



SPRING

2020

# Board

METSÄ BOARD PROFESSIONAL MAGAZINE

## THE FUTURE OF FAST FOOD PACKAGING



Plastic-free  
eco-barrier  
paperboard  
protects food  
products

Barilla sets  
strong focus on  
sustainability

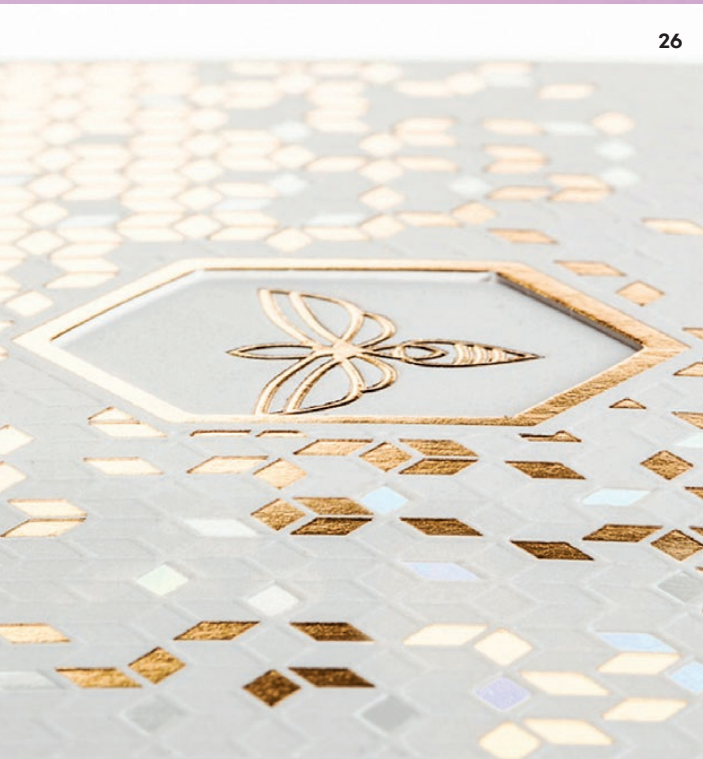
Towards  
fossil-free  
mills

## Paperboard trends

Urbanisation and population growth are increasing the amount of packaging. Brands can make a difference.



10



26

### SHORTS

Fibre-based food tray, Sustainable Nemus Futurum, Paperboard trends, Artificial intelligence, Metsä Spring's new developments, New sheeting line in Äänekoski and interactive impact report. **page 4**

### SUSTAINABLE SOLUTIONS

Metsä Board is shifting away from fossil fuels to renewable energy. **page 8**

### BRAND DEVELOPMENT

Barilla – committed to the well-being of people and the Earth. **page 24**

### A WORKPLACE OF AN ARTIST

Terri Goldstein says that sustainable packaging is also smart business. **page 32**

### THE ART OF PACKAGING

Metsä Board's Better with Less – Design Challenge challenges designers to create new packaging solutions. **page 10**



### ENABLER

Arctic Blue Gin's wonderful package is inspired by Finnish winter and Northern Lights. **page 14**

### GREEN CHOICE

Impressive packaging increased the value of Korpikuusikko honey. **page 26**

### LESS IS MORE

Lighter package, big savings. **page 34**

### ENVIRONMENT

The EU is banning single-use plastic cutlery, cotton buds, straws and stirrers by 2021. **page 22**

### SERVICES

Metsä Board's Excellence Centre opens in 2020. **page 28**

### FACTS & FIGURES

Product portfolio & Metsä Board in numbers. **page 35**

## Theme:

### TAKEAWAY IS CHANGING

Contradictory trends are driving the takeaway food market.  
page 16

### FOOD INDUSTRY GOES PLASTIC-FREE

Eco-barrier is a plastic-free paperboard that is safe for direct food contact.  
page 18

# FOOD

## The circular economy in action

Since its launch in October 2018, more than 400 organizations – representing over 20% of plastic packaging volume used globally – have signed the New Plastics Economy Global Commitment. This signals a significant change.

The aim of the commitment is not to ban plastic altogether. Instead, it is to reconsider what kind of packaging solutions best support the shift towards a circular economy.

One should look at the whole lifecycle and carbon footprint of both the product as well as the packaging that goes with it, from the origin of raw materials to the way they are designed, produced, transported, and how they can be recycled or reused after use.

Paperboard is a perfect example of the circular economy already in action. It is recyclable and widely recycled, compostable, affordable, and to some extent, paperboard packaging can be reused.

Not all plastic packaging is directly replaceable with paperboard. Many consumer goods, especially food, require barrier properties in their packaging against oil, grease, water, humidity, or air. We have been addressing these needs with an eco-barrier solution: a plastic-free barrier board with all the benefits of sustainable paperboard. Most importantly, it is easy to recycle.

In the next five to ten years, we will be seeing a lot of alternative materials being developed and tested until the most feasible solutions in various end-use categories have settled.

At Metsä Board, we will continue the development together with our customers actively, both in terms of material and design solutions. It will be an exciting journey.

**Mika Joukio**

## Editorial



# SHORTS

## Fibre-based recyclable food tray with 85% less plastic

Jospak's new recyclable paperboard tray is a packaging solution of the future! To make a sustainable lifestyle more accessible, Jospak, a start-up from Finland, launched a fibre-based food tray that won the WorldStar Gold Sustainability Award 2019 as well as WorldStar Food category award 2019.

The award-winning Jospak® tray combines the best functionalities of board and plastic and reduces the use of plastic by up to 85% compared to traditional plastic food trays.

Its basic structure is made from corrugated board using Metsä Board's white kraftliner, which is made from fresh, renewable fibre sourced from sustainably managed northern forests. The microflute used in the tray was supplied by UK-based DS Smith Sheetfeeding. The tray is suitable for various food products such as fresh and processed meat, poultry, vegan protein products, and ready meals. It is microwave safe, and disposal is convenient as the plastic liner can be peeled off easily, and both materials can be recycled.



For further information please contact  
Tarja Heikkilä, Managing Director at  
Jospak, [tarja.heikkila@jospak.com](mailto:tarja.heikkila@jospak.com)

## Paperboard trends

Consumer preferences drive use of more sustainable packaging materials, 52% of European consumers have switched a brand or product because of environmental concerns about how it is packed according to a study conducted by ProCarton.

The strong emphasis on sustainability can also be seen in today's packaging trends. Natural surfaces are getting more and more popular especially in cosmetics packages. An uncoated high-quality paperboard allows stylish graphical designs.

Simplicity as such is also a growing trend in packaging design. Clear patterns and simple texts are commonly used nowadays. Also foiling instead of printing can be used for effect. Consumers want more information about the sustainability of the goods they buy – including the packaging.



## New sheeting line – a benefit to our customers

In Äänekoski, Metsä Board has started a new paperboard sheeting line in 2019. The Äänekoski mill produces a premium lightweight folding boxboard for demanding end-uses around the world.

The new line increased the annual capacity of the sheeting plant by 35,000 tonnes

to a total of 120,000 tonnes.

Well-known and popular global brands trust MetsäBoard Pro FBB Bright manufactured at Äänekoski mill. Its main end uses are packaging of chocolate and confectionery, food, healthcare, beauty care, and graphic applications.

## Artificial intelligence empowers smart manufacturing

Artificial intelligence has become a part of the work process in Metsä Board's Kyro mill.

The Kyro mill has begun using artificial intelligence for quality management on its folding boxboard machine. Supplied by Voith, the software uses measurement results related to the quality properties of the mill's process data.

Artificial intelligence contributes to high efficiency and accuracy of production process control.

“For example, at Metsä Board Kyro production waste will decrease, product quality consistency will further improve, and grade changes will be quicker,” says **Ari Kiviranta**, SVP Development at Metsä Board.

Based on the good results, Metsä Board is investigating different possibilities to take artificial intelligence into use at other Metsä Board mills, too.

Manufacturing sector shows the way in applying artificial intelligence technology. AI-powered data analytics will improve efficiency and product quality.



# SHORTS

## Metsä Spring explores new sustainable business opportunities

How would you like a pair of shoes made from wood-based material? It might not be so distant in the future, after all. Metsä Spring, an innovative venture capital arm of Metsä Group, aims to invest in new endeavors within the sustainable forest-based bioeconomy and circular economy.

Currently, Metsä Spring is working with Japanese trade and investment group Itochu Corporation to develop a new method for converting wood pulp into textile fibre. The greenfield demo plant in Äänekoski is planned to begin operations in early 2020.

Another capital investment was made in Woodio Ltd, a leading developer of waterproof wood composite products. Woodio's proprietary technology enables the valorisation of underutilised side-streams into long-lived, value-added products. Woodio's first success has come from using this technology in the production of bathroom and kitchen washbasins.

This shoe is a prototype.



## Why packaging matters?

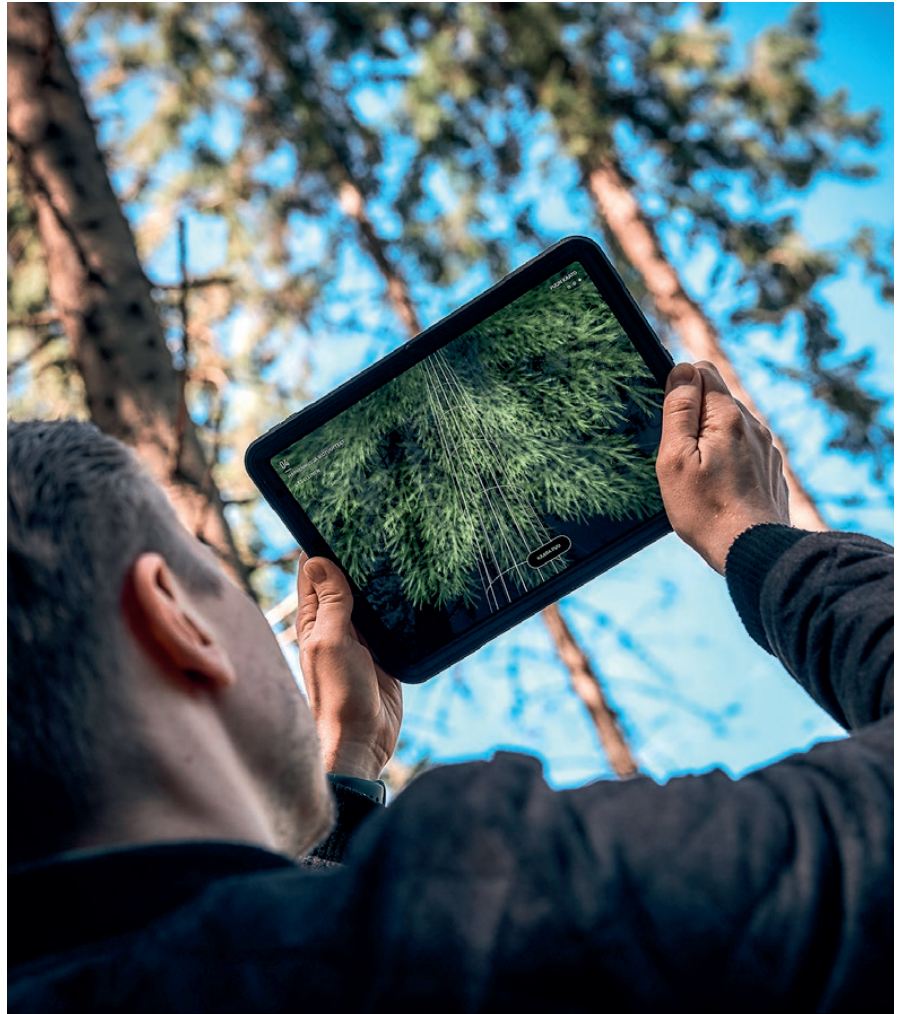
Metsä Board showcases the importance of sustainable packaging with interactive impact report

Packaging matters and to illustrate this Metsä Board has published a web-based impact report to demonstrate the importance of sustainable packaging.

The important role of packaging in protecting food during transport, in stores and in homes is highlighted by the impact of food waste, a serious environmental issue that accounts for almost 10% of global greenhouse gas emissions.

Current statistics and information on packaging materials are supported by sliders and calculators. The interactive report invites engagement from the public by making sustainability information easily accessible. It also provides an easy-to-use tool for customers to demonstrate their commitment to sustainability through their choice of using sustainable products. Metsä Board created the report with AskKauko, a Finnish software startup developing next-generation impact communications.

The impact report is available online and can be viewed at [www.impactreport.app/metsa/paperboard/](http://www.impactreport.app/metsa/paperboard/) or using the QR code.



## Nemus Futurum showcases the entire cycle of sustainable forest management

Nemus Futurum is Metsä Group's new visitor centre. Located only 50 kilometers from the capital city of Helsinki, the centre introduces Finnish forest management practices in a completely new way.

At Nemus Futurum, visitors can see and feel how Finland's most valuable natural resources – nature and forests – are taken care of in a sustainable way. Relying partly on augmented reality technology during the forest visit, the different forest environments are linked to globally topical sustainability themes, from climate change to biodiversity.

The visitors can experience forests in different phases of the forest management cycle. The different forest environments of Nemus Futurum and the modern technology we use there demonstrate why responsible forestry benefits the whole of society. Enjoy an inspirational visit in the Finnish forest. Welcome to Nemus Futurum!



# Fossil-free is becoming a reality

Metsä Board is shifting away from fossil fuels to renewable energy. The goal is ambitious: all mills will be 100% fossil-free by 2030. MARKKU RIMPILÄINEN Photos: Metsä Board & Lehtikuva

**T**he message of the latest climate change report by the IPCC is crystal-clear; to mitigate climate change, all industries must reduce the use of fossil energy.

Metsä Board is in the fast-lane towards this target; 82% of the energy used in the company's paperboard mills is already fossil-free.

"We have invested in fossil-free energy for many years," says Metsä Board's CEO, **Mika Joukio**.

An excellent example is the renewed biopower plant at Metsä Board's Kyro mill. It uses the parts of wood that cannot be used for valuable products as its main energy source – such as wood bark & forest residues.

In many projects, Metsä Board has improved energy efficiency at its board mills, for example with enhanced heat recovery.

## Fossil-free mills with the help of new technologies

Metsä Board aims for fossil-free mills by 2030. The mills will not use any fossil fuels, and the products will use only fossil-free raw materials.

"The target is ambitious, and we need investments as well as introduction of new technologies and research and development work," Joukio emphasizes.

For new investments, being fossil-free is a prerequisite. The planned renewal of Husum pulp mill will take Metsä Board closer to the target of 100% fossil-free mills.

With the renewal, Husum's own electricity generation, entirely based on renewable biomass, will double and increase the self-sufficiency in electricity of the integrated mill to over 80%. The first phase of the investment will reduce the use of fossil oil of the integrated mill by approximately 5,000 tonnes per year. After the

second phase of the investment, during the 2020's, no fossil fuels are used in the integrated mill.

Also, the planned investment in Metsä Fibre's new bioproduct mill in Kemi contributes to the 2030 fossil-free target. The bioproduct mill's main planning requirements include totally fossil-free operations and 250% self-sufficiency in electricity.

## The demand for ecological materials is increasing

Metsä Board wants to help its customers to reduce their carbon footprint.

"The availability of ecological, renewable, and recyclable packaging materials is crucial to our customers. Many of them have already made public commitments to switch from fossil-based packaging materials to more ecological solutions," Joukio says.

Conscious consumers have been searching for greener alternatives for a longer time.

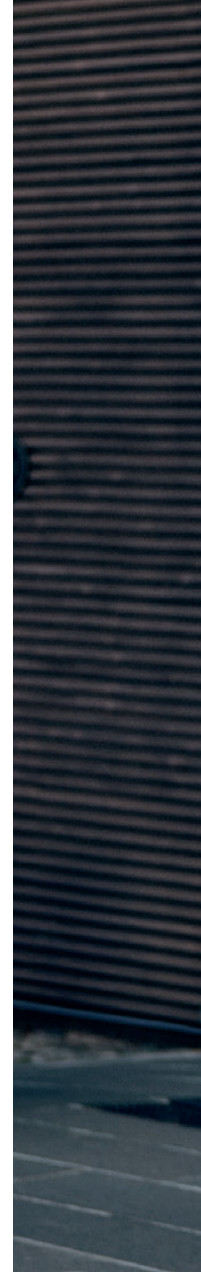
"With increasing awareness, more and more consumers are seriously concerned about climate change. The demand for ecological packaging materials is already seen in the demand for our products."

## Paperboard production with less water

Another significant development project in Metsä Board is to reduce the use of process water at its mills. Often this is done by recirculating the water in the processes several times.

During 2009–2020 Metsä Board reduced the use of water in its production by 20% per product tonne. The new target is to further reduce the use of water by 30% per product tonne by 2030 compared to the 2018 level.

"Reduction of water use helps us also to improve our energy efficiency," Joukio concludes. •





“The availability of ecological, renewable, and recyclable packaging materials is crucial to our customers.”

Mika Joukio



## Industry needs to reverse its energy pattern

If we want to mitigate climate change, we need effective and globally comprehensive actions.

This is the primary reason why we have to give up fossil energy, says **Petteri Taalas**, Secretary-General of World Meteorological Organization (WMO). The WMO also hosts the IPCC, Intergovernmental Panel on Climate Change.

“Today, 85 per cent of the world’s energy use is based on fossil fuels such as coal, oil, and natural gas. We need to reverse the pattern of energy consumption so that in 10 to 15 years, we will produce almost all the energy we need with nuclear power, hydropower, and renewable energy sources,” Taalas emphasizes.



As the source of almost one-quarter of CO<sub>2</sub> emissions, industry must also be a central part of the clean energy transition.

“The change will certainly take place in stages, as power plants and industrial plants have a lifetime of tens of years. However, many positive signs can already be seen.”

Taalas believes that fossil-free production will soon be a significant competitive advantage for the industry.

“Consumers increasingly want to know how big the carbon footprints of various products are.”

In theory, the industry could also capture carbon dioxide from flue gases, but cost-effective technologies for this purpose do not yet exist.

“The realistic scenario is the abandonment of fossil energy”.

The World Meteorological Organization (WMO) is a specialized agency of the United Nations dedicated to meteorology and climatology.

# The art of packaging

We have to treasure our world, says brand consultant Charles Ng. Metsä Board's Better with Less – Design Challenge aims to inspire designers to create innovative, sustainable packaging with limited natural resources. ANNA GUSTAFSSON Photos: [Unsplash](#) & [Metsä Board](#)

“I am so excited. I want to see innovation; I want to see smart ideas that blow my mind. I want to see new uses of materials; I want to see new uses of paperboard. I think paperboard is being used in so incredible new ways now. I want to see things that break the barrier,” says **Andrew Gibbs**.

Gibbs is the CEO, founder and editor of *The Dieline*, a media brand for consumer packaging and consumer brands. Gibbs is also a jury member in The Better with Less – Design Challenge.

The competition was founded to speed up sustainable, innovative package ideas for cosmetics, e-commerce and food packaging. It is an open competition not only for professional designers, but for packaging design students as well.

Along with monetary prizes for best innovations, Metsä Board will award one student with an opportunity for an internship with the company's packaging design team. The winners will be announced in spring 2020.

Last year, when the competition was held for the first time, there were over 300 entries from 38 countries. The winning design was an innovative, environmentally friendly paperboard-based alternative to plastic bubble wrap. A tough act to follow, reckons jury member, **Stefan Junge**, Professor in Packaging Technology at Beuth University of Applied Sciences Berlin.

“I was amazed by last year's winning concept, because it was using less material with no die cut waste and with very smart 3D bending performance. It will be difficult to top that in this year's challenge, but I am very excited to see inspiring new ideas,” Junge says.

#### The resources are limited

Packaging industry has found new meaning in today's culture of always seeking new experiences through consumption. The internet is filled with unboxing videos, where the package liter-



ANDREW GIBBS



STEFAN JUNGE

“Better consumer experiences with less environmental impact.”



your  
design  
here

your  
design  
here



## Do more by using less is at the core of **Better with Less – Design Challenge.**

ally takes the center stage. Good package design is seen as something that adds value to brands, consumers and companies.

“The growing focus on the environment makes this an interesting time for the packaging industry and therefore designers, who have a crucial role to play. Packaging is being re-examined in a greener light and the more designers are thinking out of the box, the more innovative the solutions will be,” says **Alissa Demorest**, jury member and Editor in chief of luxury packaging magazine *Formes de Luxe*.

All jury members agree that good design can play a crucial role in reducing the impact of consuming on the environment. Brand consultant **Charles Ng**, founder of financial services pro-

vider MCL Group based in Hong Kong, takes a long-term perspective on the matter.

“Natural resources are limited, and we have to treasure our things. In old China we treasured things very well, but after the industrialization it changed, we have not respected natural things as much. We designers can think deeply about how things can be used by people to treasure our world,” Charles Ng says.

### **Do more with less**

Along with sustainability, what are the current trends in packaging industry? **Ilkka Harju**, the competition’s chairman and member of the jury, sees a clear trend towards natural materials in today’s packaging.



**ALISSA DEMOREST**



CHARLES NG



ILKKA HARJU



CLARK GOOLSBY



“I think at the moment natural surfaces are a quite big trend. You can get a very nice contrast when you combine natural surfaces with graphic design and special effects,” says Harju, who is Metsä Board’s Packaging Services Director EMEA and APAC.

All jury members have high expectations for the paperboard industry. Junge encourages close interaction between the industries.

“The formability of paperboard in 3D should still be improved to allow more options. The real progress comes when a board-based solution gives the product the same protection as other materials with the same, or ideally less weight,” Junge reminds.

“Simplifying things and aiming to do more by using less is at the core of Better with Less – Design Challenge”, says jury member and Chief

## Follow the competition in social media with the hashtag **#betterwithless**.

Creative Officer of Chase Design Group, **Clark Goolsby**.

“Trying to make things simpler for consumers, as well as for the sake of the planet, is basically what we are trying to do as designers. I think Better with Less captures it perfectly; what we need more than anything is new, creative and inspiring solutions”, Goolsby highlights. ●

# An instant stand out

Crisp dark winter night and flaming exotic Northern Lights form the stage for an extraordinarily beautiful package design. The package for Arctic Blue Gin is designed with exceptional visual elements for maximum brand enhancement. ANNA GUSTAFSSON [Photos: Nordic Premium Beverages](#)

It started as a set of perfume packages with a hummingbird motif intended to be decorated with holographic metallization and to be used as a joint promotional marketing campaign between Metsä Board and Hazen. Metsä Board Americas Packaging Services Director **Mark Beamesderfer** received the initial samples but immediately realized the designs were more suitable for spot foil decoration. He met with Hazen's President **John Hazen** to confirm his observation, learn more about the full metallization process, and to discuss a new package design that would showcase the full holographic metallization effect in a better way.

"We both agreed that we had to come up with a more appropriate concept. On my eight-hour drive from Hazen in Massachusetts to my home office in Pennsylvania, I envisioned a new concept that would be better suited to John's holographic metallization process," Mark Beamesderfer tells.

Beamesderfer remembered a package that Metsä Board's design team in Finland had produced for a Finnish artisan gin brand, Arctic Blue Gin. The packaging had gained much attention in the market as well as within the company. But the original package was a black and white landscape scene printed on a stark white background.

"That's when I formulated the idea of taking the same package, turning it into a night scene,

and rolling Northern Lights across the sky using the holographic effect," Mark Beamesderfer explains.

Hazen brought Metsä Board's vision to life and produced a large proof very quickly.

A large-format holographic origination system called Color Motion using photo-resist technology was applied. Hazen then micro-embossed the holography into a transfer film that was then metallized. All the technology used to create this hologram is proprietary to Hazen.

## Inspired by Finnish winter

The idea was successfully pitched to Arctic Blue Gin. The exquisite gin brand comes from the Eastern Finland town of Ilomantsi and uses natural products like herbs and berries from the forest to produce its distinctive taste. It was only natural that the inspiration for the package also came from nature. Metsä Board's Graphic Packaging Designer **Marko Leiviskä**, who was assigned to the project, describes that the package was designed with the US market in mind right from the beginning.

"We wanted to convey an image of a clean, crisp winter night and something exotic like the Northern Lights. It might feel ordinary to us here in Finland, but for the US market customers, this imagery really stands out," Leiviskä describes.

The holographic metallization effect that created the Northern Lights theme is reproduced



JOHN HAZEN



JAMIE MEADOWS



[Take a look at the Northern Lights package design video.](#)

by printing on top of hologram technology using a combination of partially translucent inks and partly opaque ones. The depth effect has been accentuated by multi-leveilling the foreground details with embossing. The result artistically simulates the movement and appearance of Northern Lights flaring with traditional printing methods.

### Challenging print process

Producing such highly challenging print requires a lot from the material. Smoothness and stiffness are needed to get the large hologram surface to adhere to the paperboard without any flaws. Here Metsä Board was able to deliver an unbeatable surface, says John Hazen, President of the Hazen Paper Company.

“The type of paperboard we chose has a very uniform smooth surface; it scores and folds exceptionally well and has economic and environmental superiority. It is an optimal paperboard for transfer metallizing applications and ideal for a high-end graphic arts application. It has both beauty and brawn,” Hazen says.

Printing was executed by AM Packaging. The company president **Jamie Meadows** says sustainability is an important trend in the beverage market, also regarding the packaging. AM Packaging, which is a US certified Veteran owned business, is a valuable partner to companies who also emphasize diversity spend.

Meadows describes how Metsä Board material worked extremely well on all phases of the process, including printing, embossing, die-cutting and gluing.

“As always, if you want to have high-quality results, you have to work with high-quality materials and high-quality partners. The resulting package is one-of-a-kind carton that is going to turn lots of heads on the shelf,” Meadows sums up. ●

### FACTS

#### Design:

The Northern lights photography taken by Eeva Mäkinen.

#### Style & material:

A tuck-top, glued-crashlock bottom printed 7/0 + gloss varnish on aluminum holographic metallized 24 pt MetsäBoard Pro FBB Bright folding boxboard.

#### Converters:

Hazen Paper Company and AM Packaging.



# Takeaway in change

Contradictory trends are driving the takeaway food market: consumers are looking for experiences and convenience, but also want to have healthier lifestyles and share a common concern for the environment. TIINA TUPPURAINEN [Photos: Jussi Hellsten & Istock](#)



**M**ore than half of the world's population lives in urban areas. This means hectic lifestyles, traffic jams and long commutes. A growing number of people are living alone. All this increases the popularity of takeaway food.

"In cities, the pace of life is different than in rural areas," says **Anu Rehtijärvi**, Market Intelligence Manager at Metsä Board.

The popularity of takeaway food is being boosted by the convenience trend: people want their daily lives to be easy.

According to the results of a consumer trend survey conducted by Euromonitor International, 70 per cent of people aged 25–55 are looking for ways to simplify their lives. Home delivery of food is a globally growing trend.

At the same time, customers demand sustainability in packaging and food production.

"Wellness and sustainability are today's luxuries. People want to take good care of themselves and the planet. This is called guilt-free or conscious consumption."

However, the prevailing consumer trends are contradictory.





## FOOD TRENDS OF THE FUTURE

- Local, handmade food.
- Inconsistent meal-times and snacking. McDonald's has an all-day breakfast, and Starbucks included an evening menu to cater for late customers.
- Customisation of takeaway packaging as a means to express one's identity. Customers want to build their own meals or get personal messages. This can be something as simple as a cup with the customer's name written on it.
- Increasing automation. At fast-food restaurants, orders can be placed, and payments made using kiosks. Coffee can be ordered for pick-up in advance using a mobile app.
- Blurred lines between grocery shops and restaurants. A supermarket may also have a wine bar or a restaurant.
- A growing number of people are flexitarians: They commit to eating less meat and more plant-based food.

“People want an easy lifestyle but they are concerned about the health effects of takeaway food and the environmental effects of packaging.”

Now that international concern about plastic waste is increasing, people want to have products they can recycle or reuse. Rehtijärvi sees great potential in sustainable takeaway packaging.

“Paperboard is an excellent solution.”

**The amount of waste will be decreased**  
From mid-2021, the EU will restrict the use of throwaway plastic packaging.

Waste management legislation will also become stricter: by 2035, only 10 per cent of waste will be allowed to end up in landfill sites.

“The recycling of biowaste is becoming mandatory across Europe in the upcoming years. Food service packaging will be allowed to be collected together with biowaste, provided it meets similar biodegradability and compostability properties.”

The main focus of the EU Single-Use Plastics Directive is on reuse. This poses challenges for food hygiene and consumer safety.

“In the United States, food service board is the fastest growing paperboard grade.”

In many parts of Europe, it has been a common misunderstanding that paperboard cups cannot be recycled at all, even though the industrial infrastructure is already largely in place. The recycling process of paper cups is similar to beverage cartons, of which already nearly 50% are recycled in the EU.

Consumers are more or less aware of the environmental benefits of recycling, but sometimes they tend to be oblivious of their personal responsibility in creating a litter-free environment.

“Plastic packaging doesn't end up in the sea without human involvement. And recyclable materials don't get recycled if disposed into a mixed waste bin.”

What consumers need and want most – besides a dense coverage of recycling bins – are very clear and simple instructions on how to recycle. This is a challenge to brand owners and packaging manufacturers as there is no universal recycling infrastructure across countries and practices vary even from municipality to another. •



ANU REHTIJÄRVI

# The food industry goes

There is a growing demand for non-plastic and recyclable packaging alternatives to serve and store food. Metsä Board has come up with a new plastic-free eco-barrier paperboard.

ANNA GUSTAFSSON Photos: Metsä Board & Ville Rinne

## plastic-free

**G**rabbing a piping-hot dish to go from a local restaurant after a busy day might be just what you need. However, the plastic throw-away box that the time-saving food comes in might not be something you want on your menu. Well, as a consumer, you are not alone.

There is growing pressure towards the food industry to offer more sustainable options.

Metsä Board has launched a new, innovative plastic-free eco-barrier paperboard, MetsäBoard Prime FBB EB. It is specially designed to meet the food industry's needs for sustainable packaging. The material is the result of Metsä Board's own research and development work and works as a sustainable substitute to plastics and other environmentally unfriendly materials for food.

**Katja Tuomola**, Business Development Director at Metsä Board, attended Pack Expo in Las Vegas in September 2019, where the new paperboard was launched. "The reception was overwhelmingly positive", she says.

"There was a constant buzz at Metsä Board's PackageLab stand on the expo floor, where visitors were evaluating the eco-barrier samples and properties", Tuomola describes.

"Globally, brand owners and companies are keenly looking for new, greener solutions, and for them, this is also an essential question of image and brand management," Tuomola says.

Many companies, including corporate giants like Coca-Cola, Danone and Unilever, have publicly made commitments to abandon non-recyclable plastic packaging by 2025. This further adds pressure to find alternatives





Metsä Board's plastic-free eco-barrier paperboard gives a medium barrier against grease and moisture making it a good alternative to plastic packaging in various food end-uses. It's available in basis weights of 195–320 g/m<sup>2</sup> (12–22.5 pt).

made from renewable non-plastic materials, which should also be recyclable. Also, the EU directive banning certain single-use plastic items increases the requirements for recyclability, which further increases the demand for materials like the new eco-barrier paperboard.

#### Easy recycling

The first version of the eco-barrier paperboard was introduced already two years ago. The new MetsäBoard Prime FBB EB introduces improved grease and moisture resistance and is suitable for various end-uses in food and non-food applications that demand barrier properties. Several customers have already adopted the new eco-barrier paperboard, and the reception has been positive. The material is used in cartons and food service applications with good feedback.

The eco-barrier paperboard is safe for direct food contact. The product stands out from other similar materials with its high brightness, which is achieved without optical brighteners, as well as a smooth surface providing excellent printability to meet brand promotion demands.



Because the paperboard is plastic-free, it does not require a separate plastic separation process and is therefore easy to recycle cost-effectively. Eco-barrier can be recycled together with paper or paperboard sorting if the consumer has access to those facilities. Further compostability and biodegradation tests are running until mid-2020.

The high brightness of the eco-barrier board is achieved without optical brighteners (OBA) or fluorochemicals, making it a natural choice for food packaging.



#### FACTS ABOUT THE PACKAGING

The plastic-free *It's all about love* packaging is made from eco-barrier paperboard MetsäBoard Prime FBB EB 245 g/m<sup>2</sup>. The text on the packaging is beautifully foil-laminated, and its tone is consistent with the pralines. The packaging is made from pure fresh fibre making it safe for direct food contact.

**Brand:** Kultasuklaa

**Product:** *It's all about love* pralines

**Material:** MetsäBoard Prime FBB EB 245 g/m<sup>2</sup>.

Even though the material has different properties from other paperboard products, it can be processed with the same machinery than normal paperboard at the Metsä Board's Kyro mill in Finland.

#### Next steps

Using conventional paperboard in serving and storing food has previously been problematic, as the paperboard material does not naturally have qualities to handle moist or grease. With MetsäBoard Prime FBB EB, the grease and moisture resistance of the board is enhanced with a barrier layer.

"The material works well with dry, fresh and frozen food as well as hot dishes and can be microwaved," Tuomola tells.

Asked about further development goals for eco-barrier, Tuomola explains that Metsä Board is committed and sees possibilities in further developing the eco-barrier paperboards. For example, MetsäBoard Prime FBB EB cannot be heat sealed, which is required in order to make cups.

"There is definitely a need in the market to find better alternatives for plastic cups, so this is something we will keep on developing with eco-barrier," says Tuomola. •



## No one wants a broken heart

**Kultasuklaa had one wish concerning the *It's all about love* praline box: less plastic.**

The packaging was created by Metsä Board's packaging design team. As pralines are food products, impressive packaging isn't enough. The packaging also needs to protect the products from air and light, and the pralines must remain intact and tasty.

"No one wants to buy a broken heart, let alone receive one as a gift," says chocolate entrepreneur **Juri Kaskela** with a laugh.

The four-praline box has an innovative structure: the external packaging is made from a single piece of paperboard, which forms a heart. The pralines are protected by eco-barrier paperboard on the

packaging's inner surface. The grid that keeps the pralines in place and separate is made from a single piece of eco-barrier paperboard.

"Metsä Board has amazing expertise in paperboard", Kaskela says.

The packaging has been designed to highlight its pure raw material, paperboard. Its surface provides a pleasant touch and feel through a soft touch varnish and hot foil. Kaskela is pleased with the minimalist but fresh outcome.

"The packaging does justice not only to cocoa as a raw material, but also to the pralines containing raspberry, pomegranate and caramel. The pralines are pulled out from the side of the heart-shaped packaging. This highlights the product as a gift, while creating a feeling of pleasure and high quality," Kaskela concludes.

# The Last

The EU directive restricting or banning the use of some single-use plastics has been dubbed with a catchy nickname. Tytti Peltonen, Metsä Group's Vice President of Corporate Affairs in Brussels, gives an inside view on the new legislation. ANNA GUSTAFSSON [Photo: Shutterstock](#)

**F**or decades, single-use plastics have enabled our habit of eating and drinking on the go. However, the handy material designed to make our lives more convenient has lately become an outcast.

An overwhelming majority of 560 members of the European Parliament voted in favour of restricting or banning a wide range of single-use plastic products in the EU countries.

The banned items include cotton buds, straws, plates and cutlery, beverage stirrers, balloon sticks and oxo-degradable plastics. There will be restrictions for food containers and cups with plastic coating, too.

The directive comes into effect in the summer of 2021. The member countries have already begun working on how to implement the directive in the national legislation.

**Tytti Peltonen** has worked in Brussels for ten years and is currently the Vice President, Corporate Affairs, European Union, for Metsä Group. She agrees that

the EU stance on single-use plastics is an important milestone that affects primarily the food service packaging segment. Around a quarter of global demand for plastics comes from packaging.

#### **The industry will have to plan ahead**

The directive was created to protect the oceans and shores from plastic pollution. But in the current form, the definition of single-use plastics is far from straightforward.

There are still many open questions. For example: how will fibre-based materials like paper and board be treated if they have a plastic coating?

"The uncertainty will have an impact on product development," Tytti Peltonen says.

The industry will have to start planning for the future in uncertain terms. The European Commission is expected to come out with more details about how the different materials will be treated under the directive in mid-2020.

"The legislation doesn't differentiate products made entirely from plastic and e.g. fibre-based products, such as paper-board, with plastic coating. Instead of heavy restrictions, efforts to reduce the use of plastic should be encouraged. This would be a positive message to promote new innovative thinking when developing packaging materials.

#### **The products of the future**

EU is not alone in its quest against the throwaway culture. For example, India is set to impose a nationwide ban on plastic cutlery in 2020. The ban is already implemented in Delhi.

Australia has declared that all packaging in the country will be recyclable and reusable by 2025. France is planning to implement the prohibition of plastic cups and plates from January 2020.

"The products of the future, no matter what the material will be, should be made from sustainable, renewable raw materials and be recyclable or reusable." •

# straw

**12  
minutes**

The average time  
for which a plastic  
bag is in use.

**400  
million  
tonnes**

The amount of CO<sub>2</sub>  
emissions attributable  
to global plastic  
production.

**450  
years**

The decomposition  
time of oil-based  
plastic.

**1,000,000**

The number of plastic  
bottles bought in the world  
per minute.

# Barilla – a commitment to the wellbeing of both people and the Earth

Barilla, one of the biggest food companies in Europe, has set a strong focus on sustainability. In packaging, Barilla trusts in its famous and familiar blue package made of Metsä Board's lightweight paperboard. Good for you, Good for the Planet, the purpose of the company, it's the only way to do business, says Michele Amigoni. JENNY BELITZ-HENRIKSSON Photos: Barilla

**99.6** per cent of all Barilla's packaging is designed for recycling. One hundred per cent of the paper and paperboard used in the packaging is certified.

The collaboration between Barilla and Metsä Board began over ten years ago.

"Our purpose is to do good. We want to promote a healthy lifestyle and sustainable, delicious nutrition inspired by the Italian way of living and our Mediterranean diet. The packaging also plays a significant role for our brand," Barilla's GRDQ (Group, Research, Development & Quality) Vice President of Global Packaging, **Michele Amigoni** says.

## Minimizing food loss

Amigoni says that Metsä Board plays a significant role in providing technical innovations and developing lighter and more ecological packaging material alternatives for the packaging industry. The lightweight packages, which are made from Metsä Board's lightweight paperboard, have been a warmly welcomed option for Barilla.

Barilla keeps developing its packaging solutions.

"Our main principles in packaging are reducing the quantity of material, using recyclable materials, and also using materials from responsibly managed forests."

At the same time, Barilla wants to tackle the challenges that the world's food systems are facing. Also, people's

everyday choices affect the environment. The consumers must remember, accept, and understand that protecting the food with a proper package and minimizing food loss that way are very significant aspects.

"The food loss and waste are bad in every way, and they are also a social, ethical, and environmental issue. It is unacceptable to waste food while some people are suffering from malnutrition," Amigoni says.

## Less plastic, if possible

Barilla is very aware of consumers' changing attitudes towards plastic. Amigoni says that it is essential to think carefully about where to use plastic and where not.

"Of course, it is easier to design packages for pasta that is dry and hard than for baked goods that have to be delivered to customers worldwide in perfect condition."

Barilla offers both to the customers.

"We use plastic because paperboard and paper cannot substitute everything, at this stage of the technology. But it is important to identify when plastic is not necessary."

Barilla wants to give people the best possible experience in everyday life.

"Our purpose Good for you, Good for the Planet, inspires us every day. Food has to enable balanced and healthy nutrition; it must bring people also joy and satisfaction. We hope that people get together, eat well, and enjoy their food, but also each other and our planet." •





MICHELE AMIGONI

# For the love of bees

Impressive packaging has increased the value of Korpikuusikko Honey. Metsä Board created the packaging and point-of-sale materials.

JENNY BELITZ-HENRIKSSON Photos: Metsä Board

**T**eemu Aittamaa was encouraged by a friend to attend a honey-making course – and little did Aittamaa know that bees would become a permanent part of his daily life. At first, honey was just a by-product that Aittamaa supplied to friends and relatives. He was more interested in the bees.

“Bees cannot be controlled. You need to learn to interpret their needs, which is challenging,” says Aittamaa, a beekeeper and paper engineer.

When the amount of honey began to increase, Aittamaa needed to do something about it. The branding of Korpikuusikko Honey began with the packaging. Gift packaging was needed for the recyclable glass jars when Aittamaa decided to develop his product into a business gift. **Ilkka Harju**, Packaging Services Director, EMEA and APAC at Metsä Board, and his team designed impressive primary packaging, shelf packaging and point-of-sale displays for Korpikuusikko Honey.

## Luxury packaging with a natural appearance

The impressive Winter Edition packaging is pleasing to the eye, but it’s also commercially effective: the packaging has increased the value of the product.

“Beautiful packaging not only protects the product: it also makes a sustainability statement. The lyrics I wrote for our limited Winter Edition gift box addresses climate change. Even bees need proper winters – slushy or rainy winters are the worst for them,” says Aittamaa.

Korpikuusikko Honey, which is quality certified, uses only recyclable or reusable materials. The product is packed by hand in glass jars and in Metsä Board’s paperboard packaging traceable to sustainably managed forests.

Aittamaa encourages people to make a commitment to the environment. In 2019, he taught beekeeping at the Steiner School in Tampere. When the Winter Edition packaging was launched at Tampere Hall, the honey came from beehives managed by pupils of the school on the roof of Tampere Hall.

Finnish honey with aesthetically pleasing packaging is attracting international interest and is exported to France.

“I am interested in exporting honey to other countries as well, but there will also be enough honey for friends and relatives,” Aittamaa points out. •

## FACTS ABOUT THE FLOOR AND TABLE DISPLAYS:

- The floor display is made from white corrugated board. Thanks to its inventive design, no material goes to waste.
- The stand is lightweight, and quick and easy to assemble.
- Gold foil has been used in the display header instead of regular silk-screen printing.
- Various product quantities can be placed on the shelves. The table display is offset-printed. Its unglued structure is based on locks.
- The following grades were chosen for the packaging from Metsä Board’s versatile paperboard portfolio: MetsäBoard Natural FBB, MetsäBoard Pro FBB Bright, MetsäBoard Natural WKL Bright and MetsäBoard Prime WKL.
- The packaging was produced by Prem, CadPack and Pa-Hu in Finland, and Werner Kenkel in Poland.



TEEMU AITTAMAA



Table display



Floor display

#### FACTS ABOUT THE PACKAGING

- The primary packaging features precise details, such as gold-foiled bees on the sleeve and a large foil area on the bottom part. In production, large foil is more manageable than lamination, and more tones are available. Transparent holographic foil gives the packaging a glittery appearance that resembles ice crystals and highlights the white packaging.
- The text on the packaging is black foil, eliminating the need for a printing process.
- The name on the packaging is embossed.
- Special effects have been thoughtfully used, and the paperboard is lightweight.



## Packaging design studio

The packaging design studio and a collaborative way of working enable fast product development and customised solutions.

# The packaging revolution

## R&D and laboratory

Deep fibre know-how and a combination of different skills accelerate paperboard and packaging innovation.

Metsä Board will be establishing a cutting-edge Paperboard and Packaging Excellence Centre in Äänekoski, Finland, to accelerate innovation for the future. The new centre will boost solution-oriented collaboration with customers and partners. JENNY BELITZ-HENRIKSSON Photos: WSP Finland

If we would follow a conventional solution an innovation centre would probably be located in a hectic and busy city. Metsä Board has courageously chosen the other way by establishing the new Paperboard and Packaging Excellence Centre in the peaceful Finnish countryside. The new centre will be located close to Metsä Group's unique Äänekoski bioproduct mill, the largest in the Northern Hemisphere.

In the Excellence Centre, the customer can find everything he or she needs under one roof.

"Our centre will help the customer to understand the process of packaging from the very beginning to the end product," Metsä Board's Packaging Services Director EMEA and APAC, **Ilkka Harju** says.

At the Excellence Centre, Metsä Board's designers do not work hidden in their rooms but a central area. In

## Services

its entirety, the centre consists of three main areas: the paperboard R&D laboratory, the packaging design studio, and the customer feedback centre.

Metsä Board wants customers to participate in the hands-on experience.

“When the customer gets the chance to do things themselves, they learn more and get inspired. When we do things together, it generates awesome and unforeseen ideas. At best, the customer will come to us with an idea and go home with a printed mockup,” Graphic Packaging Designer **Marko Leiviskä** says.

### Clinic for optimisation

The everyday presence of the designers is a benefit because face-to-face contact with the customer is the most useful thing that can happen to a designer. It often requires a lot of background work and many e-mails to get to know the customer and his needs. At the Excellence Centre, many goals and expectations can be solved even in a day workshop.

“As designers, we can immediately begin to solve the problem if there is one. That way, we improve the effectiveness and correctness in our packaging process. That means no problems, no waste. Our quality image is important, and it means products with no faults,” Structural Packaging Designer **Iiro Numminen** points out.

The Excellence Centre offers a framework for design, but also for R&D, which is another core part of the Excellence Centre operations. The centre holds Metsä Board’s research lab and has a staff of researchers and research technicians.

“Combining the different skills under one roof benefits customers and accelerates the development of new solutions”, VP of Research and Development, **Markku Leskelä** says.

The capabilities in the research lab cover barrier solutions, different aspects of packaging functionality, and converting efficiency as well as various tests, including sophisticated analysis of product safety, such as mineral oil migration methodology.

“It is a benefit that we can research, for example, the strength of a package right away. That makes the process very effective. We can also demonstrate to the customer how his product looks and performs in a virtual and physical environment,” Leskelä says.

Consumers’ needs and anticipating future market

trends drive development. The whole packaging industry works intensively to improve sustainability and to implement principles of the circular economy: reducing food waste, reducing packaging materials, and improving cycles for materials and nutrients. One thing often discussed is developing eco-friendly substitutes for plastic. The customers want to know if it is possible to modify their packages, reducing or perhaps eliminating plastic completely.

If the customer does not have a problem with his package, it is not a problem! Metsä Board’s team can also help with packages that already work well. But when the packaging and its materials are optimised together, it can minimise costs or save energy.

“Technically, we could also call the Excellence Centre an optimisation clinic,” Numminen adds.

### Brainstorming sessions for the future

Even though the Excellence Centre offers genuine solutions for the present day, the future’s concepts will be represented as well.

“We need to concentrate on both: today and the future. In the Excellence Centre, we can research even wild ideas and make different prototypes that are not yet ready for everyday consumption”, Harju says.

“It is important to understand how the world functions now and how it will function after 10 or 20 years. For example, 3D packaging is in constant change, but there are many things we cannot produce with today’s materials. But when we keep developing, we might produce some game-changing innovations,” Numminen explains.

For that, the R&D team investigates possible future material solutions on many fronts.

“The path of new packaging technology from idea to market can take a long time. Cooperation with many different players – technology providers, clients, research organisations, and consumers – accelerates the journey in search of major breakthroughs,” Leskelä says.

Although the Excellence Centre’s physical environment is in Äänekoski, it is not only about one location. The know-how travels around the world with Metsä Board’s sales and technical team and spreads globally virtually. The Excellence Centre will be a unique experience that excites, inspires innovations, and offers practical solutions upon its opening in 2020. •



## Customer feedback centre

Close customer collaboration  
improves packaging process  
efficiency and helps reduce waste.

# Sustainable packaging is also smart business

Terri Goldstein, founder and CEO of The Goldstein Group, is convinced that packaging is about to change dramatically. Sustainable packaging is a huge opportunity for brand owners. MARKKU RIMPILÄINEN [Photo: TGG](#)

**S**ometimes it is difficult to detect a significant change when you are in the midst of it. But now the shift towards more responsible packaging is evident, **Terri Goldstein** says.

“Packaging is changing dramatically every day. The change is, first and foremost, ecological. We can see the effects of wasteful packaging in our landfills and our oceans.”

Consumers are already awake.

“People have long identified themselves with the brands they consume, and increasingly they expect companies to be conscious. They want to align themselves with brands that take the environment as seriously as they do.”

## How green do you want to be?

“Brands can make a difference just by cutting down the existing materials they use even if they aren’t switching to more sustainable ones,” Goldstein says.

If a brand wants to go further in responsibility, goal setting is mandatory.

“Ask yourself how green you want to be. Determine the level of responsibility you want and set the goal.”

“The younger segment is interested in green packaging. If that’s the segment you are going after and you show yourself as a responsible brand owner, you better make sure that you are one.”

## Better with less can sell more

Goldstein, who has worked on some of the biggest brands in the United States and beyond, is constantly looking for new ways to promote responsible packaging.

“The decision to employ more sustainable packaging is for the brands to make. But as designers, it’s our responsibility to present options to the client and advise them to make the best decision.”

Recently, Goldstein’s team was talking with a client about redesigning the structure of their package.

“We successfully convinced them to switch from a mock clamshell, which has a layer of plastic over the entire front display panel, to a trapped blister which uses a fraction of the amount of plastic,” she says.

“This was not only a more sustainable switch, but it also looked more premium and allowed us to design custom finishes with new environmentally sound solutions. It was truly a win-win situation.”

## Partnering with like-minded groups

Goldstein sees that better materials are arriving, and some of old ones are flourishing.

“Corrugated board is on the rise like we have never seen before. It’s recyclable, it’s responsible, and it’s a great material to work with. It is lightweight, and it does not have ink in it when it’s made of fresh fibre-based materials.”

She advises that manufacturers of ecological packaging materials should offer more comprehensive service solutions. They should partner with other groups to educate brand owners about the raw materials available to them, how to responsibly print on these materials with sustainable inks and finishes, while also providing key message points and approved certifications, seals and endorsements.

She also notes: “Change is hard for large brand owners, it takes time and money to reengineer a corporation’s global supply chain, procurement, operations and packaging departments and wait for the benefits to become realized. This is why manufacturers of sustainable substrates need to educate the C-suite, investors and other stakeholders to the intrinsic value and benefits of sustainable packaging, while also providing data to prove that a ROI will be obtained.”

## Entrepreneur and speaker

Terri Goldstein has been working with brand packaging in some way for her entire career.





### About sustainability

Ask yourself how green you want to be. Determine the level of responsibility you want and set the goal.

Terri Goldstein

“I have always been a highly visual and intuitive person, and seeing brands that communicate in a visual vocabulary to win over consumers excites me.”

Goldstein studied at the Advertising Center in Los Angeles. She started her career in Texas at DDB, and then moved to New York and was soon named one of the first female VPs of a Wall Street ad agency.

In 2005, she founded her own company, The Goldstein Group which has worked with clients such as Bayer, Merck, ConAgra, Sanofi, Panasonic, USP/Zdrowie and many more.

“Our focus from the beginning has been intelligent design, informed by customized research. Over the years, our focus has reflected changes in the market, but we

remain rooted in packaging design with ownable and legally protectable core identifiers. We understand how brands can build a strong visual strategy both at retail and online to ensure they are highly valued at the point of sale.”

Goldstein is also a well-known speaker, traveling the world to present her branding and packaging expertise.

“I want my audience to understand that their job is to represent the one identity that can’t speak for itself; their brand. It speaks with a visual vocabulary of colors, shapes and symbols. Those transcends into associations and emotions which resonate, or not in five seconds or less,” she says.

“That’s how successful brands are built”. •

# Lighter package, big savings

Medicine-On-Time wanted to improve the quality of their packaging. Metsä Board's lightweight paperboard offered them a marvelous sustainable solution that also clearly lowered the shipping costs. TIINA TUPPURAINEN [Photo: Jukka Koskinen](#)

Medicine-On-Time, one of the leading manufacturers to the US medication adherence market, had some issues with their packaging due to tearing, sealing issues and print quality problems. They wanted to create a package that met their sustainability goals and customers' needs.

The solution was MetsäBoard Pro FBB Bright 250 g/m<sup>2</sup> (16 pt) which provided an outstanding print surface and a structure that did not tear during press runs and customer use. The change of paperboard lengthened the life of the print dies used during the printing process, as well as improving the heat seal coating placed on the paperboard.

Each shipping box weighed 5lb less than before. The lightweight packaging meant dramatic reduction in costs.

Lightweight paperboards use less wood fibre raw material, energy and water. This means reduced environmental impacts.

Lightweight paperboards are lighter to transport and generate less waste. They are engineered for high performance, with an optimised three layer structure and high yield pulp in the middle layer, which helps to achieve high strength, bulk and stiffness at lighter weights.

The end results were customer satisfaction and excellent printability.

"We've seen huge savings in freight costs," says **Michael Stevenson**, Vice President of Operations at Medicine-On-Time. "Metsä Board's paperboard is whiter as well, which looks so much cleaner and prints better." •



## FACTS ABOUT THE PRODUCT

### Material:

MetsäBoard Pro FBB Bright 250 g/m<sup>2</sup> (16 pt)

Brand owner: Medicine-On-Time

Converter: Medicine-On-Time



# METSÄ BOARD FACTS AND FIGURES

## OUR PRODUCT PORTFOLIO

	NATURAL	CLASSIC	PRO	PRIME
<b>FOLDING BOXBOARDS FBB</b>	MetsäBoard Natural FBB	MetsäBoard Classic FBB MetsäBoard Classic FBB CX	MetsäBoard Pro FBB OBAfree MetsäBoard Pro FBB Bright MetsäBoard Pro FBB CX	MetsäBoard Prime FBB Bright MetsäBoard Prime FBB EB MetsäBoard Prime FBB CX MetsäBoard Prime FBB CXB
<b>FOOD SERVICE BOARDS FSB</b>	MetsäBoard Natural FSB Cup		MetsäBoard Pro FSB Cup	
<b>WHITE KRAFTLINERS WKL</b>	MetsäBoard Natural WKL MetsäBoard Natural WKL Bright	MetsäBoard Classic WKL	MetsäBoard Pro WKL	MetsäBoard Prime WKL

## METSÄ BOARD IN NUMBERS

# No 1

in folding boxboard and white kraftliners in Europe  
in coated white kraftliners globally



Our customers are brand owners, retailers, converters, corrugated box manufacturers and merchants

# 2,400

personnel

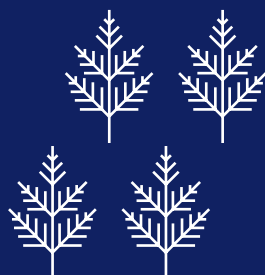


# 1,9

Billion EUR sales

# >100

We deliver to over 100 countries



For every tree harvested, four seedlings are planted

## OUR VALUE CHAIN IS SPECIAL



High access to Nordic fibre

# 103,000

Finnish forest owners as our owner base



Sustainable and renewable raw materials

# 100%

traceability and self-sufficiency in high-quality Nordic fibres and tailor made pulps



Resource efficient operations

# A-level

position on the CDP's Climate and Water List

Metsä Board also has EcoVadis Gold rating and is ranked in the top 1% of suppliers.



Metsä Board  
professional  
magazine

metsaboard.com



#### NO MORE EXPANDED POLYSTYRENE (EPS)

Metsä Board's modular takeaway packaging is targeted at restaurants' takeaway services. The modular packaging is easy-to-use and functional, as well as easy to recycle.

The modular takeaway packaging includes an outer packaging that can accommodate several trays of different sizes, depending on the food in question. The restaurants can customise the packaging with their own printed stickers. It was one of the seven winning concept ideas in the Helsinki Wholesale market area's innovation competition.