



BILLERUDKORSNÄS

Challenging Conventional Packaging

Trends that shape Future Business Perspectives

The speed of change is at record levels, start-ups reach billion valuations much quicker and the power of consumers appears stronger than ever. Understanding and adapting to trends and major developments in the world is key to growth and success. For BillerudKorsnäs, we are now strengthening our outside-in perspective. By looking at the world around us, its people, the corporations and the ambitions of politicians to change the world, we will gain insights that helps us shape the future of our business.

As the world is changing around us, BillerudKorsnäs continues to challenge conventional packaging for a sustainable future. In this report we will present six *megatrends* that influence the world at large, and will be most influential for our business going forward.

While these megatrends continue to shape our world, needless to say they will have an effect on how we do business in the future, not only in packaging, but across all industries. To take it one step further, this report also identifies six *Future Business Perspectives* that relates to the megatrends that we all recognize are having an impact on how the world is developing. As you read this report, you will notice connections to one or several megatrends in each Future Business Perspective, as it is never a single force that drives change and development in business.

This trend report is part of the foundation for BillerudKorsnäs way forward. In the coming year, we will work with customers, partners and other stakeholders on identifying packaging opportunities for BillerudKorsnäs and the packaging industry as a whole, in order to make sure we are ready for the challenges to come. By aligning business area targets, trends, consumer insights and R&D initiatives, we continue to challenge conventional packaging and shape the future of packaging!

Enjoy your reading and future discussions,
Jon & Maija

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Jon Haag
 Director Consumer Insights
jon.haag@billerudkorsnas.com
 +46 70 207 25 57
www.billerudkorsnas.com

Maija Bigestans
 Market Intelligence Manager
maija.bigestans@billerudkorsnas.com
 +46 72 509 42 14
www.billerudkorsnas.com

What are megatrends?

What is shaping the world?

Megatrends are large, transformative, global forces that define the future by having a far-reaching impact on business, economies, industries, societies and individuals. Think of megatrends as a strong current in the river – it is easy to follow and adapt to, but hard to struggle against. We are quite familiar with the global megatrends that are currently shaping our world, but it is helpful to define and describe them in order to identify implications and opportunities that they bring.

10 to 20 year perspective

What are Future Business Perspectives?

How does this affect organizations?

By understanding the global megatrends, it is possible to predict what will be (or should be) new business perspectives in the coming 5–10 years. These "Future Business Perspectives" are highly interesting topics for businesses in general, for the packaging industry and of course for Billerud-Korsnäs specifically. Learnings and insights from discussions regarding these perspectives will be valuable in our development and in creating dynamic strategies for the future.

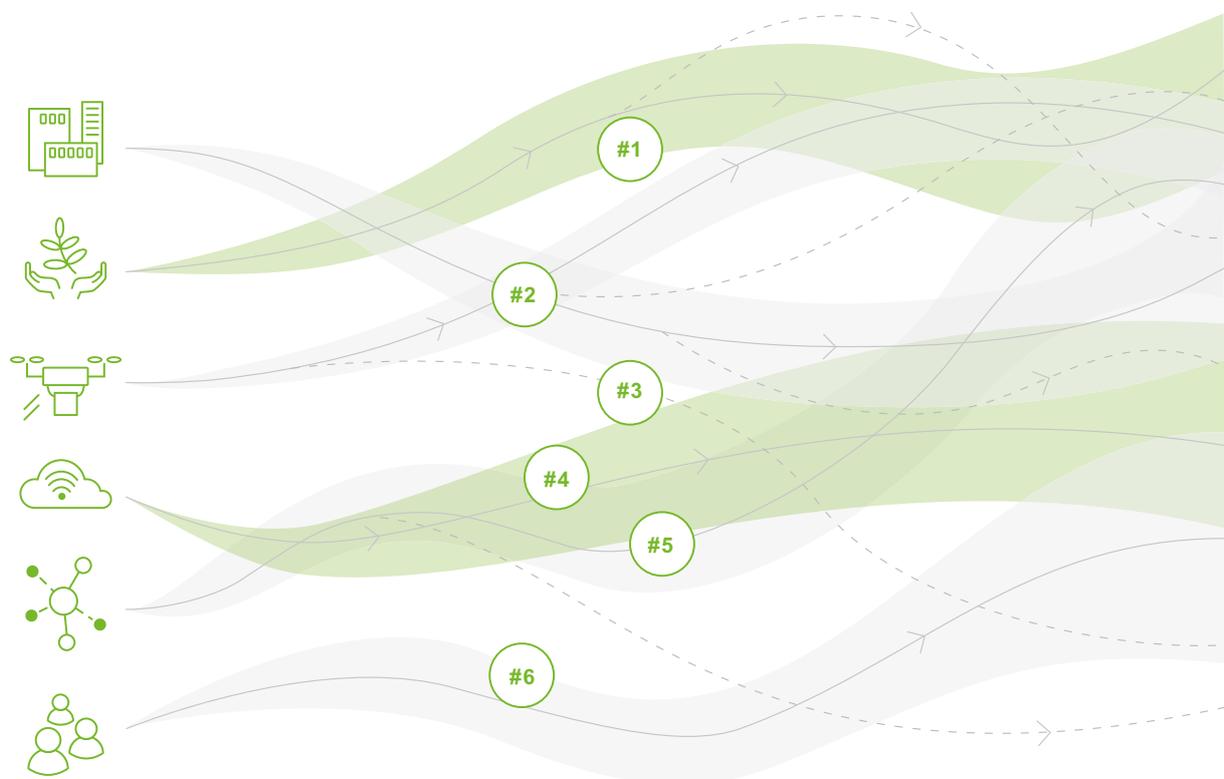
5 to 10 year perspective

What are packaging opportunities?

Where should we focus our business?

Understanding megatrends and the future business perspectives provides us with a platform for identifying and responding to opportunities within our own sector and for our business. These are the practical implications of our deeper understanding of the world, our customers and our customers' customers, and we will identify and prioritise these opportunities in order to innovate for the future.

1 to 5 year perspective



Megatrends are a pattern or movement that has a major impact on business or society as a whole.

Future Business Perspectives describe how megatrends change and impact organizations.

Packaging opportunities translate future business perspectives into day-to-day innovation, business development & sales activities.

Global megatrends – What is shaping our world?

Urbanisation



A larger share of people will live in megacities with more than 10 million citizens – a development which directly impacts balance of power, needs and supply in the coming decades.

Urbanisation is not a new phenomenon. Beginning in the late 18th century, this development is now escalating as people are moving to cities in ever-increasing numbers.

A higher degree of urbanisation means a concentration of GDP, higher spending and consumption and therefore more development in the most urban regions/countries. The high level of consumption puts tremendous pressure on the ecosystem around megacities. To meet the needs of millions of people, with minimal negative impact on environment, is a true challenge. People in cities also have a different lifestyle – in general they suffer from more stress and more frequently live in single households than rural citizens. This leads to patterns of consumption that put even more pressure on these cities.

Many of the world's largest megacities are working together in the network C40 to address the challenge of climate change.

Sustainability in action everywhere



To act with benefits for planet, people and profit in mind will be a necessity in everything we do, for consumers, politicians and companies to survive in the long run.

By August 8th of 2016, global consumption has exceeded the resources available this year. In order to provide for our consumption, 1.6 planets are needed, when we only have the one. Sustainability itself is

not merely a trend anymore, but rather a prerequisite for our future development.

The global action we see can be described as “innovate to zero”.

Consumers, politicians and companies are demanding

of themselves and each other to strive for sustainable consumption and to develop solutions that allow this while being profitable and satisfying consumer needs.

FACT The UN SDG's (Sustainable Development Goals) were adopted by 193 countries in September 2015, at the UN General Assembly for the 2030 Agenda for Sustainable Development. They provide very clear actions for achieving sustainability on a global scale.

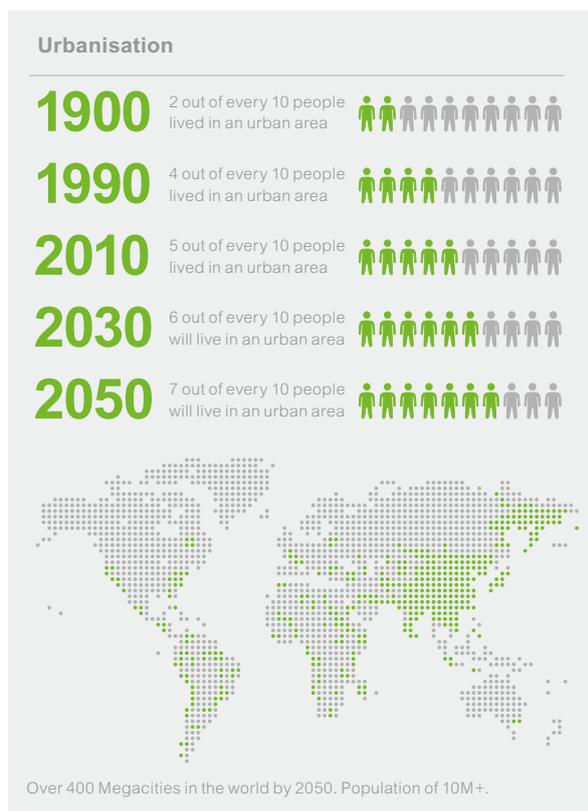
Mobility revolution



The increasing mobility of people and goods is driven by global reach, lack of borders and fast deliveries, and is strongly influenced by digitalisation and connectivity.

In the future, it has to become possible to transport people and goods across the globe, with much lower footprint and traffic disturbance than today. Not only do we expect to be able to travel and work anywhere at any time, we also assume that we can purchase and receive goods from anywhere at any time.

Consumers are asking for both “locally produced” and “globally delivered”, leading to new modes of transportation and distribution in order to constantly meet the demands. For the first mile delivery, there is a clear trend towards bigger and more automated warehouses, that cover national and regional markets as the first point of distribution. For the last mile, we see innovative approaches that take advantage of new technologies, empower the consumer and disrupt market as we know it.



Digitalisation & connectivity

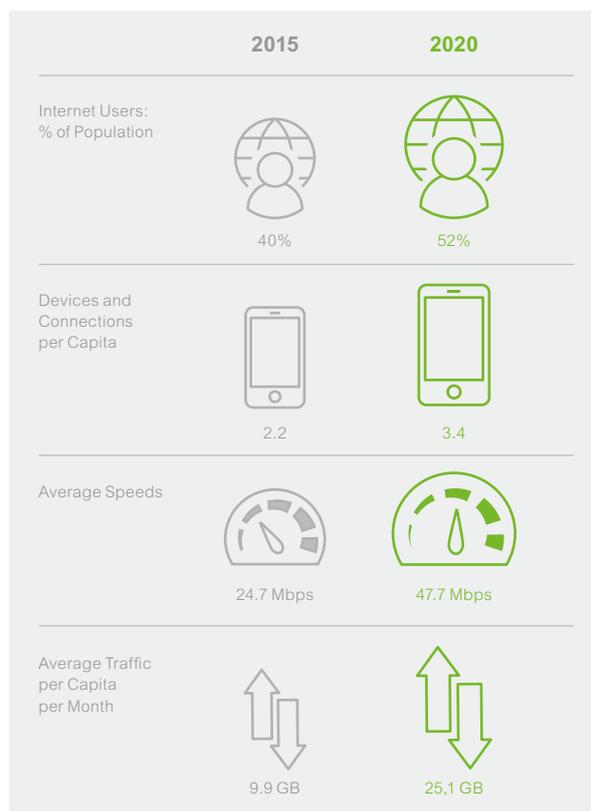


Everything and everyone can be connected anywhere and anytime – creating new opportunities for digital information sharing and consumer empowerment.

The number of connected devices has now passed the number of people on the planet, and the pace is not slowing down. Technological developments have opened up a new world of possibilities. Analysing and processing big data, that is created through connectivity, can lead to increased efficiency, precision in segmentation, customisation of information as well as products and services and much more.

The Internet of Things will enable information exchange with everyday objects far beyond what is possible today, creating entirely new possibilities for after-markets, additional services and real-time interaction.

While connectivity enables corporations to collect and process information like never before, it also leads to consumers taking more and more control. Peer-to-peer recommendations are becoming more important in making choices, and we share a complaint with the general public rather than with customer service. Brand owners need to find new ways to interact with their customers, on their terms.



Transformation of traditional value chains



The value chain concept as we know it is soon outdated. The market dynamics are changing fast, and entrepreneurs, new networks and new business models are the rising stars.

In a world where we can transport anything from anywhere, and where digitalisation and connectivity are the new standard, value chains are more and more turning into value networks. The value chain theory has since the 1980's been a widely adopted truth about how value is delivered: a specific order of activities, in order for a value chain to manufacture a set of products and services to the market most effectively. Now, Spotify delivers music directly to consumers, making the record stores obsolete. Airbnb can offer perfect living in any city in competition with Hilton and Radisson, without owning any property.

Digitalisation and the emergence of business models where we do not pay for ownership anymore, spurs entrepreneurs to challenge old ways of doing business. The pace of transformation is increasing rapidly, giving extra room on the market for entrepreneurs, small businesses and new ideas. These changes give rise to fears of losing relevance and becoming obsolete among established companies, requiring of them to think differently and innovate.

Beyond demographics



Age, gender and origin are no longer the key to defining consumers. People want and expect customized offerings that are based on their needs and their search for experiences.

The way to define target groups and how to communicate with them has been almost standardised since the 1960's, when modern marketing and advertising was born. Audiences have been described and addressed in demographic terms – gender, age, origin, family size etc.

Now we've entered into a new era much more focused on individualisation, adapting to our lifestyle and our aspirations. There is a need for understanding people's value systems and preferences, more than their demographic descriptors. The target group stereotypes of before are no longer valid; e.g. the playlists of a 13 year old and a 60 year old person has >40% overlap today. Focusing on and understanding users is crucial in delivering products and services that provide a really good experience.

Future Business Perspectives

#1 Problem-solving for megacities

Megacities of the future will have 2/3 of the world's population, predominantly in Asia and Africa, creating geographic shifts of power and challenges to operate in a sustainable manner.

Today, cities account for close to 2/3 of the world's energy consumption, and more than 70% of global greenhouse gas emissions. Due to the fact that megacities mainly consume resources, while not contributing as much, there will be high pressure on these cities to achieve sustainable development. Companies that can succeed in holistic problem-solving for megacities will prosper.

Think in terms of:

- Securing efficient supply of food & beverage and other goods
- Recycling systems within cities, with integrated production of new products
- Minimizing waste of high volume products, e.g. food, building materials and packaging
- Replacing fossil products with low recycling rate (plastic packaging) with renewable products with high recycling rates (fibre-based packaging)

Packaging can play a central role in many of the challenges that will arise in megacities, such as sustainability. Packaging solutions need to answer to the challenges of transporting goods into and inside cities where over 10 million people have different needs, but all require food and beverage: increasing demand of longtransport food (like fruits and frozen food), higher demands on locally produced food, more on-the-go consumption for big city stress and portion packs for smaller households. All packaging materials must be easy to recycle, possibly in city-close sites producing new products or materials directly for the city.



FACT Every year in the US alone, 29 billion plastic bottles of water are produced, and less than 1 out of 6 goes into recycling (National Geographic).

DID YOU KNOW? In the UK, recycling has been simplified as most street corners offer a single bin with three options for waste disposal; one for non-recyclable, one for paper and one for plastic bottles.

EXAMPLE Repara Ciudad was created by Open Data Cities SL in Spain, to support large city administration by citizen engagement. Members of the public can use an app to report problems or improvement points simply and easily, so that local authorities can react more swiftly, focusing on the issues that affect and concern people the most, and informing them of the action taken.



#2 Enable helpful brands to succeed

Everyone wants to be part of a solution, not a problem. The true winners will be the companies that help improve life for everyone on the planet.

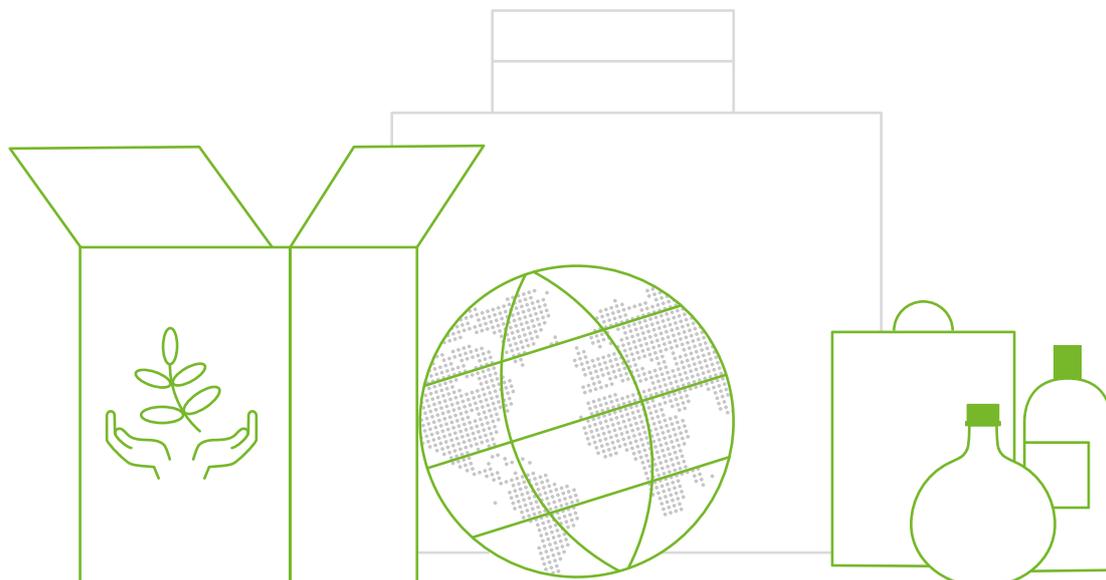
There is an increasing demand on companies to contribute to a sustainable future for all which will be linked to the long-term sustainability of their business case. Consumers are increasingly letting contribution to society guide their consumption, millennials care more about purpose than pay when looking for work, and investors see sustainability performance as an indication of future success. Helpful brands are purpose driven; acting, thinking and communicating according to their purpose, with a clear contribution to the world.

Packaging can be a strategic tool for helpful brands, in telling the story of what it contains and what good it will do for the world, but also by not creating feelings of guilt for the consumer. Often, packaging is seen as a “necessary evil” in terms of environmental impact. Packaging that minimises waste and at the same time is recyclable, biodegradable, and comes from renewable materials will create positive impact, by supporting the success of helpful brands. Packaging that reduces food waste or other product waste in an obvious way, will go from being seen as waste to being seen as part of the solution.

FACT 66% of consumers say they are willing to pay more for sustainable brands (Nielsen; Oct 2015)

DID YOU KNOW? In the US, brand owners such as P&G, Nestlé and Walmart are joining forces through an effort to simplify recycling. How2Recycle is a smart labelling system used on products, their aim is to collectively increase consumer knowledge about recycling.

EXAMPLE Toms Shoes matches every pair of shoes purchased with a new pair of shoes for a child in need, in an effort to contribute as well as make their customers become much more conscious in their consumption.



#3 Design for no humans

Far more activities in our life and in society will take place without a human being involved at all. This provides opportunities to design and create solutions for “100% automation”.

Many products will be shipped in fully automated distribution networks. Already, DHL uses robots to handle pick & pack of orders in some warehouses (internal automation) and drones to deliver goods in the Alps or to islands (external automation), in order to save time, costs and to increase the delivery precision.

Most of the large automotive companies (like GE, Toyota, BMW and Volvo) and IT companies (like Google, IBM and Amazon) invest heavily in driverless cars and other vehicles. The first laws have been adopted for driverless vehicles; first out was Nevada (US), where a Mercedes E-class can now drive autonomously on the streets of Las Vegas. Daimler has done the same testing for trucks, and soon we will have a mobility revolution shipping goods and people in a much more effective and controlled way than before.

In **packaging** there are many interesting areas to address with regards to this development. When shopping online, you want to get goods delivered quickly, but without the consequence of heavy truck traffic. Drones and small robots could be one way to increase efficiency and reduce environmental footprint for last mile delivery. Large warehouses already have high degrees of automation, but better and more optimised packaging could increase the throughput in most warehouses and still minimise errors or damaged goods. Using intelligent packaging to give automation systems the right information could push the limits of “innovate to zero” and cost efficiency of “100% automation” significantly.

FACT Analysis shows that 47% of occupations in advanced economies are at “high risk” of being automated in the next 20 years (The Economist; July 2016).

DID YOU KNOW? In the Swedish town of Viken, the first fully unmanned grocery store has been opened, offering customers access through an app linking to their banking ID. This gives customers access to groceries without the limitations of opening hours, in a community where the convenience store has been closed.

EXAMPLE Prime Air, the future delivery system in the works for giant e-retailer Amazon, plans to deliver packages to customers in 30 minutes or less using drones, but also to increase the overall safety and efficiency of the transportation system.



4 Generate, share and profit from data

In a world where everything is connected, there will be many benefits to optimising and speeding up operations and processes, by clever use of data and smart algorithms.

The overload of data that exists today is a frustration for many companies, although, used correctly it could be a profit generator. The most obvious areas where the data could be a great asset relate to increased efficiency. Machine learning is one area in full bloom, where manufacturing equipment can tune itself into optimal production windows. Supply chain optimisation for just-in-time delivery is another well-developed area that can save a lot of costs. The possibilities of using big data to create more efficient processes are endless.

But there are also more progressive ways data can be used to create new business opportunities, intensified and improved customer interaction and increased sales. Predictive sales, where activities online can be monitored to find the perfect timing for a sales offer, is starting to grow. In some industries the exchanges of data between suppliers and customers have reached a high level, making it possible to support each other in better ways to find win-win opportunities. The flow of information created through connectivity and the Internet of Things can be used to provide additional services (e.g problem-solving, updates, providing useful information in real time) to customers, and to prolong the relationship far beyond the product delivery.

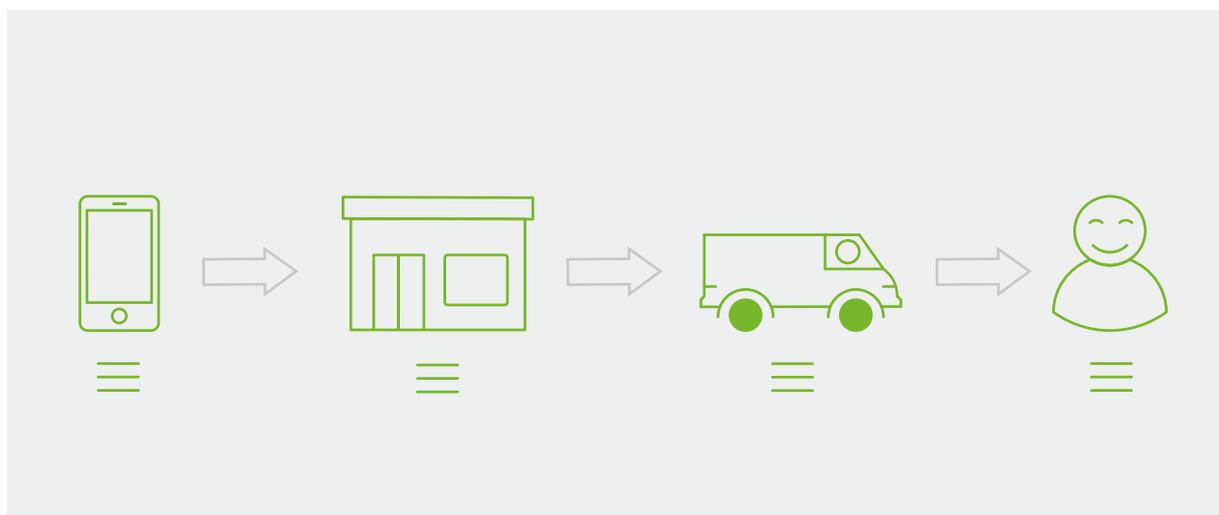
In the **packaging** area, we can do much to create intelligent packaging by connectivity. What is the value of knowing in detail how your products are shipped from your warehouse, before being delivered to the final customer in a more omni-channel world? That knowledge could be crucial to design primary and secondary packaging to fit real world requirements. Information like this will help to design purposeful packaging, and give evidence of how much packaging really influences your business performance. The possibility to communicate throughout the process from manufacturing to long after delivery creates an interesting role for packaging as a communication tool with strategic importance in long-term, sustainable customer relations.

FACT 89% of companies believe that big data will revolutionise business in the same way that the Internet did (Accenture Digital, 2014)



DID YOU KNOW? Mevia IT Systems has developed packaging that communicates. The intelligent and connected blister and pill dispenser sends information to track dosage and usage of products, helping patients stay healthier, while lowering costs for society and pharmaceutical companies. As the module is re-used and the cardboard it's fitted on is re-cycled, the packaging produces no electronic waste.

EXAMPLE Scania collects data from trucks on energy consumption, truck driver behavior, and weather conditions, in combination with a topographic map linked to GPS. This solution alone can lower energy consumption by 5-20% for every truck by informing the driver of when to gas, when to brake etc, and is offered as "Scania Active Prediction" service.



#5 Capture the real value

To sustain value creation in the future, you need to meet the right needs, for the right person, with the most suitable business model.

To create more value and to capture more value, many companies must start to make business with the stakeholder with the highest benefits from their offerings. Historically, the main measure of benefit has been monetary, but as sustainability and individualisation grow in importance, new metrics will change the way success is measured. The barriers for entry to many markets are nowadays often very low, with the only equipment needed being a laptop and your idea and skills. This will lead to new ways of approaching the market, designing the value-networks and determining who is actually your paying customer.

In a world where we need to minimise the outtake of planetary resources and consume less, there is a great opportunity based on digitalisation & connectivity, together with new business models, to create and capture more value, while saving resources. Creating more value within a value chain, by cross-linking value chains (health care + e-business = e-health) or by reinventing the value chain entirely by finding new ways to approach the customer.

For **packaging**, the new business models that are emerging create great possibilities for innovative new approaches, solutions and client co-operations. Being ever closer to the end user requires a more holistic perspective on packaging and its role in society, in business and in the everyday life of individuals. Viewing the package as part of the value network, as a valuable information carrier as well as supporting efficiency, quality and sustainability, will make it a strategic resource for new and existing businesses. There is huge potential within the area of Intelligent Packaging, when millions of packages around the world start to create useful data for, for example, predicting business or tracking customer satisfaction, in order to capture more value.

FACT Airbnb averages 425 000 guests per night, nearly 22% more than Hilton Worldwide, without owning any property but merely providing a digital service platform that matches privately owned rooms and apartments with travelers



DID YOU KNOW? Danish supermarket Netto prefers to sell the food that is about to expire, rather than throw it away. Their app gives customers the opportunity to find good deals on food across Denmark, reducing food waste while strengthening their customer relations.

EXAMPLE Tesla is creating a business wholly focused on the goal of sustainability, and while doing it is also changing the automotive industry as we know it. Being a car provider that also supports both beneficial charging stations (with the electricity included for Tesla owners), adaptable insurance according to usage and adjusting car performance, Tesla is providing customers with a holistic, sustainable transportation solution.



#6 Make it user-oriented for real

Truly understanding the needs and preferences of the customer will be far more important than demographics or product characteristics.

Technology push and engineers focused on understanding the technical possibilities in detail have been the trend in the last decades. Now it has reached a tipping point, where “human sciences” are almost forgotten. Still, any new product or service launched will fail if it is not fully understood and embraced by the user. Therefore, it is no longer enough to know or describe customers in purely demographic terms – we need to know and understand their preferences, values, behaviours etc.

If there is a deeper analysis and understanding of users, touchpoints and user interaction, there will be plenty of opportunity to change behaviors, both among businesses and among consumers. More and more often, changed behaviour is exactly what can create value (i.e. Apple iPod -> iTunes -> Spotify as an example) or establish more sustainable alternatives (electric cars – electric car pools -> less cars per capita with less carbon footprint per km).

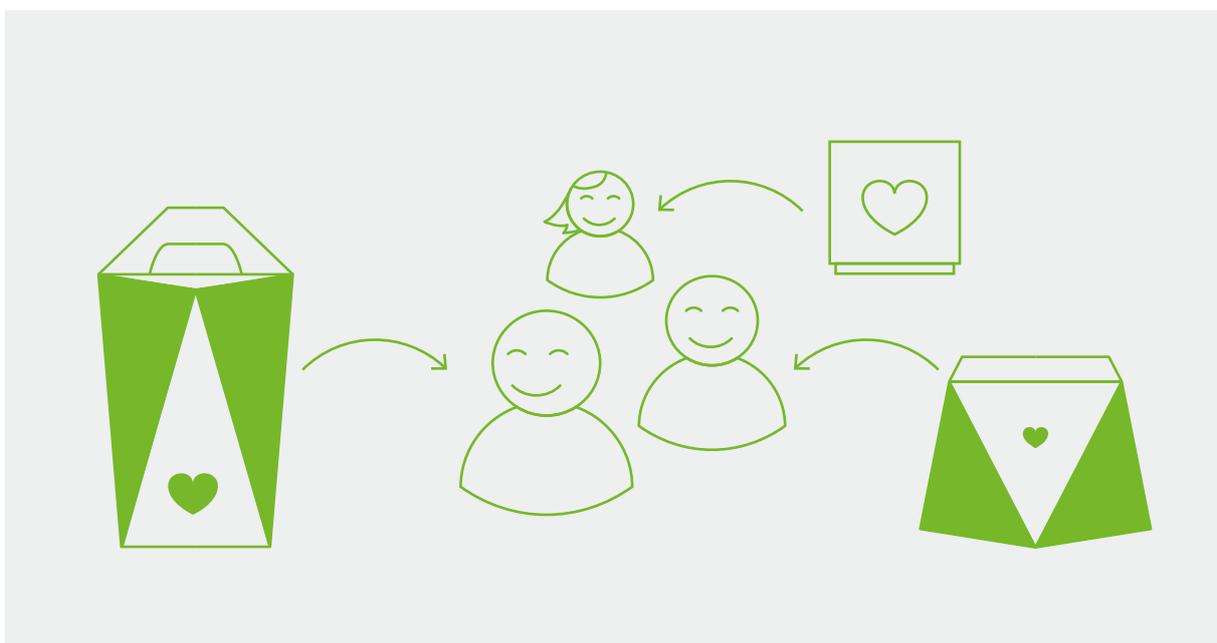
In **packaging**, we already know that user-oriented design is important, but far from everyone has that knowledge. For e-commerce, packaging has a lot more to contribute to improve customer experience. When shoppers visit stores less frequently and get orders delivered, the brand experience comes with the packaging. Packaging could create more happy customers, it could increase loyalty and support repeat business for an online store. Packaging can even become an interactive salesman, telling the customer how to use the product in the best way, and providing other additional services. Knowing the end user will be a prerequisite for creating packaging solutions that help build strong brands and customer relations.

FACT 89% of businesses are soon expected to compete mainly on customer experience (Gartner Surveys, October 2014)



DID YOU KNOW? Without changing the product, but with a thorough understanding of its target audiences, CocaCola through its “Share a Coke”-campaign made people basically tear down the shelves in the supermarkets, to find their name on a bottle or can.

EXAMPLE Remember when Nokia was one of two choices when buying a mobile phone? Widely hailed for their consumer understanding and their “Connecting people” consumer insight, Nokia still managed to miss the mark when it comes to truly understanding the end user, and the development of a market, thus losing a clear market leader-position.



Final Thoughts

Identifying and analysing megatrends and future business perspectives is a starting point – it enables us to know that when we take action, we are doing it in the right direction, with a knowledge of what is happening right now and a reasonably good idea of what the future may bring. Now, moving forward, we can use the material presented here as a basis for discussion, knowledge exchange, innovation and idea generation that lets us all be part of a better, more sustainable future.

As we continue to explore packaging opportunities, we must collaborate and challenge ourselves as well as our suppliers, partners and customers. Based on the Future Business Perspectives we now start to define our way forward. In this process, we need to ask questions like:

- Are we, and the business partners we choose to work with, contributing to a better society?
- What do we need to do in order to improve our processes and increase efficiency?
- Are you prepared for the next phase of the digital and mobility revolution? Which developments, both technical and behavioral, will have the biggest impact on your business?
- Are there opportunities to create more value for the end user of our products and services?
- How can we get to know our customers and their customers, and understand their needs and preferences better, so that we can create lasting and rewarding relationships with the stakeholders benefit the most from better packaging?

By exploring the future of the world at large, of business in general and of packaging in particular, we can innovate and develop solutions to some of the major problems and opportunities that are facing us. We will make packaging become a hero for more brands and more consumers.

We invite you to join us in creating a sustainable future by challenging conventional packaging!

BillerudKorsnäs

For more information and to get inspired, visit www.challengeconventional.com

At BillerudKorsnäs, we have taken the first steps towards the future, and some of our focus areas could be:

PACKAGING AGAINST FOOD WASTE

Example: Axello ZAP solution for non-dusting bags. Customized corrugated solutions for kiwi, grapes, apples and tomatoes to drastically reduce losses in fruit and vegetables distribution.

CIRCULAR ECONOMY PACKAGING

Example: Empower the circularity of forest-based packaging and create biogenic carbon-based business models. Develop better recycling systems for utilizing our best fibres again in a purposeful manner (D-sack is one example, first packaging, then reinforcement for years). Liquid packaging cartons could need better recycling solutions, to utilise the fibres for food or luxury packaging again.

E-COMMERCE PACKAGING

Example: Develop grocery bag solutions for home delivery or click n collect in online food shopping. Creating packaging solutions with improved opening experience at delivery to your doorstep. Packaging for high automation warehouses for more effective pick and pack by robots.

USER INTERACTION PACKAGING

Example: Packaging, where we develop a platform for unique packaging ID (UID) to track and secure supply chain control as well as consumer interaction solutions, like anti-counterfeit or story-telling. Internet of Packaging, where the packaging is the touchpoint for information generation and consumer feedback.