branch.

3. Almost everything can be bought recycled. Establish a selling point for used items to replace one that sells new items. The promise of buying back old items as well as selling one’s own products second hand are strong statements of quality that boost brand value.

4. Most consumers do not want to spend time on recycling. Make your service constantly easier than you first conceived it. Otherwise your user base will remain small.

5. A circular economy entrepreneur cannot compromise on quality or value. Your product needs to be just as good as your competitor’s, with a competitive price to match. The economic benefit comes from having cheaper raw material.

2. Dematerialisation

The trend of urbanisation is showing no signs of slowing down. This means that the demand for housing in cities is continuing to grow. Housing prices per square metre are on the rise and an even greater part of disposable income is being directed towards living costs. At the same time, housing produces the biggest part – even more than mobility – of everyday carbon emissions.

Still, the answer to the demand on urban housing cannot be “more of everything.” In the future, we will need to learn to produce more with less. Be it housing prices, the sufficiency of natural resources, or the carbon footprint of products, the desired solution lies in dematerialisation.

Dematerialisation has three forms. At its most typical, it is about replacing parts of a product or a service with more ecological components. One example of this, and an already somewhat dated one, is to replace business air travel with video calls. Another form of this trend is for a product to disappear completely. Some people already read books and newspapers on e-reading devices, providing the same product in a non-physical form. The third form is to flip the whole thinking around: what if the object of desire is a product-free lifestyle instead of a focus on owning stuff?

The central concept of dematerialisation is that the natural resource burden of products and services can be eased in a way that provides the consumer with additional value. An example of added value could be common spaces for densely built apartment buildings. There may be fewer square metres per household but residents could share spaces such as offices, children’s play areas, yoga rooms, or well-equipped kitchens.

Less of what adds to climate change

The Finnish start-up company Gold & Green Foods has developed a product called “pulled oats” and kicked off a boom in plant-based meat substitutes. Market shelves were raided for the sought-after product and soon also politicians were keen to remind us that the status quo of animal farming and climate change represent a dangerous combination.

The group of consumers interested in the environment, the ethicality of animal production, and their own health has grown in size and continues to do so. Vegetarian food is less often the rarity it was some years ago.

Pulled oats and other plant protein products inspired by it beat animal-based products not only in

terms of environmental friendliness: they also keep better and often do not even require heating. Thanks to talented communications efforts, pulled oats have become a hit product that has attracted long lines of both vegetarians and individuals with other diets. The branding has been a success. Lessening the environmental burden of one's diet is suddenly easy, tasty and trendy.

A great step forward indeed, as food matters. It accounts for approximately one fifth of emissions contributing to climate change. In terms of innovation, food has not seen the same developments achieved in the mobility and energy fields. Ten years ago, the emissions resulting from the production of one kilogram of cheese were equivalent to a 60-kilometre journey by passenger car. Now a car can drive 90 kilometres before it produces the same emissions volume as one kilogram of cheese. Engine efficiency has improved but a cow is still a cow.

Dematerialisation is assisted by the processes of digitisation and servitisation (see chapter 1.3). The use of natural resources decreases if one does not need to buy a car or tools. Mobile applications have made the shared use of products easier than before and therefore also more attractive.

The relationship between dematerialisation and the circular economy presented in the previous chapter is not without tension. In the circular economy, recycled materials are used to produce something new and this production often uses up energy and materials. As its name suggests, dematerialisation has the aim of decreasing the use of materials that require natural resources.

Five tips to master dematerialisation

1. Help the consumer get by with less. What is the consumer paying for? How can you help the consumer to get along with less? Come up with a solution that is just as good for the consumer as the original but that uses a significantly fewer natural resources.

2. Replace the most harmful raw material. Identify the raw material that puts the most strain on the environment. Consider ways to replace it. In the construction field this could be concrete, or in the food industry, beef.

3. If you don't replace the harmful material, at least cut it down. Using fewer raw materials is also part of dematerialisation. If you can, for instance, make a product more hollow, its production becomes more economical and more sustainable.

4. Often the necessary technology is already out there. Universities are bulging with research results by material innovators just waiting to be put to use. Find an unused solution and apply it to your own product.

5. Consider the options. What kind of service does your product offer? Could the same service be acquired in a different way? Come up with alternatives before your competitors.

3. The sharing economy

In the past, we have always thought of the economy in terms of ownership. That we can use our appliances and commodities whenever we and however we wish. This thinking is no longer valid.

A great part of the things we own are never in use. The utilisation rate of cars is around four percent and most cars tend to transport only one passenger at a time. In other words, cars could be used at 100 times the rate of their current efficiency. The utilisation rate of properties can only be guessed. Homes, shops and second homes lie empty while we are at work. Offices and homes are vacant when we take our summer holidays. And so on. We can claim that properties could be used four times more efficiently than the status quo.

A great number of companies have been founded that make use of these underused spaces. Their line of business falls under the idea of the sharing economy, meaning businesses that boost the utilisation rate of existing resources and commodities. Many such services are at least partly digital. They give their users the chance to share their belongings, time or skills often in exchange of a small fee or a return service.

Sharing has naturally always occurred but digital appliances have developed in recent years in a way that makes it effortless for people to now share information as well as to share products and services.

The sharing economy is one of the biggest success stories in the business world of the past years and something that is changing the modus operandi of many fields. At this point, we have perhaps rented several Airbnb apartments around Europe, but this is only the beginning. The turnover of the five biggest

sharing economy sectors in Europe are predicted to amount to 570 billion euros by 2025. The global total in 2015 was 13 billion euros.

Established companies, new business models

At the beginning of the *Futures Brief*, we described how car manufacturers have reacted to young people being less and less interested in driver's licences and cars. BMW's solution was to found a service called DriveNow in 2011 together with the car rental company Sixt.

DriveNow now operates in more than ten European cities. Their business model is simple. The company makes sure that there are enough cars, both electric and petrol-fueled, parked around the city at any given time, ideally in every block of the city. The user pays a membership fee and gains access to these cars. When the user wants a car, they can see all the available cars nearby on their mobile phone. Upon choosing the car, the user pays for its use by the minute or by the hour and leaves the car anywhere inside the operational area of the service when they are done.

Daimler-Benz – the manufacturer of Mercedes-Benz cars – and Citroën entered the German car sharing market at the same time as BMW. The entry of these giants ensured that in just a few years the marginal field of car sharing became an everyday service.

The service has been especially popular amongst 30 to 40-year-old urban dwellers who – unlike their parents – do not see the necessity in owning a car. DriveNow's early adopter user is a 30-something highly educated male with an interest in new products, services and technologies. For him, the barrier of entry is low: the membership fee is low, the cars are tidy and tanked up, and the user pays only for the kilometres driven. With a shared car, you can drive to the bar on a Saturday night, leave the car in the city centre and take a taxi home.

After the early adopters, other groups such as older people and families will discover car sharing services and eventually they will become entirely commonplace. The same effect is recurring in one city after the next. Around a half of the users replace their second car with a car sharing service, and the other half does not own a car.

Car sharing services not only offer a car but also a lifestyle: urban freedom, flexibility and trendiness. Not needing to worry about vehicle inspections reduces hassle and expense for drivers. Users pay only for membership and kilometres driven and the opportunity to grab a car in any given street corner comes for free.

"Car sharing is here to stay."

Car sharing will finally become an ordinary market where start-ups finetune their business models to carve out their own market niche amid the squeeze from the major players. In any case, car sharing is here to stay. The German consultancy Roland Berger has already stated that one in two car owners will be ready to give up their second car for car sharing in the future.

Five tips for mastering car sharing

1. Pinpoint the unused resource. Where is there demand unmet by the local supply?

2. The sharing economy needs a platform. You can test out your idea for instance in a Facebook group, but be prepared to build your own platform. Find out what kind of data the platform produces and how this can be used to enhance the service and the customer experience.

3. The sharing economy is based on trust. Re-assure your customer that they should let you be the one to share their belongings or skills. Create a sense of familiarity in the user experience.

4. Don't get depressed over insurance and legislation. Be prepared to accept that legislation is not yet ready for your business idea. Find out how other existing services have solved their legal and insurance issues.

5. The sharing economy is a distribution channel. If you work for an already existing company, consider how the current selection of products could be shared in a novel way. Examine the customer groups that your product currently does not reach for one reason or another. Offer them access to use a new product or service.

4. Optimisation

Trucks drive every fourth kilometre with an empty load. Three-quarters of the energy consumption of ships could be cut. Google lowered the energy use of their server centres by 15 percent by integrating artificial intelligence into their management.

The optimisation of businesses is made possible with sensor technology. Sensors can recognise, measure and collect data on a multitude of things. A subway station can track how many people are walking through each respective door. Waste bins can transmit information on how full they are. Elevators can report a technical failure directly to the command centre.

By optimising resources we can cut costs and reduce harmful environmental impact. The most important thing is to slice off loose ends and surpluses. To cook only as much as is wise to eat. To heat an apartment when it is being used. Or an even more everyday example: to switch off the lights when no-one is in the room.

Optimisation is a basic starting point for the smart city (see chapter 1.4). Be the topic mobility, heating or anything else, energy should not be wasted.

This does not, however, mean that a resource-efficient product should in any way be worse or that service quality should be reduced. The consumer who gets a smaller electricity bill or a more ecological and cheaper way of parking will quickly return to the previous product or service if they are not happy with the new one.

Instead, one should strive to achieve the witty innovativeness of a lazybones pinchpenny: how to handle tasks with a minimal effort and use of energy. To find new value but also do with less than before. To make a smarter product of better quality, but with lower costs. Easy, right?

Five tips for mastering optimisation

1. Optimisation is based on knowledge. Reach out for the best data in your market or start collecting it yourself. The public sector also produces plenty of useful and free data.

2. Pick the single most interesting topic. Already at first glance, sets of data can include plenty of possibly profitable topics. To start a business, pick just one and start scaling it gradually.

3. Replace material investments. Develop your business models in a direction that helps avoid expensive, material investments.

4. Consumers need rationality. The consumer is at their happiest if they only pay for what they use and avoid having to own something.

5. A masterful service experience. Finetune your service experience to the max. A consumer might decide to hold on to their own car simply because the registration process for a car sharing application is too complicated.

To conclude: Towards new, climate-friendlier markets

This Futures Brief has presented the forces that guide the creation of resource-saving products and services. The smart-up field is still in its infancy, but it should be seen as one way to battle climate change. At the same time, it is important to remember that consumer attitudes cannot be changed by offering asceticism or scarcity but rather quality, health and ease of use.

Companies have an upper hand in directing consumer behaviour towards a climate-friendlier direction, as long as they find new markets to open. Legislation should serve to facilitate this line of development and not slow it down. There is already a sense of urgency attached to efforts to loosen the regulations that complicate the development of the sharing economy and the circular economy.

Collaboration between different actors creates a momentum for new types of thinking and business. A small smart-up can offer a novel and innovative business idea that a more traditional major company can then use their muscles to advance. A smart-up gains a benefit from the position of the large company and a large company can then nudge their whole field into a more resource-efficient direction through a new product.

In many countries, the markets for new products and services are typically small to begin with. It remains to be seen which field is the next to experience a boom and what the solutions at hand will be. It is, however, clear that models of shared use and the sharing economy add to the value of sustainable and high-quality products even more. This is a worthwhile route to follow even if the one innovative business model that will revolutionise one's own field still proves to be elusive.

“Collaboration between different actors creates a momentum for new types of thinking and business.”

Recommendations

Incubators and accelerators: The topic of resource-smartness requires some specific familiarisation. Business incubators should offer guidance in navigating the regulation jungle, understanding consumer attitudes, and the marketing of new products.

Investors: Now is exactly the right moment! According to a forecast by Richard Florida, some 75 billion dollars have been invested in smart-ups since 2016, amounting to 17% of global capital investments. The financing is currently focused on China and the United States, and more precisely global cities like San Francisco, Beijing and Amsterdam. (<https://www.citylab.com/life/2018/07/the-rise-of-urban-tech/564653/>)

Public sector: R&D funding should be directed to combatting climate change and developing products and services to enhance this mission – and not really anything else. More specifically, funding bodies should take note of collaborative initiatives so that as many companies and other actors as possible can participate in coming up with new solutions and make use of them.



"R&D funding should be directed to combatting climate change and developing products and services to enhance this mission - and not really anything else."

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