

in | PACKAGING AFFAIRS

## P56. Farm-to-table

Building a more transparent link between consumers and food producers



in | PACKAGING DESIGN

**P10. Loving lightweighting**  
An economic and ecological dream

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**P20. Disruptive design**  
Redesigning the status quo

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**P48. The global kitchen**  
Chefs from around the world helping people learn how to reduce food waste

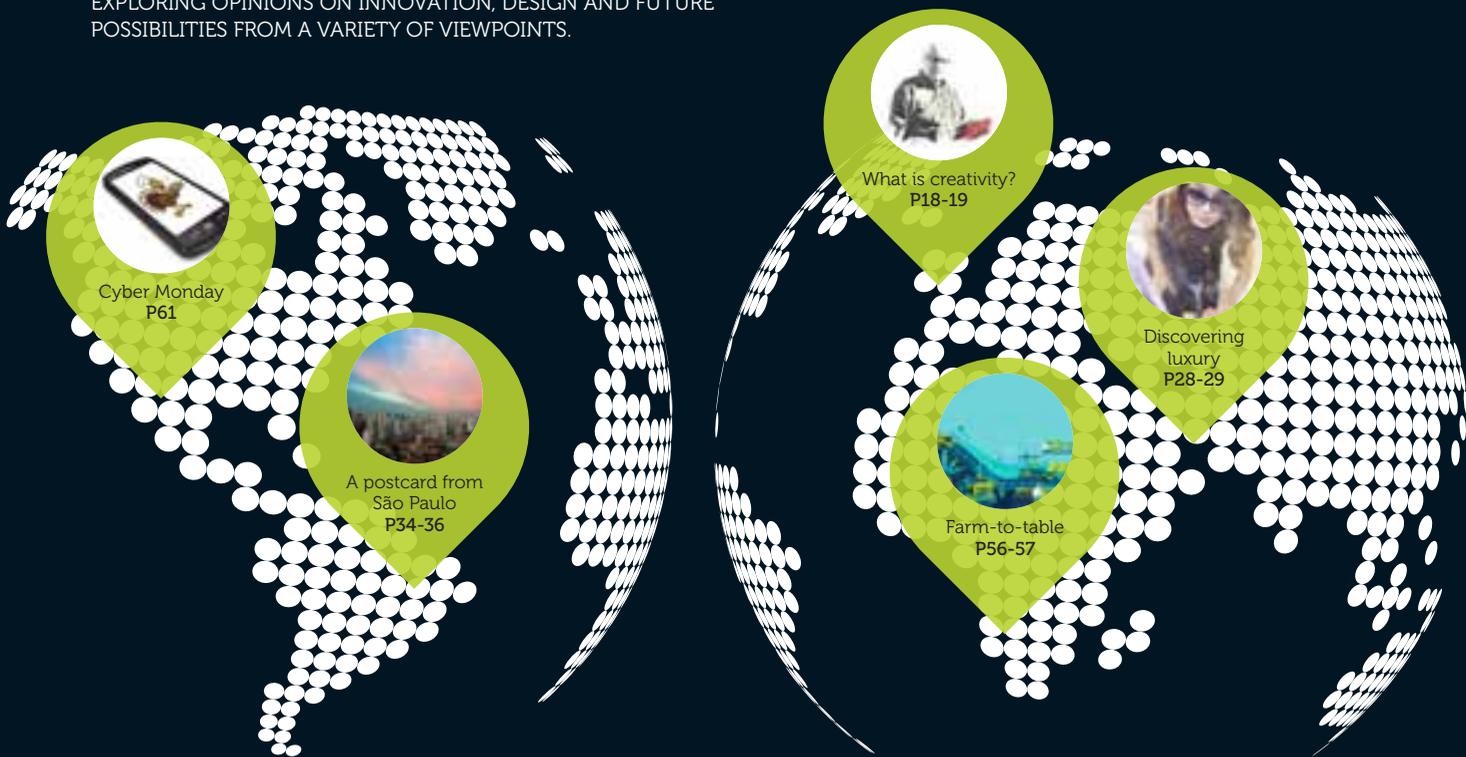
in | PACKAGING CULTURE

**P62. A label for all**  
How much information do consumers want? And what is the best way to provide it?

# Around the world again

*in 68 pages*

IN LOOKS AT THE GLOBAL PACKAGING PICTURE AS A WHOLE, EXPLORING OPINIONS ON INNOVATION, DESIGN AND FUTURE POSSIBILITIES FROM A VARIETY OF VIEWPOINTS.



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# Issue two also available for iPad



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on the iTunes  
App store



IT'S AMAZING TO WITNESS HOW FAST THE PACKAGING INDUSTRY IS GROWING AROUND THE WORLD. THE GLOBAL MARKET TOTALED APPROXIMATELY \$698 BILLION IN 2012, REACHED \$797 BILLION IN 2013, AND IS EXPECTED TO GROW AT AN ANNUAL RATE OF 4 PERCENT UP UNTIL 2018\*. NEW TECHNOLOGIES, PRODUCTS AND SOLUTIONS FUELED BY COLLABORATIVE INITIATIVES ACROSS THE PACKAGING VALUE CHAIN ALONG WITH MIDDLE-CLASS GROWTH IN EMERGING MARKETS, HAVE ALL HELPED TO ACCELERATE THE INDUSTRY FORWARD.

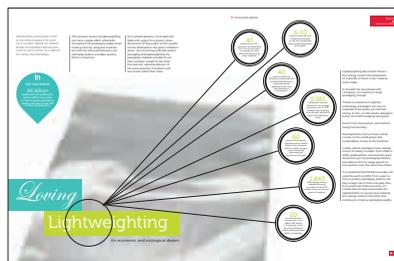
In a time characterized by rapid change, tools like IN: A Perspective on Global Packaging by Dow ("IN") are fundamental to understanding the shifting context in which our industry is operating. We're pleased to say that this issue offers a wider variety of topics from a diverse pool of contributors, which has doubled in size since last year. With the help of our leading specialists, IN confronts global topics like food waste, food loss and littering, and the impact of growing megacities. As introduced in our first edition, your packaging journey will be guided through IN's three areas of focus – Packaging Design, Packaging Affairs and Packaging Culture.

**PACKAGING DESIGN**

Covers consumers' packaging preferences in relation to current trends across a range of industries. Digging deeper, we look at specifics like lightweighting and luxury, and further explore the meaning of colors, the power of words and the psychology behind brand loyalty.

"Today, by innovating at the intersections of all the sciences, companies are addressing some of the world's most pressing challenges – needs as fundamental as the water we drink and the food we eat. In this broader sustainable development story, packaging continues to play an increasingly critical role. With the help of some of the greatest minds in the packaging value chain, IN offers a unique perspective on this important industry's impact and evolution."

**Andrew N. Liveris**  
Chairman and CEO, Dow



**PACKAGING AFFAIRS**

Explores the dynamics of the packaging industry. This section discovers some of the global initiatives and insights on sustainability, food waste, littering, recycling, transportation and the impact of new technology.



**PACKAGING CULTURE**

looks at different variables like labeling and digital evolution. IN takes a short trip back to the 1930s to explore retro packaging, highlighting the links between socioeconomic circumstances and packaging.



EDITORIAL

In 2013, Dow introduced the first issue of IN. Since then, IN was awarded the European Excellence Award for best external publication of the year, by the European Association of Communication Directors (EACD), saw hundreds of downloads of the app, and received tremendous feedback across the packaging value chain.

Our second edition of IN is just as thought-provoking and enlightening and I trust you will agree. Please enjoy!

All the best,

**Diego Donoso**  
Business President  
Dow Packaging and Specialty Plastics





MAGGIE BEER

**Cook and food author**

The Maggie Beer Foundation was created to promote the healthy and pleasurable aspects of good food for all. Her mission is to link nutrition's positive influence on brain and well-being. Her work with the Farm Shop ensures all produce is created locally and sustainably. In this issue of IN, she is one of the Global Chefs discussing food waste.

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MIKE BOLSTRIDGE

**Director of Product Safety & Quality, Tetra Pak U.S.**

Based in the United States, Mike Bolstridge is Tetra Pak's Director of Product Safety & Quality, where he advises companies and food manufacturers on cleaning and sanitization processes. After teaching in South Africa for 14 years, he joined Tetra Pak in Johannesburg in 1990. He spoke to IN about his day-to-day responsibilities and the importance of quality assurance in packaging development.

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FFINLO COSTAIN

**EU Project Manager, Labelling Matters**

Labelling Matters is a partnership campaign of Compassion in World Farming, RSPCA, Soil Association and World Animal Protection. The organization's goal is to influence the European Commission's 2012-15 Animal Welfare Strategy. Ffinlo Costain, EU Project Manager, talked to IN about some of his organization's views when it comes to labeling.

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ELISAVA

**Barcelona School of Design and Engineering**

Founded in 1961, ELISAVA Barcelona School of Design and Engineering, affiliated with Pompeu Fabra University (UPF), is renowned as Spain's first school of design. The school is situated in Barcelona and is home to around 2,200 students and more than 800 teachers. In 2013, the magazine *Domus* ranked it among the top design and architecture schools in Europe. Professors Alex Jimenez and Jon Marin write about design education in this edition of IN.

P|22-23 ▶



MANUEL GÓMEZ

**Vice President of Sustainability, Walmart**

Manuel Gómez leads Walmart's global sustainability efforts across more than 11,000 retail units under 69 banners in 27 countries. He is responsible for Walmart's commitments to 100 percent renewable energy, zero waste and sustainable products that offer benefits to both people and the planet. He spoke to IN magazine about Walmart's sustainability efforts and the positive effects of lightweighting in packaging.

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KAREN HALLER

**Business Color and Branding expert**

Karen Haller is one of the UK's leading color experts. Her work focuses on helping brand owners understand how the application of color can increase sales. To that end, she co-authored the industry primer: **Colour Design: Theories and Applications**. Karen talked to IN through her color dictionary in order to show the power of color for brands.

P|26-27 ▶



CORINNA HAWKES

**Head of Policy and Public Affairs, World Cancer Research Fund International**

An expert in food policy, Corinna Hawkes has worked for the World Health Organization and is an Honorary Fellow at the Centre for Food Policy of the City University, London. She gathers information on food policies for health. She has been widely published on how nutritional labeling impacts global health, and spoke to IN about how this impacts the labelling we see today.

P|62-63 ▶



TOM HUNT

**Chef at Poco (recently won Best Ethical Restaurant)**

Known as the "Eco Chef" and founder of the "Forgotten Feast," Tom is working on projects throughout the UK to revive the country's cooking heritage and to reduce food waste. He is an official chef of "Feeding the 5000," initiative to highlight food waste by feeding more than 5,000 people with delicious food that would otherwise have been wasted. He is one of the Global Chef's featured along with Maggie Beer and Regina Tchelly de Araujo.

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PAUL JENKINS

**The PackHub**

The PackHub is all about packaging innovation and offers services related to creating new, exciting and innovative packaging solutions. It helps brand owners, packaging suppliers and creative agencies across the whole packaging innovation spectrum from concept to delivery. Jenkins spoke to IN about how augmented reality can be applied to packaging today.

P|64-65 ▶



SEUNG KIM

**Graphic Design Student**

Seung Kim graduated in graphic design from Maryland Institute College of Art (MICA). Her previous work experience includes internships at Anthropologie and Michael Kors. Some of her work has looked at the use of empathetic wording on healthcare packaging. Kim discussed the power of words as visuals and the consumer choice thought process with IN.

P|16-17 ▶



ANTONIS MAVROPOULOS

**Antonis Mavropoulos is the blogger behind Global View of Waste Management.**

He is also the Chair of the International Solid Waste Association's Scientific and Technical Committee. He has been involved in waste management since 1994 and has completed more than 150 projects in 15 different countries. In this issue, Mavropoulos helps answer how megacities can cope with improved recycling.

P|38-39 ▶



ANNA NORMANN

**Project Manager for the Litter Less Campaign, Foundation for Environmental Education (FEE)**

Anna Normann is Project Manager for the Litter Less Campaign which is run by the Foundation for Environmental Education (FEE). The Litter Less Campaign aims to reduce litter and influence long-term behaviors among global youth. FEE is a non-government, non-profit organization promoting sustainable development through environmental education. Normann presented the FEE's campaign to IN magazine.

P|30-31 ▶



PAUL RODGERS

**Professor at the Northumbria University, School of Design**

Born in the UK and educated at Middlesex University and the University of Westminster, Professor Rodgers is one of the four founding members of the Design Disruption Group, based in the Department of Design at Northumbria University. He also focuses on "hybrid creative practice" bringing together artists, engineers, entrepreneurs and anthropologists. Rodgers discussed disruptive thinking and design with IN magazine.

P|20-21 ▶

**P. WESLEY SCHULTZ****University of California**

Professor Schultz is a social psychologist whose research focuses on social influence and behavioral change. He is also a Professor of Psychology at California State University San Marcos (CSUSM). Much of his research involves the application of certain psychological principles to understand and solve social problems. After conducting a study on human behavior around littering, he spoke to IN magazine about his conclusions.

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**TIM STOCK****Co-Founder & Managing Director at scenarioDNA**

After many years working as a design consultant and instructor, Tim Stock now manages scenarioDNA, a consumer insight think-tank and brand planning consultancy in New York. Together with Marie Lena Tupot, he introduces IN to the world of luxury branding and design.

P|28-29 ▶

**ARIANA SUSANTI****President of the Asian Packaging Federation (APF)**

Ariana Susanti is currently President of the Asian Packaging Federation (APF) after 12 years as the Business Development Director for the Indonesian Packaging Federation. Susanti spoke to IN about the latest trends in the Indonesian packaging market, including lightweighting.

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**REGINA TCHELLY DE ARAUJO****Favela Organica**

Regina Tchelly de Araujo is a Brazilian chef and founder of Favela Organica, a community-based program that creates small organic food gardens throughout the slums of Rio de Janeiro. In addition to producing healthy, organic food for local residents, Favela Organica promotes cooking habits that use all products, including food scraps. Together with the other Global Chefs, she speaks to IN about food waste.

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**ROLAND TEN KLOOSTER****Packaging Designer and Chair of Packaging Design & Management at University of Twente**

Roland ten Klooster wears both a practical and theoretical hat when it comes to packaging design. He is a professor and a practitioner with his own packaging design company; working with many companies to solve packaging-related problems. IN spoke to him on some of the current trends in packaging design.

P|06-07 ▶

**MARIE LENA TUPOT****Managing Director at scenarioDNA**

Educated at the Fashion Institute of Technology in New York, Marie is Managing Director and Head of Research at scenarioDNA, where she focuses on consumer aspects of brand planning. Her previous work experience includes roles as a content strategist and copywriter, and is co-author of *The Culture of Luxury* (2011). Together with Tim Stock, she presented luxury to IN magazine.

P|28-29 ▶

**ROBERT VAN OTTERDIJK****FAO/SAVE FOOD**

Robert van Otterdijk is team leader of the SAVE FOOD initiative of the Food and Agriculture Organization (FAO) of the United Nations. He looks at how quality management and the development of the value chain can support global agro-industrial development and competition. He highlights the causes, consequences and solutions of food loss.

P|44-45 ▶

**LARS WALLENTIN****Packaging Designer**

Born in Sweden and educated at the Graphic Institute in Stockholm, Lars Wallentin joined the Nestlé company in 1964 where he was responsible for the development of creative design solutions for strategic brands such as Nestlé, Nescafé, Maggi, Buitoni, Nesquik and KitKat. IN sat down with Lars to discuss the meaning of creativity.

P|18-19 ▶

**JEAN-LOUIS WARNHOLZ****Founding Principal & Managing Director of Blacklvy**

Jean-Louis Warnholz recognized Africa's promise early; driving several initiatives to make use of the business opportunities in the rising continent. Today, he is the Founding Principal of Blacklvy LLC, an investment company that helps build commercial enterprises in Sub-Saharan Africa. He spoke to IN about the prospects for business investment and the developing packaging industry in Africa.

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## CONTRIBUTORS





1

## 1 Simply chic

"Matte surfaces are very exclusive at the moment"

## 2 Be green

"Reverting to packaging that reflects green values is happening more frequently. We're increasingly seeing the looks of natural material such as the image of wood or Kraft paper being used, to reflect authenticity"

## 3 So luxurious

"Luxury is growing very fast. Everybody, even private label brands, are striving for that look of exclusivity"



2



3

# THE ROLLER COASTER OF DESIGN



Interview with Roland ten Klooster, Chair of Packaging Design and Management at the University of Twente and CEO of a packaging design agency

EVERY MARKETER AND MERCHANDISER IS LOOKING FOR THAT NEXT EYE-CATCHING PACKAGING DESIGN THAT WILL TURN HEADS AND TRANSLATE INTO SALES. WHILE ATTRIBUTES LIKE COLOR, TYPE, SHAPE, MATERIAL OR STYLE ALL PLAY THEIR PART, THERE IS ALSO AN ELEMENT OF BEHAVIORAL SCIENCE BEHIND DEVELOPING THAT STANDOUT NEW PACKAGE.

Roland ten Klooster, Chair of Packaging Design and Management at the University of Twente (Netherlands) and CEO of the packaging design agency Plato product consultants, spoke to IN about current trends, technology and the importance of design education in the ever-changing world of packaging design.

## What are the top trends with regards to packaging design?

Trends in packaging are like fashion – they come in and go out. There is never one single style in packaging but many all at once. Consumers first absorb the overall image of the package including the words, the shape, and the movements – then they look at color and contour. These elements are of key importance as they dictate which product the consumer will be drawn to and link to the psychology of buying behavior. Product fit and brand fit are key elements. Reflecting this, packaging design is currently heavily driven by visuals such as color and materials but this is followed closely by packaging convenience – which impacts mostly structural design – and contour.

## What do you see as the key drivers of these trends in the industry?

As a brand it is important to be fully aware of current industry trends. Consequently, marketing can be seen as one of the biggest influencers in packaging design development. Many marketers today are too focused on numbers which has driven a “hit-and-run” strategy when thinking about packaging design. While fast, this approach can sometimes miss the fundamental insights needed.

Additionally, technology is and will continue to be a key driver in packaging design. In the end, the package has to run efficiently on the packaging line. Retailers at the end of the value chain are also raising the stakes in terms of putting more home brands on the shelves.

## How does education help to train the next generation of young packaging designers?

People today still view packaging design

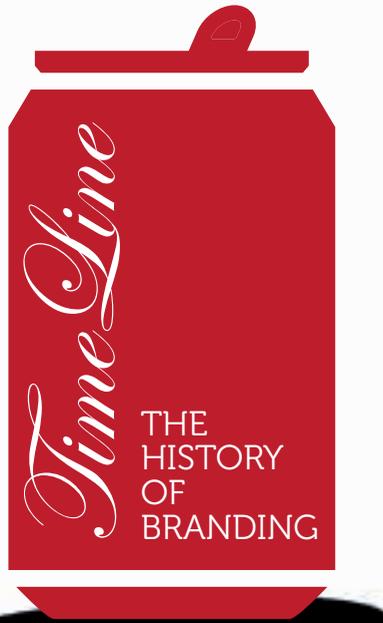
as simply graphic design – but it is so much more. I teach industrial design (structural) at the University of Twente, which has, until recently, been neglecting continuing education on the packaging development process as a tool of packaging design. The curriculum takes into account elements like material, production, engineering, processing, pallet size and transportation and we try to integrate this with the design, the appearance of the package and convenience – essentially everything that has a huge impact on cost and production for a company and also on the environment. There are a lot of key decisions to be made throughout the process and that is why I try to teach my students that integration and full-collaboration is important when working in this industry. An innovation is only feasible if the whole value chain is involved in the decision-making process.

## How do you see packaging design evolving in the future?

Today, technology is playing a much larger role in bridging the gap between customers and companies. Brands now turn to social media to gain a fast reaction from consumers. In the future, social media will continue to drive packaging design as we move towards a greater awareness of consumer preferences. The growing trend to personalize products is increasingly linking the package closer to the product, and only with an in-depth understanding of our customers can we achieve this.

Sustainability will, as always, continue to be a key driver in packaging design. Although we aren't doing badly in this space, with more lightweight packages on our shelves, higher recycling rates and more use of recyclable material, progress is happening, albeit slowly.





1800s

1. The British Bass & Co Brewery claims that their red triangle brand was the world's **first registered trademark (1876)**. Similarly, Antiche Fornaci Giorgi, an Italian brick maker, has carved its bricks with the same logo since 1731. This logo is still visible at Vatican's Saint Peter's Basilica.

1900s

2. **In the 1900s**, most branding strategies focused on highlighting a **product's benefits**. This was particularly true in the case of medical manufacturers. For stomach pains, drinks like Coca-Cola or Pepsi were advertised as cures. Today, they have dropped the medicinal argument and identify with fun and youthful lifestyles.

1960s

3. **In the '60s**, a time characterized by the booming car industry, branding focused on the **customer experience**. Henry Ford even wrote to the poet Marianne Moore asking her to come up with a car name that would convey elegance. She proposed "intelligent bullet," "utopian turtletop," and "pastelogram," among others.

Today

4. These strategies later evolved to incorporate **lifestyle**. There was a time in the United States when the fanciest dairy products available came from Denmark, as it was perceived that the Danes produced the best dairy in the world. This is when Häagen-Dazs was introduced. Far from being Danish, the ice cream was created by two Polish entrepreneurs from New York who made up a Danish sounding word.

# Of brains and brands

Product branding can be traced back to the Stone Age, when hunters labeled weapons in specific ways depending on their use. The term comes from the Old Norse word "Brandr," which means to burn. Cattle and sheep had been marked with painted numbers, but the results tended to fade. Ultimately the Norse people began to use hot irons to "brand" their property, hence the name.

Today, branding has moved way beyond the need to depict ownership and has become a company's bridge to its customers.

EVERYONE HAS IN THEIR MIND A NETWORK OF CONSUMER BRANDS THEY ASSOCIATE WITH. WE ARE EXPOSED TO APPROXIMATELY 125 BRANDS AN HOUR – BUT WHAT MAKES ONE MORE MEMORABLE THAN THE OTHER?

One of the first things that can differentiate the identity of a brand is the impact of visuals. According to a study conducted by the University of Winnipeg entitled **Impact of Color on Marketing**, 90 percent of people base their judgment of a brand solely on color. But words are powerful too. For example, BlackBerry's launch in 1999 followed a linguistic study by Lexicon, a firm that invents names for products, suggesting that the sound of the letter "b" was one of the most reliable in any language.

Douglas Van Praet, author of **Unconscious Branding: How Neuroscience Can Empower (and Inspire) Marketing** speaks of a dual necessity for brands. The human mind detects patterns, he says, making people feel comfort when they recognize traits they are familiar with. However, there

are risks involved in following patterns, namely that the human mind may simply ignore them. A green field is not striking, but a purple one may turn heads. The key is to disrupt common patterns to trigger attention while still making people feel at ease.

However, it is only when memory begins to play a role that a bond with a brand can be created. Daniel Kahneman, father of behavioral economics and Nobel Laureate, says it's not about the experience, but memory.

He believes people are capable of experiencing something, but if that experience is interrupted or ruined, the memory of it will disappear. In his eyes, humans are dual natured and consist of the experiencing self and the remembering self. Applying this theory, brands are much more than just a label to a consumer – they can be seen as an event or a moment they remember.

Neuroscience further differentiates between explicit memory and implicit memory of prior consumption experience. Advertising strategies were on the right path when they began to

use experts to advertise products in the '60s but the scientific demonstration only just arrived. Recent research proves that showing an expert or a celebrity spokesman near a product strengthens the link between memory and preference.

Neuroscience can analyze the inner workings of the mind. And soon it may be able to influence it. MIT scientists Steve Ramirez and Xu Liu are two of the many researchers working on making **Eternal Sunshine of the Spotless Mind** a real possibility. Their method? "We are trying to shoot lasers into the brain."

in

DID YOU KNOW

We are exposed to approximately

125

brands an hour\*



DEVELOPING LIGHTER WEIGHT PACKAGING IS PART OF A GLOBAL TREND TO CREATE MORE SUSTAINABLE PACKAGING THAT USES LESS MATERIAL AND COSTS LESS.

This process, known as lightweighting, can have a ripple effect of benefits throughout the packaging supply chain. Cutting costs by using less material, but without sacrificing performance, can ultimately lead to a smaller grocery bill for consumers.

For example, on a typical delivery run of glass jars filled with yogurt to a grocery store, 36 percent of that yogurt truck's weight can be attributed to the glass containers alone. By converting to flexible plastic packaging and lightweighting the packaging, shippers are able to cut that container weight to less than 4 percent, allowing delivery of the same quantity of product with two trucks rather than three.

in

DID YOU KNOW

9.6 billion

people are predicted to be walking the earth in 2050. From water to fresh produce to meat packaging, plastics will play a large role in their everyday lives.<sup>1</sup>

*Loving*

Lightweighting

An economic and ecological dream

**61**  
million tons of CO<sub>2</sub> emissions are prevented on average by using plastic packaging over other materials.<sup>2</sup>

**6 to 10**  
times as many jobs are created by recycling, re-use and composting versus waste incineration and landfills.<sup>3</sup>

**40**  
percent more fuel efficiency is achieved with United Parcel Services' composite plastic delivery trucks versus their aluminum counterparts.<sup>4</sup>

**0.381**  
millimeters was the thickness of an average aluminum can in 1970. Through lightweighting that has been reduced to about 0.10 millimeters today.<sup>5</sup>

**60**  
percent less plastic material is required today for Nestlé Waters North America's half-liter bottle thanks to lightweighting technology over the last 20 years.<sup>6</sup>

**1,643**  
kWh of energy saved for every one million 2-liter PET bottles produced with just two less grams of material.<sup>7</sup>

**20**  
percent less fuel consumption in an Airbus 380 thanks to 25 percent of the aircraft consisting of carbon-fiber reinforced plastic composites.<sup>8</sup>

Since lightweighting uses less material, there is also less energy used to produce material overall.

It shouldn't be associated with "skimping" on material or faulty packaging, though.

Thanks to advances in plastics technology, packagers can rely on materials to be leaner yet still hold strong. In fact, a 1-liter plastic detergent bottle circa 1970 weighed 120 grams. Now? 43 grams, and without losing functionality.

Developments such as these will be crucial as the world grows and sustainability plays a larger role.

Luckily, plastic packagers have already shown an ability to adapt. From 1999 to 2004, global plastic consumption grew 20 percent yet the packaging industry was able to limit its material usage growth to 4 percent over the same time frame.

It is predicted that 9.6 billion people will walk the earth in 2050. From water to fresh produce to meat packaging, plastics will play a large role in their everyday lives. In a world with finite resources, it's crucial that we look everywhere for opportunities to use less raw material and less energy while at the same time continue to improve packaging quality.

1 United Nations  
2 Plastics Europe  
3 Global Alliance for Incinerator Alternatives  
4 New York Times  
5 Carnegie Mellon University  
6 Beverage World News  
7 WRAP UK, Retailer Innovation Final Report  
8 Airbus



# Greener *packaging*



## pastures

Manuel Gómez is Walmart's global Vice President (VP) of Sustainability. He has been with the company for over 10 years in a range of merchandising and management roles primarily focused on Mexico and Central American markets, before moving to his current position where he leads the strategic development of Walmart's global sustainability efforts across the supply chain.



### What projects does Walmart currently have under way to encourage sustainability in the supply chain?

Our work with the Sustainability Consortium, which we started back in 2009, was developed alongside other suppliers and NGOs to provide sustainability metrics for our industry. Walmart uses those metrics to power the Sustainability Index with the intention of helping our teams and suppliers identify opportunities to better focus their environmental footprint. We have over 700 categories, backed by science, and almost 50 percent of our business is using them in their daily activities. Because of this we're able to identify some of the biggest barriers to sustainability today.

### In particular how will your Closed Loop Fund target sustainability growth in the plastics industry?

The Index identified recyclability and recycled content as some of the major areas to improve in relation to the sustainability of packages. One of the challenges evident was the lack of availability of recycled plastics that can be used in products or packaging. The Closed Loop Fund can unlock these barriers and encourage more recycling collection through capital. The fund was formed with others in the value chain and we are targeting to raise \$100 million for investment. We are very excited about this as a possibility to join public and private parties, and capital, in one place to boost recycling.

### In your drive for sustainability, how did Walmart decide which areas it wanted to push lightweighting? And why?

We work closely with suppliers to continuously challenge the status quo and rethink packaging. We've already seen improvements across many areas such as our Oak Leaf brand wine bottles – where the weight of a wine bottle has decreased 37 percent compared to the previous bottle. This impacts both the environmental footprint and the costs of production and allows for greater numbers shipped in the same consignments. These types of efficiencies go hand-in-hand with our consumers as we can then pass on the products we offer at lower prices. More sustainable packages mean lower costs, prices and ultimately more sales. It's more sustainable in various uses of the word.

### What are the benefits to retailers to practice lightweighting? Can smaller retailers benefit from it as well?

Absolutely! They definitely have a lower environmental impact and many of the examples I've touched on indicate that this is a process that spans the packaging value chain. We highlight the "Reduce, Reuse and Recycle" ethos but have added another one which is "Rethink" – challenging people to think differently and finding new ways to innovate and new opportunities, whether a small, medium or large retailer.

### How important is lightweighting to Walmart's overall sustainability efforts?

It's very important to lightweight but we see it as one way of finding opportunities to have more sustainable packaging. Other opportunities are around post-consumer recycled content where we've seen examples of 70-100 percent use of post-consumer recycled plastic that doesn't sacrifice the quality or appearance of the packaging. The most important thing is to challenge and work collaboratively.

What's still needed going forward is closer communication with the consumer so they understand what we are doing as an industry. This isn't about asking them to pay a premium for a product but for them to be aware of better packaging, how to dispose of it after use, and to know the great things that our suppliers are doing. We're looking to pilot some initiatives online, which we think is a better way to provide information to consumers so they can make more informed decisions and be aware. We see our role as making sustainability available to every shopper out there looking to buy their favorite products at an affordable price.



#### What is the current state of the packaging market in Indonesia?

Indonesia has a population of more than 240 million people, an emerging middle class that is driving strong domestic consumption and a robust and resilient economy. In turn, this is encouraging private spending to remain robust in Southeast Asia's largest economy, allowing the packaging industry in Indonesia to grow in line with other industries — the food and beverage industry being the biggest.

#### How have consumers played a role in the improvements in packaging design and usability?

There are many things that impact trends in packaging. While the economy plays a central role, there are a number of other factors that have an impact irrespective of the performance of the economy. As consumers, these include trends like the ageing population; smaller households; the increasing requirement for convenience; rising health awareness; and the trend towards "on-the-go" lifestyles.

When one thinks about where sophisticated consumer packaging is created, most people naturally gravitate towards Western markets for the answer, but one country that is leapfrogging all expectations in consumer packaging is Indonesia. Ariana Susanti is currently President of the Asian Packaging Federation after 12 years as Director of the Indonesian Packaging Federation.

#### How is available technology in the market evolving?

Improvement in the production process and product appearance is an important element when enhancing product quality and increasing market share. Since product packaging has evolved to become product identity, applications of packaging technology and creative packaging design is an ideal strategy that should enhance our national product competitiveness in the global market. But with many technology improvements and several product innovations, the packaging industry and its applied industries are trying to find new innovative packaging for its products in order to add to its sales value.

#### How does the Indonesian market compare with the Asian or global market as a whole?

The Asia-Pacific region is becoming a larger player in the global economy, which is evident in both demographic and economic terms. Indonesian middle-class consumers have been showing signs of cost savviness in terms of their choice of product packaging. This is resulting in a robust increase in demand for relatively new packaging formats such as stand-up pouches for soy-based sauces (instead of glass bottles) and condensed milk (in place of metal cans).

#### What does the future of the packaging market in Indonesia look like to you?

In the future this industry will continue to grow, in parallel to strengthening demands for not only packaging but better quality packaging. The growth of the modern retail sector in Indonesia will fuel growth for packaged products as convenience stores are trying to attract Indonesian consumers from low- to middle-class families who traditionally shop at neighborhood outdoor markets.

in

DID YOU KNOW

138

Indonesia is the fourth most populous nation and fits 138 people per square kilometer. Compare this to the United States' 35. Indonesia's emerging middle class is driving domestic consumption.<sup>1</sup>





The Human Element  
at Work.

# MAKING FRESH GO FURTHER AND LAST LONGER

More than 1/3 of the food we grow is wasted. So at Dow, we put our scientists to work on the problem. And they came up with innovative solutions in packaging. Solutions that ensure the food we grow stays fresher, longer.

# New flexible packaging technology provides an alternative to rigid containers

THE ORIGINAL RIGID-WALL GERMAN "JERRY CAN" HOLDS 20 LITERS AND WAS USED THROUGHOUT THE 1940S BY MILITARIES TO TRANSPORT AND STORE FUEL AND OIL. OVER THE 80-PLUS YEARS SINCE, THEIR USE HAS BECOME MUCH MORE COMMERCIALIZED ACROSS THE SUPPLY CHAIN. ABOUT 50 BILLION OF THEM ARE SHIPPED EMPTY AROUND EUROPE EVERY YEAR.<sup>1</sup> ONCE THE PRODUCT IS USED, THE CONTAINERS HAVE TO BE TRANSPORTED BACK TO A FACILITY FOR REFILL, USING SPACE, FUEL, TIME AND RESOURCES.

Enter PacXpert™ Packaging Technology — a lightweight, flexible alternative to rigid containers that uses 10 times less space than a traditional "jerry can" when empty<sup>2</sup>. The 20-liter PacXpert™ container weighs significantly less than the average jerry can, and the smaller sizes offer improvements over other hard-walled plastic and glass containers.

PacXpert™ containers offer an immense range of capabilities in terms of the products it can hold including numerous household, institutional and industrial applications like food, condiments, liquids and dry goods. This lightweight packaging design offers resealable closures and built-in ergonomic handles, enabling precision pouring, easy reclosing and convenient carrying.

Empty PacXpert™ packages can ship and store flat, increasing shipping and warehouse efficiency and possibly reducing carbon dioxide emissions. PacXpert™ functionality is even more impressive with see-through packaging allowing consumers to see the contents within or the opportunity to print on all four sides, ensuring strong brand visibility.

PacXpert™ is already being recognized as an innovative development in the packaging industry. It was awarded the 2013-2014 WorldStar Packaging Award from the World Packaging Organization as well as the 2013 ABRE Gold Award from the Brazilian Packaging Association.



®™ Trademark of the Dow Chemical Company

1 Euromonitor data  
2 Data per Dow tests; additional information available upon request



# THE POWER

*of*

# WORDS

Browsing the choice of product brands on the shelf can sometimes be a confusing and tedious task. Consumers typically look at price comparisons, product specifications, instructions and certifications to determine what option is best for purchase.



PACKAGING DESIGN CAN DO MANY THINGS TO HELP DRAW THE CONSUMER IN AND PROVIDE A USER-FRIENDLY EXPERIENCE, WHETHER INFLUENCING THE IN-STORE PURCHASE OR AFTER TAKING THE PRODUCT HOME. WORDS CAN PLAY A VITAL ROLE IN CONNECTING TO THE CONSUMER – IF USED CORRECTLY – BY OFFERING CLEAR AND CONCISE INFORMATION THAT LEAVES NO ROOM FOR QUESTION.

Seung Kim, a design student, recognized the need for words to communicate efficiently and effectively, and developed a new approach to packaging design for pharmaceuticals.

**Where does it hurt? You've recently released a line of designs called: "Pain Killer" – tell us about this work and the theory behind it.**

The original intent wasn't so much focused on the power of words. The reason I redesigned the painkiller packaging came from my own personal experience. As a consumer, I found it hard to identify the medication, its attributes and side effects, inside

pharmaceutical packaging. It was hard to interpret their usage, direction and ingredients. To address this, I came up with different visualizations that represented each pain. I also created a better typographic system so that texts could be read easily. My goal was to create a clean and strong identity that reflected those attributes and to design an effective system that could easily help with patients' needs.

**What was your inspiration for this?**

Geigy Design – a Swiss pharmaceutical design company – was my inspiration throughout this process. They have great pharmaceutical packaging designs



with well-controlled typography and strong visual elements. These are the core elements I focused on in my designs.

#### Why will consumers like this?

Consumers will like this packaging because it is easy and quick to identify with the contents inside, creating a much better user experience. Consumers spend less time at the store and worry less about whether they have purchased the right product for their symptoms.

At the time of this interview, Seung Kim was a graphic design student at Maryland Institute College of Art (MICA).

She completed her Bachelor of Fine Arts (BFA) in May 2014. Previous work experience includes internships at Anthropologie and Michael Kors. Her website can be found at: [www.seung-kim.com](http://www.seung-kim.com).



# What is *creativity?*

Lars Wallentin,  
an innovative  
packaging and  
global designer

"When you have exhausted  
all possibilities, remember  
this – you haven't"

THOMAS EDISON

"Creativity is intelligence  
having fun"

EINSTEIN



WE FACE A DAILY DOSE OF DISRUPTIONS AND CHALLENGES IN TODAY'S WORLD, BE IT CULTURAL, POLITICAL, ECONOMIC, SOCIAL OR TECHNOLOGICAL. BUT DO THESE DISRUPTIONS AFFECT OUR INNATE ABILITY TO BE CREATIVE? LARS WALLENTIN, ONE THE MOST HIGHLY REGARDED CREATIVE EXPERTS IN THE CONSUMER PACKAGING INDUSTRY, EXPLORES WHAT CREATIVITY IS, HOW IT HAS CHANGED, AND WHAT MORE NEEDS TO BE DONE TO ENSURE CREATIVITY STAYS RELEVANT AND AHEAD OF THE GAME.

**In your own words, what defines creativity?**

Einstein said "Creativity is intelligence having fun," which I absolutely agree with, but to me creativity is three words: First, "curiosity", if you are not curious there is no starting point to any creativity. This curiosity gives you "knowledge", the second word. And finally "activity" – if you don't use the knowledge you gain from being curious, there is no creativity. People today however are scared to venture outside the norm and take risks. Creativity is all about risk-taking.

**Do you believe everyone can be creative?**

I believe everyone can be innovative but not creative. Innovation is something you can learn because it is structured. With creativity either you are born with that curiosity to discover and explore, or not.

**What steps can someone take to encourage creativity?**

You must be proactive and not sit in a vacuum. Surround yourself with the right people and try not to care who finds the solution. You can very well be egocentric, but not egoistic in today's world. To encourage creativity you must know who you can work with, and that doesn't mean somebody in the same profession. My creativity comes from fashion, architecture, jazz...everywhere. Today, we go around with headphones in our ears, a coffee in one hand and a smartphone in the other. We have a lot more knowledge at our fingertips thanks to the internet, but we are at risk of losing awareness of the world we live in.

**What's the typical process packaging designers go through to get to the designs we see on our shelves?**

I believe and teach the "old way", where

you start with the spark of a great idea and for that you need no tools, just a brain. Then you need to visualize your idea – with magic markers! After that, you should go to the computer. But you must start from that thought process. When I look at computer-generated movies like Toy Story, I realize how behind the packaging industry is. These are successful examples that show the consumers' need for an instant connection. I think today, because we immediately look to digitalize everything, we forget the true essence of what we are doing. But I think this is temporary, we will move past that.

**Today we hear packaging companies teaming up with biologists, psychologists, all different people in different fields to dive deeper into human behavior when it comes to packaging design – at what point is it enough?**

With curiosity, you push yourself to constantly study human behavior and there is not enough of that today. You should stay on top of store checks and the competition as well as technology such as digital printing and television/cinema. The visual aspect of television broadens your mind and educates you on what is going on in the world around you. Packaging should add value to a product, and you need to know the environment in which you are putting that product in if it is going to succeed.

**Do you think some markets or countries capture creativity better than others? If so, which ones?**

I believe countries with few hang ups or customs like Brazil certainly do. In Europe, I think France has overtaken England slightly, but both are still very strong. In these markets, the drive has come from the competition created by retail chains. In Japan packaging design is a culture, almost an art form. Japan respects packaging whereas in Europe, packaging has evolved into something that is viewed negatively due to difficult "opening devices" and bad communication, for example, text that is too small.

**Can you give examples of projects you've worked on where creativity has thrived?**

My first example was looking at the

"words" in Brazil for a confectionary product. Our first idea was to call it a French word, but we soon recognized that idea wouldn't work so we ended up going with "sem parar" (meaning non-stop in English). It felt right immediately.

The second example is about "material". In 1970 I helped with the first design for packaging cooking chocolate, which had to look homemade and traditional. We used Kraft paper (still a trend today) and printed in one color to save costs. Today it is still the biggest-selling chocolate in France, has been copied by all private labels and is now a benchmark reference in this category.

Third was a matter of "figures" and familiarity. We were launching a chewing gum in Russia with different strengths, and knowing that the consumer would relate more to minus temperatures we labeled them from minus 70 (strongest) to 0 (weakest).

The last example focused on "layout", when Nescafé was launched in Japan as a liquid in a can. The typical font became quite small horizontally, so we introduced a vertical logotype. A seemingly simple exercise, but big at the time.

**If you could have dinner with five of the most creative people in the world, who would they be?**

1. **Philippe Starck**, an industrial designer, because I think industrial designers are one step above packaging designers.
2. **Ferran Adrià**, a Spanish chef at El Bulli, in Catalonia, Spain, because of how he broke away from tradition in restaurants. He opened our eyes to what inspired him: "creativity is not copying".
3. **Kevin Roberts**, Saatchi and Saatchi, a very creative man in the world of advertising.
4. **Patrick Chappatte**, a cartoonist, because I believe the best way to communicate is through a cartoon – all visual and little text.
5. **Jean-Thomas "Tomi" Ungerer**, an illustrator/author, a hilarious person who has captured the ability to create excellent children's books that are equally as good for adults.



PAUL RODGERS, A PROFESSOR OF DESIGN ISSUES AT NORTHUMBRIA UNIVERSITY IN THE UK, EXPLAINS THE PROCESS BEHIND DISRUPTIVE THINKING. IT STARTS, HE SAYS, WITH DISILLUSIONMENT ABOUT CONVENTIONS AND THE TRADITIONAL WAY OF DOING THINGS, FOLLOWED BY A DESIRE FOR CHANGE. "DISRUPTIVE THINKING CHALLENGES EXISTING NORMS AND ACCEPTED BEHAVIORS," HE CLAIMS. "IT'S ABOUT DISRUPTING THE STATUS QUO."

## REDESIGNING THE STATUS QUO

# DISRU



The European Union (EU) business district in Brussels, including the European Parliament, is known for its traditional architecture with austere gray exteriors that are stately but universally plain. Or at least it was until last year when some "yarnstormers" stepped in to wrap the district's bollards, bike racks and trees with colorful knitted panels. Yarnstormers are part of a new craft movement that is reclaiming public spaces and brightening up cities with customized wool creations. Like Picasso with the Guernica, or Banksy with his famous graffiti, they are using art as a tool for visual change and disruption.

Paul Rodgers, who co-founded the Design Disruption Group in 2010 with Andy Tennant, Freddie Yauner and Giovanni Innella, thinks that disruption is a core function of the design process. Designers have keen observation skills and are educated to interpret data and empathize with their audience in order to fashion new design solutions. According to Rodgers, design “is one of the best tools we have to help us make sense of the contemporary complex mess we live in.”

Together with observation, design also consists of communication. In terms of disruptive design, it means manipulating visual vocabulary and language to influence and educate people in new ways. From Rodgers’ point of view, this ability to switch from analysis to synthesis represents the future of design.

And what does that future look like? According to Rodgers, it means there will be a role in society for designers that goes far beyond the creation of a new chair or table. There has never been a better time to be a designer.

The challenges now are much bigger and more important — the analytical and communication skills of designers will be sought after in all areas and there will be a move from material to immaterial projects. “Designers may not be making chairs, but policies,” he predicts.

For this to work, it is important for designers to maintain their focus on societal enhancements. “We don’t want to disrupt for the sake of disrupting,” Rodgers says. “A disruptive designer’s intention should always be to disrupt for good.”

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#### THE THREE “HOWS” TO THINK DISRUPTIVELY

##### 1. How can you bring positive change via disruptive design?

When disruptions arrive, in any field, the people involved feel a bit uncomfortable. Often they feel a little anxious because they perceive things to be out of control. It is important for the people in charge of leading the change to monitor others closely and to empower them. We have seen organizations where everyone is creative, but the talent has been suppressed through education or work. For many, these disruptions are an opportunity for bigger changes.

##### 2. How do you nurture creativity?

People need to feel empowered. This can be difficult at a time when everyone, from individuals to corporations, has other priorities, particularly because of the economic crisis. People are swamped with pressure. It’s important to introduce people to opportunities they have never seen.

##### 3. How is disruptive design currently impacting our world?

Changes to our visual vocabulary and language filter through the layers of corporations and society. They create enough changes to open up new questions and challenges. This empowers individuals and encourages them to go and make change themselves. Disruptive design doesn’t inflict change; it gives people the tools they need to create change on their own.

# POSITIVE design



# KNOW THE BOX

## TO THINK OUTSIDE

The world of packaging today requires professionals that understand product branding like no one else. Traditionally, packaging designers did not embark through academia, only sporadically enrolling in arts and design courses.

Now, with the industry constantly evolving, packaging designers are more in demand for their expertise in this field. This growing need for specialization has resulted in a number of programs like the ELISAVA Master of Packaging course. Alex Jimenez and Jon Marin from ELISAVA, share their experiences on how education can better equip the next generation of packaging designers and bring packaging to a new level through disruptive design.

## EVERY DESIGNER WANTS TO THINK OUTSIDE OF THE BOX.

But they first need to know the box – its purpose and intention. At the ELISAVA Master of Packaging Design (Barcelona) we tell our graphic and product design students that they can only come up with good ideas when they understand the entire system in which they are trying to create. The key to breaking that box is a combination of thorough investigative work and a spark of creativity.

Our students have applied this thinking to a number of new packaging designs. For example, after realizing how much toothpaste was wasted in tubes, they invented a distributor that minimizes the amount of toothpaste left inside the

package. Additionally, we asked them, “why do we keep using packages that last for a thousand years for something as fleeting as an ice cream or fresh fruits?”

Their solutions were the creation of recyclable packs for perishable products and durable containers that are given a second life for long-living products.

These are just a couple of examples that shed light on the main differences between this generation of designers and previous ones. This generation is more concerned with the social and environmental parameters of their creations. They know that packaging doesn't need to just look good; it needs to be functionally and sustainably good too. The students are interested in the positive impact of their ideas in society,

the economy and the environment. They are also able to do this while keeping a business-oriented mindset that previous generations lacked.

Designers are no longer the individuals that shape new products. They are the link between the company, the user, and their surroundings.

They help the company think about what they need and what they can offer, just as much as they help the consumer. Today's products are born (or should be born) out of the “company-user-designer” trinity.

For these reasons, the world of packaging requires professionals that understand products like no one else. Traditionally, designers have learned their trade through art and design courses or didn't go through academia at all. But in an increasingly specialized world, the demand for dedicated education and training has resulted in programs like ours.

Knowing and teaching everything about the box is what will help us leave it behind.

## AUTHORS



Alex Jiménez is a cofounder of Nutcreatives, a design agency that integrates product design and eco innovation. He is an industrial design engineer involved in the entire design process from conception to execution. Nothing escapes his gaze.



Jon Marín is a biologist and industrial ecologist, as well as a cofounder of Nutcreatives. He brings his knowledge of ecological systems into the material world and translates theory into real things. With Alex Jimenez, he runs the ecopackaging workshop in the ELISAVA Master of Packaging Course.

### Juan Pérez and Daría Fargues:

These sport earplugs are packaged with as little material as possible, using air to create a protective space.



Alejandra de la Garza and Janire Zamora: Headphones packaging made out of cardboard. One part of the box can be used to wrap the headphones around.



Diego Frayle, María Duriana Rodríguez and Silvia Alberti: Cardboard packaging for fruits and berries. It turns fruit into something similar to candy.



EVERYTHING YOU CAN  
IMAGINE IS REAL

PABLO PICASSO

CREATIVITY TAKES  
COURAGE

HENRI MATISSE

THE IMAGINATION  
IMITATES. IT IS THE  
CRITICAL SPIRIT  
THAT CREATES

OSCAR WILDE

LET'S GO INVENT  
RATHER THAN WORRY  
WHAT HAPPENED

STEVE JOBS

IN ORDER TO BE IRREPLACEABLE  
ONE MUST ALWAYS BE DIFFERENT

COCO CHANEL

SURROUND YOURSELF ONLY  
WITH PEOPLE WHO ARE  
GOING TO LIFT YOU HIGHER

OPRAH WINFREY

WHEN YOU ARE ENTHUSIASTIC  
ABOUT WHAT YOU DO  
THIS POSITIVE ENERGY  
IT'S VERY SIMPLE

PAULO COELHO

A GOAL WITHOUT A PLAN IS JUST  
A DREAM

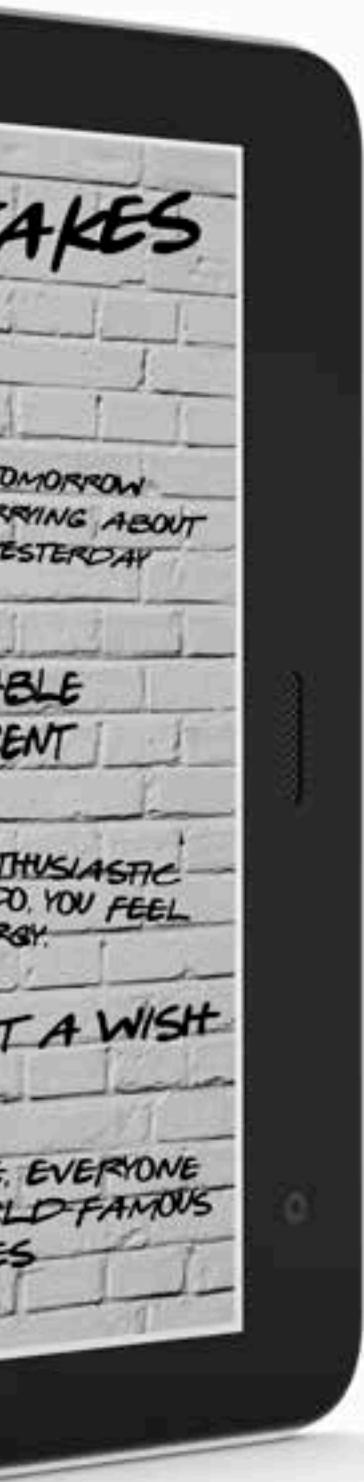
ANTOINE DE SAINT-EXUPERY

THE  
IMPOSSIBLE  
IS TEMPORARY

CASSIUS CLAY

IN THE FUTURE  
WILL BE WORKING  
FOR 15 MINUTES

ANDY WARHOL



# Words matter

They are shaped by our thoughts, but impact our actions. In 2010, a UK-based consultancy proved it with a viral video showing a blind beggar. The video portrays a blind man sitting outside with a bucket of coins that only a few people care to look at. His sign reads "I'm blind, please help." A passerby stops near the man and changes the words on his sign, which begins to appeal to everyone on the street. The beggar's bucket gets full within minutes. "What did you change?" he asked the woman with the marker. "Nothing," she replies. "I said the same thing with different words." The sign read: "It's a beautiful day and I can't see it."



WHEN IT COMES TO COLOR IN CULTURE, DID YOU KNOW?

Brides wear red in eastern cultures

Red is the Chinese color of good luck and celebrations

Red is the color of mourning in South Africa

Yellow is the Royal color in Thailand

Studies show that green in China is "generally not good for packaging"

# A wheel of *colors*

The human eye can see as many as 10 million colors<sup>1</sup>. But at the beginning, there is just light. Light receptors transmit messages to the brain, and it is the brain that produces the familiar sensations of color.

Research has shown that color can cause real emotional and physical changes in people and our surroundings. In the world of branding and package design, color can be a catalyst for connecting with consumers that ultimately drives sales and buyer loyalty. Karen Haller, an applied color psychology specialist for consumer branding, recommends that brands begin their color assessment by identifying what their true personality and core values are. "The colors I then recommend communicate on a subconscious level what the words are communicating on a conscious level," she explains.

For global brands, it's important to consider both cultural and psychological color influences. Haller explains how "brand owners will want to get their brand and product colors right to elicit the right emotional response to attract their ideal customer and make the sale."

## Reading the rainbow

(By Karen Haller, the UK's leading authority in applied color psychology for branding)

We never see colors in isolation. Each one has its own set of psychological traits; however, it's the combination of colors (with the specific tones and proportions) that creates an emotional response.

**Red:** Red expresses warmth, energy and excitement. It's the color representing masculinity, stamina, strength, motivation. The negative traits of red can be seen as aggressive, confrontational and defiant. It can cause a visual impact creating a strain.

**Orange:** Orange can be seen as fun, joy, playful. Negatively it can come across as flippant or frivolous.

**Yellow:** Yellow expresses happiness, self-confidence and optimism. Negatively yellow can elicit feelings of irritation, anxiety and nervousness.

**Pink:** Pink is the color that represents femininity. Soft pinks express nurturing, caring, feminine love. Magenta pink expresses feisty feminist traits. Negatively pink can be seen as weak, needy, emasculating.

**Blue:** Research shows blue to be the world's favorite color. It evokes feelings of calm, tranquility, trust. Turquoise is dynamic and energizing. Negatively blue can be seen as cold, aloof, even uncaring.

**Green:** Green expresses feelings of balance and harmony. It provides reassurance, restorative and refreshing. Negatively green can bring up the feelings of boredom, lack of life and stagnation.

**Purple:** Purple relates to the higher self, truth and inner contemplation. We associate it with spiritual awareness and inner reflection. It also communicates luxury, wealth. Negatively could be seen as losing touch with reality. Using the wrong tone can communicate cheap and nasty, faster than any other color.

**Brown:** Brown expresses solid and reliable, supportive. Negatively, it can be seen as heavy, dull, lacking sophistication.

**White:** White represents purity, clarity, simplicity. Negatively it can evoke feelings of cold, sterile, unfriendly, elitism.

**Black:** Black expresses glamour, sophistication, emotional safety, efficiency. Negatively black can be seen as cold, oppressive, overly serious.

**To find out more download 7 Mistakes Most Business Owners Make with Their Branding Colours**  
<http://karenhaller.co.uk/freebook7mistakes.htm>

[www.karenhaller.co.uk](http://www.karenhaller.co.uk)  
Twitter: @KarenHaller  
FB: <https://www.facebook.com/KarenHallerColourAndDesign>

In India, white is traditionally the only color a widow is allowed to wear

Eskimos use 17 words for white to describe different snow conditions





# DISCOVERING *Luxury*

What if the word “luxury” was banned? Marie Lena Tupot and Tim Stock, founding partners of a global innovation consulting firm called scenarioDNA, raise that question in their book *The Culture of Luxury*.

THE QUESTION TO MOST CONSUMER GOODS BRANDS IS: IF “LUXURY” CEASED TO EXIST, WOULD THEIR PRODUCTS STILL BE RELEVANT? WITH MORE FOCUS ON PRISTINE PACKAGING FOR LUXURY ITEMS, TUPOT AND STOCK SHARE THEIR THOUGHTS ON THE BEST WAY TO PACKAGE THE WORLD OF LUXURY.

in

DID YOU KNOW

84 billion

The US is the largest regional market for luxury goods. With a value of \$84 billion. It is followed by Japan and Italy.<sup>1</sup>

## How do you define luxury?

Webster defines luxury as “something adding to pleasure or comfort but not absolutely necessary” – and we concur. However, we would add that contemporary luxury is further defined by what it is not: ostentatious, wasteful, and gaudy.

Today, luxury is confidence, self-possession and having the knowledge to accept all of the immeasurable intangibles that come together to make a product irresistible to one’s desire. Luxury is no longer one concept, or the vision of a singular group of people. What is defined as luxury to one person might not be the case for the next.

## Why is the exterior of a pack so important to the user experience?

The exterior of the package expresses the values a luxury product stands for. No marketing campaign or TV spot can take the place of how a product presents itself in person. People that

are willing to spend more today, also expect to know what they are getting immediately. They are making decisions based on data and return on investment.

If you buy something that is considered a luxury, it should consistently present itself as a luxury, whether it is ermine or sausages. The feeling of indulgence shouldn’t wait until the sausage is cooked and served – there needs to be a relationship from the product to all aspects of packaging. Labels alone do not demonstrate the value of a product.

## Can you give us an overview of the new trends of luxurious packaging goods?

There is a huge range of diversity across luxury products, and because of this we are also seeing variety in packaging. In some cases we see simple and discreet designs but on the other hand, luxury packages are using texture and surface to reflect the nature of the product inside.

<sup>1</sup> Statista – The Statistics Portal, <http://www.statista.com/topics/1110/global-luxury-goods-industry/>



in

DID YOU KNOW

There are definitions for types of litterers, such as:

WEDGERS

Litterers that stuff or wedge their litter in small places, such as a gap between seats, so it will not be seen.



Litter is a global environmental problem and we have a shared responsibility to address it. One organization doing its part to raise worldwide awareness and engagement is the Foundation for Environmental Education (FEE).

FEE has set up a number of stimulating educational programs to educate, inspire and encourage people – particularly youth and children – to learn more about how to help protect the environment. One such initiative is the Litter Less Campaign, which is a project run in two of the FEE programs – the Eco-Schools program and Young Reporters for the Environment (YRE). Litter Less aims to raise awareness about littering by empowering young people to make a change.

LITTER  
LESS



in

## DID YOU KNOW

There are definitions for different types of litterers, such as:

## UNDERTAKERS

Litterers that cover or bury their litter under soil, sand or leaves.

IN asked Anna Normann, Project Manager at FEE, why initiatives like the Litter Less Campaign are so important for the next generation:

**What is the ethos behind Litter Less?**

Litter is often a neglected area when working with environmental issues. People think that it's not as urgent, but it is. It is also an ideal area to engage young people and students because of the instant results they see. If one picks up a discarded can on the street and puts it into a trash can, for example, they can immediately see the change they've made. One less can on the street means one less piece of litter – it's a small, but substantial step.

**What role is the campaign playing in changing behaviors of young people today?**

The Litter Less Campaign follows a seven-step methodology similar to what we use across all our Eco-Schools. One of the seven steps is to set up an eco-committee – of which 50 percent is made up of students, the rest being management and teachers. The eco-committees assess the sustainability situation, select a theme, set achievable annual goals, assess and disseminate the work and finally, produce a report indicating the results. This approach allows them to develop skills that focus their attention on a solution that is realistic and good for the environment.

**What has been the response from students?**

Extremely good! Around the world we see fantastic work going on and it's gratifying to see students discover a reason to make a change.

**What tangible results have you seen?**

We've seen schools install composts, measure and monitor litter in their schools and the surrounding area, and implement recycling schemes. Most of all, however, we see young people empowered. This academic year we've already received 600 reports, which are all available on our website. In the coming three years, we will also be implementing a new service in Eco-Schools that helps them monitor their results and improve reporting. We're also teaming up with universities to improve measurement.

**What is the most satisfying part of working with students?**

For me, to see students engaged and passionate about this issue is great. You see their empowerment and self-confidence grow tremendously, and it's wonderful to see the work they are doing. My only concern is that as they become adults they will lose interest in the litter abatement issue, but that's why programs like ours exist; to form life-long habits that will help protect the environment.

So the next time you see a piece of litter in the street, do your part to help. We should all feel empowered to make a difference.



in

## DID YOU KNOW

There are definitions for different types of litterers, such as:

## FOULSHOOTERS

People who throw trash towards the trash bin, miss and leave the trash on the ground.



# Littering

# 2.0

Every year, approximately \$11.5 billion is spent cleaning up litter across the globe. Yet littering is still a problem, and a problem that humans are consciously aware of causing.

THAT WAS THE THESIS OF PROFESSOR WESLEY SCHULTZ, OF CALIFORNIA STATE UNIVERSITY, SAN MARCOS, WHO CONDUCTED A STUDY ON BEHAVIORAL DECISIONS AROUND LITTER. AFTER OBSERVING AND INTERVIEWING NEARLY 10,000 PEOPLE IN THE UNITED STATES, THE CONCLUSION WAS THAT 81 PERCENT OF LITTER OCCURRED INTENTIONALLY. WHEN PEOPLE LITTER, THEY TYPICALLY KNOW THAT THEY ARE DOING IT.

Previous generations did not necessarily view litter as a potential problem. It was simply not top-of-mind. Over time, a behavioral shift has taken place. "It was almost unanimous," Schultz claims. "We have gone from a time when littering was perfectly acceptable to a situation where it is widely viewed as immoral." A shift that Schultz calls Littering 2.0.

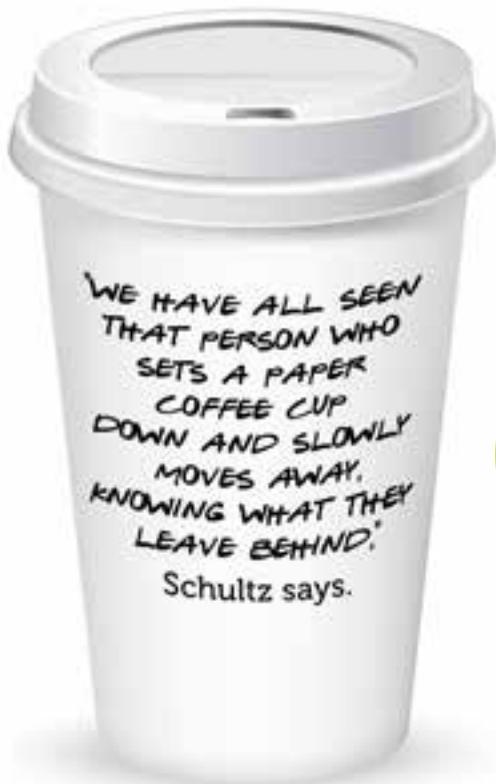
Based on the findings from his research, Schultz advocates for more attention on waste removal infrastructures, rather than focusing only on education. His philosophy is: "If you want people to litter less, you have to make it easier for proper disposal."

"Packaging manufacturers can also play a vital role in providing recyclable packaging and clarity. Removing ambiguity about what to do with packaging is a critical piece," highlights Schultz.

He outlines a strategy based on three key points. One is beautification, or the need to clean up litter to avoid attracting more litter. Another is behavioral optimization, which involves making proper disposal of litter more accessible through improved waste collection and removal infrastructures. And the third and final point, is an awareness campaign to encourage people to use the disposal infrastructure. Without these three focus areas moving in tandem there will likely be people still setting down that coffee cup and walking away.

Schultz stresses that there has been tremendous success with litter abatement over the last 50 years, but that more needs to be done. Organizations such as Keep America Beautiful are using the findings from behavioral science to create litter prevention campaigns that work. "It's the combination of beautification, making proper disposal easy, and publicizing the cultural norm against littering that seems to produce the best results," says Schultz.

The Organization of Economic Co-operation and Development (OECD) estimates that by 2020, humans could be generating 45 percent more waste than in 1995. However, with support for aggressive litter abatement policies and programs, Schultz is optimistic that in another 50 years, things could look dramatically different than they do today.



in

DID YOU KNOW

Littering

in public spaces  
is widely viewed as  
morally wrong.

# an ocean view

Over 20 years ago, almost 29,000 rubber ducks ended up sailing across the Pacific Ocean after spilling from a cargo ship near Hong Kong. From that moment on, following sightings in Australia, Alaska, Greenland and the United Kingdom, these yellow toys revolutionized the world's understanding of ocean currents and raised awareness of one of the most impactful environment problems facing society today, marine littering.

In his book called **Moby-Duck**, author Donovan Hohn estimates that every year between several hundred to tens of thousands of containers like the one carrying the rubber ducks are lost in the world's oceans. On top of this, the oceans are flushed with casting nets left by fishermen or other waste from passing ships. However, according to the European Commission's Environment DG, the majority (80 percent) of marine litter is in fact land-based<sup>1</sup>.

Sea debris is a global concern and can have huge impact on wildlife. Carried by the currents, litter can bond together and form patches like the Great Pacific Garbage Patch.

This debris field floats between California and Hawaii and is estimated to be the size of Texas, with 3.5 million tons of trash. Surprisingly, the Garbage Patch is practically invisible to the naked eye because it is made up of tiny broken-up fragments of debris.

Governments around the world have passed legislation to fight this threat, and industries are committed to finding solutions through initiatives like the "Declaration for Solutions on Marine Litter." Signed in 2011, it is a six-point plan for action for the plastics manufacturing industry that was endorsed by 58 associations from 34 countries.

However, sometimes the simplest solution works best. Boyan Slat, a 19-year-old Dutch student, designed a system to clean the oceans passively. His project, called The Ocean Cleanup, takes advantage of currents and the sea's movements. These currents allow plastic to concentrate before being extracted, by attaching an array of floating barriers to previously identified sea locations. The floating debris is collected in front of the barrier, while sea life flows underneath. This, along with other new initiatives, could help foster cleaner, healthier and more sustainable oceans for the future.

## How much plastic is there really in the oceans?

Counting the number of plastic debris floating in the oceans may seem like counting sheep at night. It can be never-ending. But a group of researchers from the National Academy of Sciences in the United States recently published findings from samples collected during a 2010 cruise. They estimated the amount of plastic in the world's oceans to be in the tens of thousands of tons, with 88% of the sea surface littered with debris. Most of it accumulates within the convergence zones of the earth's great migratory currents.

in

### DID YOU KNOW

Over 20 years ago, almost  
**29,000**  
rubber ducks famously sailed  
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ship near Hong Kong.

<sup>1</sup> European Commission, Environment DG, [http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index\\_en.htm](http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index_en.htm)



# A postcard *from* global megacities

in

DID YOU KNOW

The number of megacities  
is predicted to grow from

21 in 2013  
to  
33 by 2015.<sup>2</sup>

“Waste not, want not” is the mantra for megacities

According to the United Nations<sup>1</sup>, the world’s population will rise to 9 billion people by 2050, and two-thirds of those people will live in urban areas. In that same period, global gross domestic product is expected to quadruple<sup>1</sup>. Population growth, coupled with rising consumerism, will generate unprecedented levels of waste in urban areas, most acutely in the largest manifestations of this global urbanization trend: megacities.

Megacities are defined as metropolitan areas with a population in excess of 10 million people, and are already responsible for major environmental degradation that requires urgent solutions for effective waste management – both for today and for long-term sustainability.



in

DID YOU KNOW

## Megacities

are distinguished by their rapid growth, new forms of spatial population density, formal and informal poverty, crime and high levels of social fragmentation.

in

DID YOU KNOW

## 359 million

The population of the world's megacities is currently growing at a rate of 280,000 people per day, and an average of 359 million people will live in a megacity by 2015.<sup>3</sup>

in

DID YOU KNOW

## 36.2 million

By 2015, the world's largest megacity will be Tokyo with 36.2 million inhabitants.<sup>4</sup>

1 "World population projected to reach 9.6 billion by 2050 – UN report," UN News Center, 13 June 2013 [http://www.un.org/apps/news/story.asp?NewsID=45165#\\_U\\_1llvmSwWY](http://www.un.org/apps/news/story.asp?NewsID=45165#_U_1llvmSwWY)  
2 "The proliferation of megacities," Brennan E  
3 World Urbanization Prospects, United Nations  
4 World Urbanization Prospects, United Nations



THE METROPOLITAN AREA OF SÃO PAULO, BRAZIL HAS A POPULATION OF OVER 40 MILLION PEOPLE, WITH 11 MILLION PEOPLE IN THE CITY ALONE. OVER 14,000 TONS OF WASTE IS GENERATED EVERY DAY, CREATING A GROWING WASTE DISPOSAL CHALLENGE FOR THE CITY.

A postcard  
*from*  
São Paulo

Remarkably, this thriving megacity has recycled the garbage and waste from its residents and put it to good use: generating energy for the city's power grid.

Via landfills the size of 14 football fields, waste is dumped and condensed to cause the release of methane gas. The gas then flows through a generation plant where it is cooled to 13 degrees celsius, causing condensation that leaves 50 percent pure liquid methane gas, providing fuel for up to 24 generators to be burned for energy.

This recycle-to-energy project can generate enough power to service 400,000 people in one year.



FROM:

GLOBAL MEGACITY

SÃO PAULO

BRAZIL

SOUTH AMERICA



# CITIES ARE HERE TO STAY

Every year, 1.9 billion tons of municipal solid waste (MSW) is generated globally, of which 30 percent is not collected. According to research conducted by D-Waste, a global waste management services company, at least 3.5 billion people lack access to the most basic waste management facilities and this number could grow to about 5.6 billion people by 2050 (approximately 62 percent of the world's population).

For more insight on this challenge, IN talked to Antonis Mavropoulos, Chair of the International Solid Waste Association Scientific and Technical Committee (ISWA) and founder of D-Waste. He explained the phenomenon of megacities in terms of urbanization waves, driven by people's desire for a better life, wealth generation and economic development. He also noted that while urbanization will transform our world in "inconceivable ways" the change is not necessarily negative. ▶



**How will population expansion drive the growth of megacities globally? Where will we see most of this growth?**

We currently see more than 280,000 people moving from rural to urban areas daily and this is going to continue for the next 30 to 40 years. Most of this will take place across the developing world in Central and Sub-Saharan Africa, India and Southeast Asia.

**How would you sum up the key issues facing waste management in these global megacities?**

The problems are different in emerging megacities in developing countries and mature ones in developed countries. Some of the key issues in developing countries have to do with planning efforts for delivering the required infrastructure and implementing sound waste management. These issues normally come about because of the lack of financial resources and the required governance structures.

On the other hand, in developed countries, infrastructure is often becoming outdated and is hard to replace. Fortunately more and more recycling and waste management initiatives are coming through, but the maintenance of the performance levels of these programs is often the biggest challenge, as waste management gradually becomes more expensive due to aging infrastructure.

**What factors come into play in terms of disparities between waste collection globally?**

There is a lot of evidence that waste generation rates, waste collection coverage, sound disposal and recovery rates are linked with the levels of gross national income (GNI) per capita. The recent work demonstrated in Waste Atlas<sup>1</sup> outlines those linkages on a global scale. However, in the last few years, many researchers have suggested that waste generation rates are probably better related with

Human Development Index levels. I suppose it makes sense since waste generation and management is mostly related with the overall culture rather than simply the economy of a country.

**Our world will generate 4 billion tons of waste in 2050 – double the current level**

**In your report, you mention the critical relationship between informal recycling/collection and official collection. Can you expand further on how they work together and the impact on populations?**

We need to change our attitude and thinking about informal sector collectors or recyclers. Without ignoring the poor working conditions and the health and environmental problems involved in their activities, we need to put them in another conceptual



framework and understand the informal sector as a major opportunity for win-win solutions – building recycling rates, protecting and developing people's livelihoods, addressing the negative aspects of current informal recycling on health and the environment, and reducing costs to the city of managing its waste – if the informal sector can be included more successfully within an integrated and sustainable waste management system. For that purpose, we need both new tools and new ideas.

We need to campaign for the idea of sound waste management as a human right. I believe that this is the way forward for delivering change in waste management and recycling, especially in the developing world.

**“We need to campaign for the idea of sound waste management as a human right”**

#### How critical is the issue of waste management in megacities on a global, wider scale?

One thing that has not been studied in detail is the role of megacities as global risk areas. Due to their high interconnectivity with the rest of the world, megacities can be an epicenter of global risk for both natural and man-made hazards, including the health problems that might be created by inappropriate waste management systems. The importance of health problems that are related with waste management is becoming of global interest.

#### Looking at your new research, global recycling rates appear surprisingly low – what can we do to improve this recycling rates on a global scale?

I am sure that in reality they are higher since we have not included informal sector contributions and we know that in many cases the contribution of the informal sector is remarkably high.

However, speaking on a global scale, the only reason for a long-term increase of material recycling and recovery is the development of circular economy initiatives driven by appropriate policies and market initiatives. We can't close the loop of materials completely, but we can eliminate leakages and improve resource efficiency worldwide. This means we need effective collaboration between governments, markets and consumers. It's a game for three players and I am sure it will not be easy or quick, but we are heading in the right direction.

**“We need effective collaboration between governments, markets and consumers”**

To view the article in full, download the iPad App here.

1 Waste Atlas, D-Waste <http://www.atlas.d-waste.com/>



THIRTY YEARS AGO, CHINA WAS PRIMARILY KNOWN AS A FARMING SOCIETY WITH ITS POPULATION SPREAD OUT ACROSS A VAST COUNTRY OF MORE THAN 3.5 MILLION SQUARE MILES. TODAY, BOOMING MANUFACTURING AND INDUSTRIAL CENTERS ALONG WITH PRO-URBAN GOVERNMENT POLICIES HAVE BECOME A MAGNET FOR AN UNPRECEDENTED RURAL TO URBAN POPULATION MIGRATION TO SWELL COASTAL MUNICIPALITIES LIKE SHANGHAI, GUANGZHOU AND SHENYANG.

China now has over 200 million more urban dwellers than it did a decade ago, and that number is expected to rise another 800 million by 2030. Its land mass is similar to the United States but China's population of 1.3 billion quadruples America's. What was once considered a sign of rising middle class prosperity, China's flourishing urban centers are experiencing significant pressure regarding sustainable infrastructure, housing, energy, food supply and land use policies.

With rural workers flocking to the cities to seek employment, China's agricultural sector is facing a crisis. A decreasing rural workforce and limited arable land

(only 14 percent) has led to a renewed focus on policies and programs that will reverse the urban migration flow and get people farming again.

#### THE LONG-AWAITED REFORM

To tackle a decreasing rural workforce, the country aims to set up more large-scale family farms in order to further commercialize the agricultural sector. To do so, the government is attempting to incentivize people back to the countryside with better work opportunities and financial stability.

According to the National Development and Reform Commission (NDRC)<sup>1</sup> 2014 work report, "Problems hindering steady

# Back *to the* future

China's agricultural reforms and  
the reversal of urban migration



agricultural development are prominent. Resource and environmental constraints have tightened; infrastructure for irrigation and water conservancy is still weak...and agricultural production is not profitable.”

However, with construction of new roads, transport and telecoms infrastructure, and an increase in the number of rural supermarkets, improvements in the agricultural sector are within reach.

Further, the government is looking at a series of subsidies and investment opportunities for its rural infrastructure. New financial packages have been put

in place to boost China's rural growth in hopes that Chinese banking services will become more accessible to farms and rural companies. These reforms will help promote overall investment in agriculture and drive rural developments, further ensuring food security in the coming years.

Food security remains at the top of the list of world challenges due to booming urbanization and environmental changes across the globe. Reforms such as China's urban reversal program can only be viewed as a positive step towards a stable and sustainable future for the country's population.

in

DID YOU KNOW

1.3 billion

China's population quadruples America's, but the two nations have a similar land mass.<sup>2</sup>

1 Reuters, <http://uk.reuters.com/article/2014/03/05/china-parliament-commodities-idUKL3N0M20BM20140305>  
2 World Population Review



# New business HORIZON *for Africa*

Untapped raw materials are just the tip of the iceberg

DESPITE ONGOING ECONOMIC UNCERTAINTY AROUND THE GLOBE – THE AFRICAN ECONOMY CONTINUES TO SHOW VIGOROUS SIGNS OF STABILITY AND GROWTH. MANY COUNTRIES IN AFRICA ARE SOME OF THE FASTEST-GROWING ECONOMIES IN THE WORLD. SOME OF THIS CAN BE EXPLAINED BY EARLY INVESTMENT IN AFRICA'S PREVIOUSLY UNTAPPED DEPOSITS OF MINERALS, PLENTIFUL ENERGY RESOURCES AND VAST ACREAGE OF UNCULTIVATED LAND. HOWEVER, THE CONTINENT IS ECONOMICALLY ATTRACTIVE FOR MORE THAN ITS RAW MATERIALS.

Current economic trends suggest that, despite obvious risks, the opportunities far outweigh the negative. According to Ernst and Young's survey "Africa 2013: Getting down to business" 86 percent of global business leaders believe that the continent's attractiveness as an investment opportunity will only improve. Only Asia is viewed as more fertile.

A diverse list of international firms is taking note. Standard Chartered invested nearly \$900 million in Ghana in 2009, and Tullow Oil tagged 80 percent of its \$2 billion global budget last year to be for growth opportunities in Africa. Other foreign direct investment (FDI) into the continent is branching into coal, metals, communications, food and tobacco, automotive, and manufacturing.

Additionally, substantial investments are being made to enhance the transport and logistics supply chain, two areas which have historically been hurdles for business. Addressing these important infrastructure areas will help build confidence in the ability to sustain new and expanded business growth. Similarly, the last 10 years has seen immense improvements in political stability throughout the region. In fact, democratic elections have now become more of the norm across the continent, a stark difference to 25 years ago.

## AN EMERGING MIDDLE CLASS

According to IMF figures, Africa will have 122 million more young people entering the workforce by 2020<sup>1</sup>. Half of Africa's population is currently under the age of 20, which will translate into the world's largest workforce by 2035.

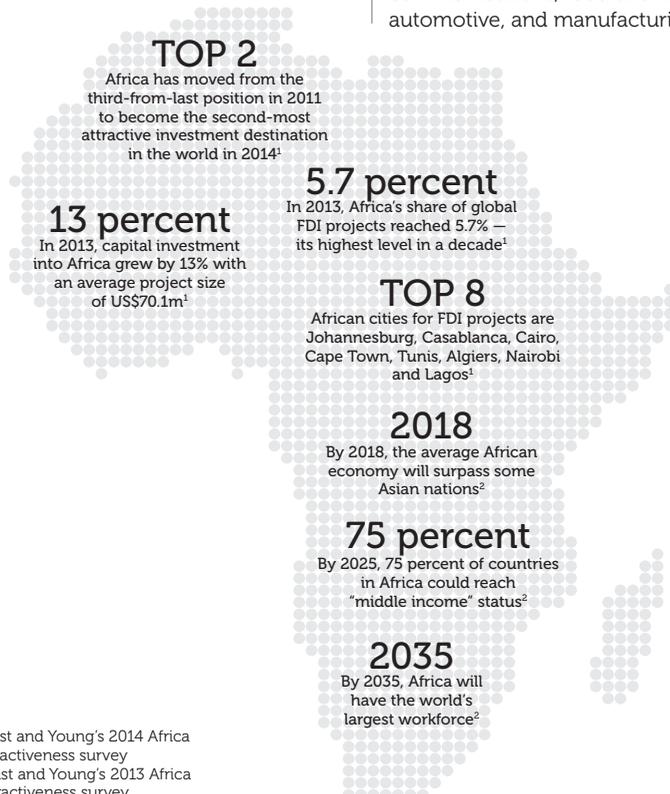
Demographic forecasting by Euromonitor also shows massive urban population growth with figures surpassing those in China and India by 200 million in 2050.<sup>1</sup>

There is a huge incentive for businesses looking to invest as African consumers are predicted to be spending \$1.4 trillion by 2020. Already equal in size to the middle class in India, consumers will be driving economic growth across a range of sectors, specifically in consumer goods markets.

## NOTHING VENTURED, NOTHING GAINED

As perceptions shift to a more positive outlook, Africa will become the go-to investment choice for a range of multinational companies looking for a stable and secure business environment.

With continued investment in infrastructure, skilled labor and supply chain logistics, Africa's true economic potential will be realized over the coming decades.



<sup>1</sup> Ernst and Young's 2014 Africa attractiveness survey

<sup>2</sup> Ernst and Young's 2013 Africa attractiveness survey

# The hopeful continent

AFTER BEING PREVIOUSLY LABELED "THE HOPELESS CONTINENT" BY THE PUBLICATION THE ECONOMIST, AFRICA HAS GROWN TO BECOME AN INDUSTRY HOTSPOT. TODAY THE REGION HAS BEEN APTLY TITLED "THE HOPEFUL CONTINENT". JEAN-LOUIS WARNHOLZ HAS BEEN WITNESS TO THIS TRANSFORMATION AS FOUNDING PRINCIPAL OF BLACKIVY, AN INVESTMENT COMPANY DOING BUSINESS IN SUB-SAHARAN AFRICA. WARNHOLZ RECOGNIZED AFRICA'S PROMISE EARLY AND SPOKE TO IN ABOUT THE OPPORTUNITIES FOR EXPANDED COMMERCE.

## How will Africa's emerging middle class drive the consumer market?

Africa has the fastest-growing middle class in the world. The growing incomes for young professionals and families alike have sharply increased demand for a wide variety of consumer goods, ranging from decent housing, smartphones and appliances to fashion and luxury items. McKinsey research found that these emerging consumer groups are brand loyal, creating advantages for brands that move early, invest in understanding local preferences and cement a strong presence in the market. The growing demand also triggered a wave of innovation to capture this market, including mobile banking and a rethinking of distribution channels, as well as product engineering.

## What are the biggest stimulants and threats for growth in Africa?

Growth in Sub-Saharan Africa is increasingly driven by consumer spending. The growing middle class is now increasingly urbanized, concentrating spending power in cities and making it easier for companies



to reach their consumers. Sub-Saharan Africa's untapped mineral resources, and vast uncultivated fertile lands will also continue to be a major driver. African nations, particularly in East and West Africa, are also renewing a focus on greater regional integration to break down barriers to trade among them. If these efforts create common, well-connected markets, it would further improve the ease of doing business in these regions and offer added expansion opportunities.

On the other hand, African economies are in need of continued foreign investment to accelerate and sustain the rapid economic growth we have witnessed over the past years. These uncertainties and the mixed economic growth outlook in the US, Europe and parts of Asia could also dampen demand for Africa's goods and services.

## What factors are coming into play in terms of the ever-growing market opportunities?

I anticipate companies will innovate and start producing a larger share of the final product in Sub-Saharan Africa, relying on a more reliable power supply, a competitive workforce and locally available resources and intermediate inputs.

Our company, for example, is developing state-of-the-art commercial and industrial zones in Ghana and Tanzania and many prospective tenants highlight the lack of modern packaging facilities as a key challenge to their productivity. A thriving packaging industry would not only help the bottom line of existing manufacturers and traders, it would also improve local supply chains and attract other investors in its wake.

## How have you seen the international investment market change over the last decade?

Ten years ago, Sub-Saharan Africa was off the map for mainstream investors. In 2009, when Paul Collier and I made the case for investing in Africa in the **Harvard Business Review**, the magazine hailed it as a breakthrough idea. Today, the success of many economies in Sub-Saharan Africa is much more widely understood and I anticipate this trend will continue. The financial and economic crisis at the end of the last decade also meant that investors and companies had to look globally for opportunities. The crisis has also challenged notions of risk, as purportedly risky assets in Sub-Saharan Africa have done spectacularly well while supposedly safe assets in established markets defaulted.





Interview with Robert van Otterdijk, team leader of the SAVE FOOD initiative of the Food and Agriculture Organization (FAO) of the United Nations



# FOOD WASTE

## The global food situation

STUDIES SHOW THAT THE AVERAGE PERSON WILL CONSUME ROUGHLY 1,000 CALORIES MORE THAN THE CURRENT RECOMMENDATION OF 2,000 CALORIES PER DAY<sup>1</sup>.

Despite what appears to be abundant amounts of food to meet rising consumption levels, there is, in reality, a massive food shortage. 842 million people around the world are undernourished, according to the UN World Food Program, but this is not just an issue of finite arable land for farming and food production. Food waste and loss are a significant cause of today's food shortage, accounting for a third of all food produced each year. "Waste" encapsulates food that is thrown out by consumers and other end users, while "loss" deals with food that is lost before ever making it out of the field or to market.

Robert van Otterdijk, agro-industry officer at the Food and Agriculture Organization of the United Nations (UN), says inefficiencies in production and the supply chain can be blamed for food loss. Meanwhile, food waste is a casualty of convenience as people in more developed nations find it easier to just throw out unwanted food.

**"Food waste has more to do with people's behavior and attitudes. It's not a problem with the supply,"** van Otterdijk said.

He also says that although crop yields are increasing across the globe, **"increasing production while maintaining the same level of loss is a crazy thing to do."**

Just 25 percent of the world's lost and wasted food production could feed every undernourished person on the planet<sup>2</sup>, so research certainly backs up van Otterdijk's claim. **"However, many people aren't aware of the problem, either because it does not affect them or they don't care,"** he says.

**"We have strong indications that people squandering food can have an impact on the global price of products,"** Van Otterdijk said. **"If people are more aware of this they might be more aware of the impact."**

Public awareness efforts are being made around the world to educate consumers on food waste as well as initiatives to improve supply chain networks and reduce food loss early on in the produce life cycle. The FAO has released case studies on food loss in Kenya and Cameroon, where preharvest-loss can be as much as 30 percent of a yield.

Van Otterdijk says that studies like these are important because, **"a multitude of research would provide significant trends and solutions."**

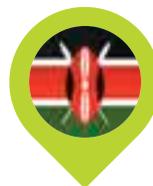
As the world's population will top 9.1 billion in 2050 with more hungry mouths to feed, it will be critical for food loss and waste to be addressed.

1. USDA, Center for Nutrition Policy and Promotion <http://www.cnpp.usda.gov/publications/dietaryguidelines/2010/policydoc/policydoc.pdf>

2. Food waste facts, Tristram Stuart <http://www.tristramstuart.co.uk/FoodWasteFacts.html>

3. FAO <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>

THE AMOUNT OF FOOD LOSS AND WASTE ACROSS THE GLOBE HAS BEEN WIDELY DOCUMENTED AND REPORTED, BUT TURNING DATA INTO PRACTICAL SOLUTIONS WITH LONG-LASTING RESULTS HAS BEEN AN ONGOING CHALLENGE FOR ACTIVISTS, ACADEMICS AND GOVERNMENTS. RESEARCHERS FROM THE FAO HAVE IDENTIFIED KEY AREAS IN KENYAN FOOD PRODUCTION THAT COULD HELP PROVIDE SOLUTIONS TO THE GLOBAL FOOD LOSS PROBLEM.



# IN KENYA

## FAO seeks solutions to Kenyan food losses

In Kenya, FAO set out to learn which causes of food loss are the most important and which solutions are viable, cost-effective, and impactful. Their "food supply chain" case study identified four crucial sub-sectors in Kenyan food production: bananas, milk, fish and maize.

Much of the losses in the banana industry are the result of traders failing to efficiently transport produce from farm to market. They often do so in woven plastic sacks lined with banana leaves, which are thrown around, pierced or bruised by the motorcycles and tightly packed vans used to transport bananas. Additional loss then occurs at urban center selling points, where displays are often extremely warm and the produce deteriorates.

For milk, Kenya shows promise and could perhaps reclaim their 1970s status as a net exporter of dairy products. They will need to address fluctuations in production however, as the nation's milk-producing livestock is rain-fed and, consequently,

production fluctuates from wet season to dry season.

Much of the losses are credited to inappropriate transport equipment. Dairy farmers in some areas are only allowed to transport milk in aluminum containers, which are often carried in the back of flat-bed trucks on long journeys. Other causes include inadequate and unhygienic handling equipment, poor initial product quality, and a lack of trained personnel in the supply chain.

Then there's Lake Victoria. Sitting near Kenya's southwest border, the lake is Kenya's largest fishery in a nation where freshwater fisheries account for about 96 percent of the country's fish production. Omena fish, dozens of which can fit on one hand, is the most popular catch in the area. However, their small size often allows them to fall through holes in the damaged nets used for sun-drying.

Sun-drying is where most fish loss occurs. The omena are dried on fishing nets placed directly on the beach.

Not only are the beaches highly unsanitary, but animals are able to walk by and eat, thereby contaminating the drying fish. The Victoria region is also prone to unexpected and sudden heavy rain during the wet season. These storms can wash all the fish back into the lake and cost a trader an entire catch.

Many of these problems can be solved by different packaging and storage options. Low-cost drying racks could elevate the fish out of the reach of animals as well as keep them more secure during storms.

The fourth key area FAO examined was maize production. A bit more complicated than the other three study areas, maize losses come from multiple sections of the production line.

Farmers are prone to a variety of mistakes that could be easily fixed with proper training, including when to harvest, how to package and how to store the maize. Meanwhile, traders' losses largely come from poor packaging (holes in bags) and unreliable transportation.

The point of the FAO's research was to identify exactly what problems plague Kenyan food production and what sort of solutions might be feasible.

Among all of the possible improvements to be made, packaging is a universal theme. This illustrates the importance of the industry in the fight against food loss.



# In numbers: The global food scandal

ALL STATISTICS ARE FULLY REFERENCED IN WASTE: UNCOVERING THE GLOBAL FOOD SCANDAL BY TRISTRAM STUART (PENGUIN 2009)



## Nine billion people

Nine billion people's domestic water needs could be satisfied if the water used to grow wasted food could be conserved (based on usage of 200 liters a day per person). Coincidentally, this is the estimated population of the planet by 2050.



## Maximum of 100 percent

We could offset a theoretical maximum of 100 percent greenhouse gas emissions from fossil fuel combustion if we reforested land currently used to grow overproduced food.



## Less than 25 percent

Less than 25 percent of the food wasted in the US, UK and Europe combined would be able to feed the approximately one billion people who are hungry across the world – helping lift them out of malnourishment.



## Between 20-40 percent

Between 20 percent and 40 percent of all fruit and vegetables produced in the UK are rejected before they even reach the consumer – simply because they do not meet retailers' cosmetic requirements.



## Up to 50 percent

Up to 50 percent of the entire food supply in the UK, US and Europe, and 75 percent of its nutritional value, is wasted between the farm and the fork.

# SAVE WITH JAMIE SHOP SMART COOK CLEVER WASTE LESS



The Naked Chef strikes again! This time Jamie Oliver is helping families shop economically and efficiently, and get more meals from food that would otherwise go to waste.

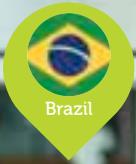
Throughout the book Oliver gives useful advice on how to shop smart and store food to maintain freshness longer, with a range of nutritionally balanced and healthy recipes to suit all tastes (including vegetables, chicken, fish, beef, pork and lamb).

What's the best thing about it? The unusual recipes for leftovers – if you don't know how to make chicken stuffing out of leftovers, this book is for you.

Save with Jamie covers four main topics, including: The Big Freeze (what to keep in the freezer), Chill Out (what to keep in the fridge), Store It (what to keep in the cupboard), and Shop Smart (tips and tricks for reducing the weekly food bill).

This book is an absolute must for cooks looking for smart, nutritious and budget-saving solutions without having to compromise on taste!





IN spoke to three chefs who have launched unique initiatives to tackle the food waste issue in their local communities – from South America to Australia.

# The *global* kitchen

Chefs all around the world are becoming increasingly active in the fight to reduce food waste in restaurant establishments, corporate cafeterias, and even their own kitchens.

To help caterers and chefs in their efforts to combat food waste, the mega-consumer goods company Unilever, through their Food Solutions business unit for the UK and Ireland, recently launched an industry-first app called "Wise Up on Waste" that enables cooks to track daily waste, breaking it down into details such as volume, type of waste, source of the waste and meal of the day.

Tracking this data can allow chefs to view week-by-week comparisons of potential cost savings, as each ton of food waste costs a business \$3,034 a week on average. It's no surprise the industry is trying to cut back!

IN spoke to three chefs who have launched unique initiatives to tackle this issue in their local communities – from South America to Australia.

in

#### DID YOU KNOW

Between 2011 and 2013,  
**842 million**  
people suffered from  
chronic hunger.<sup>1</sup>



# The *global* kitchen



## Maggie Beer

FOUNDED THE MAGGIE BEER FOUNDATION IN AUSTRALIA TO PROMOTE THE PLEASURE AND HEALTH BENEFITS OF GOOD FOOD FOR ALL. WORKING ON MANY LEVELS, BEER ADVOCATES A COOKING PHILOSOPHY OF "THINK LOCAL AND THINK SEASONAL" TO ENCOURAGE QUALITY, HEALTHY EATING EVERY DAY.

**Your cooking philosophy revolves around the phrase "Think local and think seasonal". Why is this so crucial in terms of securing food security?**

If we don't protect our Australian farmers by buying Australian then they can't remain sustainable. Farmers are businesses that are seeking profitability just like anyone else and they don't have a level playing field with cheap imported food.

**What three changes could individuals make to their cooking/eating purchasing habits that would have a dramatic impact on the current level of food waste?**

Rather than choosing a recipe and then heading off to shop for the listed ingredients, approach it the other way around. Go shopping and let yourself be attracted to whatever is in season, and then find a way to cook the produce that most stands out to you. That way your food will be at the peak of its season, at its most affordable and, most of all, full of flavor. These things all come together to ensure you are buying food that is far less likely to have been shipped half way round the world, saving on "food miles".

**Has there been a change over the past decades in terms of levels of food waste? What can this be attributed to?**

I think this all depends on how precious food is. For those connected to their food on a far more authentic level, whether through farmer's markets or growing their own produce at home, there is very little waste because the true value goes well beyond what you have paid for something. You are investing in the very nature of what sustains you, but the further away any of us get from that connection, the easier it is to forget it.

**How can restaurants best ensure that they are feeding people in the most sustainable way possible?**

This is a very difficult position for restaurants because more often than not, the more sustainable the practice, the more time it takes, and anyone who has ever had anything to do with the restaurant industry knows how time poor they are behind the scenes. Having said that, it is not impossible to add steps into the equation like purchasing food and choosing producers which results in more sustainable results on the plate. I'm also an advocate for, and

completely applaud, what seems to have taken hold as a more recent trend, with restaurants actually creating their own produce gardens to draw from but never think that this is an economic benefit – it's a flavor benefit.

**It is generally stated that to eat healthily means to spend a lot of money on food; how can households ensure they are still able to eat a healthy variety of food in an economical way?**

The most obvious answer to me is to start your own vegetable garden. In my mind there is nothing that can surpass home-grown fruit and veggies for flavor, and there is such a joy in being able to have a direct connection with the food we eat, not to mention the obvious nutritional benefits of eating just-picked produce.

Having a vegetable garden within 20 meters of my kitchen door certainly leaves a very soft footprint. It also allows the opportunity to recycle food scraps to our chooks (chickens) and worm farm in order to use their manure in our compost – a mini ecosystem without any need for a car being driven or plastic bags being filled. I love wandering out into the orchard in the early morning to choose fruit for breakfast or into the kitchen garden to pick asparagus or artichokes that will go into the pot within minutes.



## Tom Hunt

KNOWN AS THE "ECO CHEF", HUNT CREATED THE "FORGOTTEN FEAST" AND IS WORKING ON PROJECTS THROUGHOUT THE UK TO REVITALIZE THE COUNTRY'S COOKING HERITAGE AND REDUCE FOOD WASTE. HE IS AN OFFICIAL CHEF OF "FEEDING THE 5000", A GLOBAL EVENT THAT AIMS TO HIGHLIGHT FOOD WASTE BY FEEDING MORE THAN 5,000 PEOPLE WITH DELICIOUS FOOD THAT WOULD OTHERWISE HAVE BEEN WASTED.

**As an acclaimed eco-chef, why have you chosen to work on your current projects and how did you first begin your work in this area?**

I've always been conscious of my actions as a restaurateur and consumer...keen to recycle and buy organic, but I treated ecological issues as a secondary concern...putting profit and my wallet before planet. In 2012, however, I had a fundamental shift in the way I approached business. I was invited by Tristram Stuart, a food waste expert and author of **Waste, a global food scandal**, to cater an event for 200 people on Southwark Bridge in central London, using nothing but food that would otherwise have been wasted.

I was shocked and stunned to discover not only the quantity of food that was being thrown away globally (30-50 percent or 1.2 billion to 2 billion tons of all food produced never reaches our

stomachs according to the Institution of Mechanical Engineers), but the quality of the food. In preparation for the event we were being offered prime organic vegetables that might have a blemish or scratch, but would otherwise be perfectly fine. Boxes of misshapen carrots, peppers with short sell-by dates and dried foods with damaged packaging.

As a result of my experience on this event I realized that food waste was a global catastrophe that could be tackled simply, on the ground, by us all. It's incredibly empowering to learn that you can affect change by making simple choices about your food.

**How did that initial event translate into what you're doing today?**

The Southwark event was such a success that I decided to start a social enterprise called the Forgotten Feast, a roaming restaurant that creates pop up events that focus on different issues within the food industry.

Poco, my restaurant in the heart of Bristol, opened shortly after Forgotten Feast was launched. Opening the restaurant with my now indelible beliefs about sustainability, I decided to create a strong manifesto. I wanted to set ourselves apart from other restaurants, and provide clear information to the customer about our ethical commitments. We joined the Sustainable Restaurant Association and were quickly awarded three stars of sustainability by Raymond Blanc, a high accolade within the restaurant world. We also won **Best Ethical Restaurant** from **the Observer** in 2013.

**What are your next steps and plans for the future?**

More recently I have been working on my first recipe book, **The Natural Cook**. The book encompasses my ideals and the knowledge that I have gathered as

a chef, restaurateur and home cook into a seasonal recipe book full of tips that reduce waste and make the very most out of all of our ingredients.

I call my style of cooking "root to fruit"... valuing the whole vegetable and wasting nothing. A homage to the nose to tail ethos that encourages meat eaters to eat the whole animal or as some say: "everything but the oink!"

My next step is to open a "root to fruit" restaurant in London, which I want to be a center of sustainability and to educate diners through a celebration of good food.

**As part of the Feeding the 5000 movement how widespread is the problem of food waste globally?**

The food waste scandal is ultimately a global issue. The food on our supermarket shelves was produced in all four corners of the world. Food is wasted at every level of the food chain, from field to fork, for reasons ranging from poor refrigeration and storage in developing countries to a glut of produce in a home fridge. In a sense, the green beans that are "a little past their prime" that you or I throw in the bin here could have been eaten where they were produced.

Essentially we are producing enough food to feed the world, it is just distributed and controlled unfairly, which keeps prices high. Meanwhile 40-50 percent of all food produced is being wasted. Tristram Stuart says, "The bread and other cereal products thrown away in UK households alone would have been enough to lift 30 million of the world's hungry people out of malnourishment."

It's really quite astounding to find out where the produce is sourced for the Feeding the 5000 events. We've been given whole fields of cauliflowers, saved from being ploughed back into the earth, simply because they aren't ►



# The *global* kitchen

## Tom Hunt

CONTINUED

perfectly round; several tons of rice donated because of mislabeled packaging; and tons of tomatoes and courgettes rejected for cosmetic reasons by a food distributor in Kent.

### How can restaurants minimize their food waste (tips and tricks)?

You must first make it a priority! It's actually very easy to reduce your food waste when you put your mind to it.

At Poco we split all of our recycling and compost and "weigh the waste" every day. When I introduced this idea to the restaurant, I was worried that it would become a chore and increase an already heavy workload. In actual fact it became the opposite. The staff looks forward to it. It forms a sense of camaraderie and helps encourage everyone to be thrifter.

Most chefs keep good track of their stock and care of their fridges, but food inevitably goes to waste anyway. We keep a record of what's wasted, why, and discuss how it can be saved next time in our monthly meetings. The most important thing after food has been wasted is that it is treated properly. If food is thrown into landfill it continues an already destructive food cycle. Compost or send your food waste to anaerobic digestion so that it can be used to grow more food or be converted into energy.

### How can households minimize food waste (tips and tricks)? What three changes could we all make to our cooking/eating/purchasing habits?

**BE CREATIVE!** Dig around in the fridge or cupboards and find what needs using in order to put a meal together that uses those ingredients. Keep it simple and you can't go wrong.

**SHOP WISELY.** Before you go shopping "stock take" and make a list of what you have already, so that you can build it into your weekly meals. Don't be fooled into bulk buys that you will never eat. Buy vegetables and meat loose from the market in smaller quantities. Root vegetables, and hardy skinned veggies like cabbages, squash, onions and garlic, keep for longer so you can buy in bulk but be more wary and buy smaller quantities of herbs, soft fruits, salad and leafy greens.

**PORTION SIZES.** Cook just enough and if you cook too much, keep it for lunch the next day or freeze portions to use later.

These are a few tips from my book **The Natural Cook** about how to reduce food waste at home, but there are many more ideas throughout the book.

## Sweetcorn fritters

These are remarkably good, a great snack or appetizer. I like mine with chilli sauce... but it does mask the sweetness of the corn. Serves 4.

### INGREDIENTS

- 2 large sweetcorn cobs
- 150g spelt or wholemeal flour
- 1 egg, lightly beaten
- 1/2 tsp baking powder
- 4 spring onions, finely chopped
- 6 sprigs of coriander, stalks finely chopped, leaves roughly chopped
- flavorless vegetable oil, to shallow-fry
- chilli sauce or sour cream, to serve

### INSTRUCTIONS

- Bring a large saucepan of salted water to a rolling boil. Remove the husks and silk from the corn, add to the pan and cover. Boil for 10-12 minutes and then drain.
- Cut the kernels from the sweetcorn cobs. Mix the flour, egg and baking powder, gradually adding 100ml water to make a thick batter, then season well with salt and pepper. Add the spring onions, coriander and sweetcorn to the batter and mix.
- Heat a heavy-based frying pan or skillet over a medium heat with a glug of the oil. Fry spoonfuls of the fritters, flattening them a little with the back of the spoon. When they are golden brown, flip them over and fry on the other side. Keep warm while you cook the rest. Serve with chilli sauce or sour cream.
- Storage** The fritters will keep for three days in a sealed container in the fridge. Reheat in an oven preheated to 180C/350F/gas mark 4 for 12 minutes, or until hot right through. The boiled sweetcorn is best eaten immediately, but can be cut from the cob and reheated in a saucepan with a little butter.





## Favela Organica

**REGINA TCHELLY DE ARAUJO**  
A BRAZILIAN CHEF MAKING WAVES WITH HER INITIATIVE "FAVELA ORGANICA." THE PROGRAM CULTIVATES SMALL ORGANIC FOOD GARDENS WITHIN A NUMBER OF SLUMS (OR "FAVELAS" AS THEY'RE KNOWN IN BRAZIL) IN RIO DE JANEIRO. BESIDES PRODUCING HEALTHY FOOD FOR COMMUNITIES, FAVELA ORGANICA ALSO PROMOTES A STYLE OF COOKING THAT USES INGREDIENTS IN THEIR ENTIRETY IN AN EFFORT TO INFLUENCE EATING HABITS.

### Can you briefly describe the initiative and why you initially launched the project?

I was raised in a countryside town in the northeast region of Brazil where we were accustomed to using food entirely with no waste at all, as well as planting and composting our own food. When I arrived in Rio 12 years ago, I saw a lot of food being wasted in the area I lived. I've always used creativity to create meals with peels, seeds and stalks and I started asking the sellers at the street markets to separate the parts they would normally throw away and give them to me. For a long time, I had thought about teaching people how to use these parts, so they could learn how to respect the food that nature provided us. So, on September 24th

2011, with only R\$140 (equivalent to approx. US\$60), I delivered my first Favela Organica workshop for mothers in the community and I haven't stopped since.

### Why do you think the problem of food waste is so widespread in our society today, despite contradictions of starvation and obesity?

I believe that the government, at least here in Brazil, is not concerned about motivating people to plant, cook, value the small producer and respect the food we eat. There is a lack of information on how we can use food completely with no waste. Governments and companies are more concerned with motivating people to consume sodas, fast food and candies than stimulating the conscious consumption of natural products. I've never seen a commercial motivating people to eat an apple or an orange, but I've seen plenty for industrialized soy juices flavored with apple or orange. People in general don't know where their food comes from and how it can be managed. Food waste begins in production, and continues as it goes to market and arrives in our homes. At this point, waste occurs because of overbuying and not consuming everything. The problem of food waste is therefore widespread mainly because of the lack of information, motivation to respect food and know-how

### How is Brazil leading the pack in terms of building awareness of this global problem?

Actually, it isn't. Here in Brazil there are some programs to raise awareness of food waste, but there is still a long way to go. Favela Organica is somehow managing to call people's attention towards food waste, focusing on the whole food cycle and motivating new chefs, housewives and schools. We're still crawling towards our goal; it's a long process. But thankfully, even with baby steps, we are reaching an international dimension!

### How are you working to change the mind-set of individuals towards food waste? How are you inspiring people to plan their consumption?

First of all, I love myself. I believe that helps when it comes to motivating people to do the same thing as you, especially when you're asking them to learn how to love and respect food. Favela Organica offers workshops that look at conscious consumption and the food cycle, teaching people how to plan and reflect on food consumption. People have to understand where our food comes from, to value small producers since they can provide us healthy and organic food to our home, and to use seeds to give back to the earth what it gives us.

### What three changes could we all make to our cooking/eating/purchasing habits?

We have to resurrect the pleasure of cooking and eating with love, respect and pleasure. We also have to reflect on the food we take home, where it comes from, where it goes to and if we really need everything that we buy. Finally, allow ourselves to try new flavors by exploring our creativity and imagination, knowing we can cook a feast with only two ingredients and by extinguishing our "prejudice" towards parts of food such as seeds, peels and stacks.





# THE FBI OF FOOD



Mike  
Bolstridge  
Tetra Pak  
Director of  
Product Safety  
and Quality

Mike Bolstridge likes to compare his job to that of a detective. If a problem arises in food manufacturing, he and his team carefully analyze clues to discover the root cause of the problem and solve the mystery. As Tetra Pak U.S. Director of Product Safety and Quality, Mike is far from the FBI, but his expertise on quality assurance in food manufacturing is widely known and he is a frequent speaker on the lecture circuit, training food production engineers and scientists.



**What is a food scientist?**

"Food scientist" is a broad term, as we do lots of things. Different food scientists have different roles depending on their specialty. For instance, you have food microbiologists like me that develop food with organisms that are beneficial to health, or that look at food safety and spoilage. Then you have food engineering, which deals with the food manufacturers and process including how the different pieces of equipment are used for different products. The role of a food scientist is essentially to feed the world's inhabitants, which is becoming increasingly more important with the rising population.

**As a food scientist at a packaging company, what is your day like?**

Day to day, the job consists of assisting food manufacturers in quality assurance. We change operational routines, offer advice on maintenance and training to operational staff. Continuous improvement is the proactive side of my job. But there is also a reactive side. It comes when a facility has a problem with operations and it has resulted in spoilage and waste. We then become detectives solving a crime. We collect information around a problem, make a diagnosis and find a solution to rectify the cause. The results are amazing because if you improve quality, you improve safety and profitability, all the while minimizing waste and spoilage problems.

**How does your role add value and contribute to the safety of food products globally?**

There are two areas. One of them is hygiene, and the second one is cleaning. It is difficult to understand the difference, but in essence you have to have clean equipment before sanitizing it or else it won't matter. Facilities around the world grow and install more equipment, and the cleaning part is often neglected. That's where we come in.

**You have worked all over the world. What are some of the differences you have noticed?**

I was born and raised in South Africa, I lived in Sweden and I now work in the US. However, I don't think that cultural differences impact manufacturing processes. What drives good practices is the attitude of management. If management is not engaged you find that controls become relaxed. We recently partnered with a customer in Europe driving good manufacturing practices and focusing on quality. They found that a competent worker could produce more than 15,000 liters of product more per shift than a worker that was of lower competence. It is important to train and retrain. Operations repeat things again and again so people get used to bad habits. Retraining is essential to refocus workers.

**Where do you see the growth points for the food science industry?**

The industry is becoming more complex. There are new products developed virtually on a daily basis. In Texas, we have a product development center where we help customers with their new innovations and we see more and more demand from the health industry with high protein drinks for instance. The equipment that makes one product can't always be cleaned with the same products used to clean another. This is something we didn't see 30 years ago.

**What gets you up in the morning? What drives you to go to work?**

I'm passionate! No two days at work are the same; there is no routine because all the clients and all the problems are different. Seeing quality improve is a reward, and it's one you can realize just by walking into a supermarket.



# FARM-TO-TABLE

AS MODERN FOOD PRODUCTION FOR TODAY'S SHOPPERS BECOMES INCREASINGLY MORE FOCUSED ON THE DELIVERY OF ATTRACTIVE, MARKETABLE PRODUCTS THAT BUILD BRAND LOYALTY, MANY CONSUMERS HAVE LITTLE TO NO IDEA WHERE THEIR FOOD ACTUALLY COMES FROM; RELYING INSTEAD ON PROMOTIONAL ADVERTISING OR PACKAGING LABELS FOR INFORMATION.

An alternative to this approach is the farm-to-table concept which seeks to establish a more transparent link between consumers and producers. At its core, the concept supports locally grown food and aims to reduce the amount of food lost during the production process, while encouraging broader awareness of the quality and origin of the food we eat.

## THE WORLD HAS GONE "BANANAS"

Our food, especially fruit and vegetables, will undergo amazing journeys along the food supply chain before it reaches our table. Take the banana for instance. It is one of the most popular tropical fruits, with approximately 105 million tons produced each year across 150 countries<sup>1</sup>. However, because bananas can only be grown in tropical or subtropical climates, the banana often has to be transported great distances in order to reach tables around the world.

IN follows the farm-to-table journey of Kenyan bananas<sup>2</sup>; exploring each step they take before becoming an afternoon snack or a banana split in a far-flung corner of the globe.

### 1 Growers/Harvesters – Bananas

are grown on herbs and not trees as widely assumed. Herbs are defined as a seed-producing annual, biennial or perennial plant that does not develop persistent woody tissue but dies down at the end of a growing season<sup>3</sup>. Banana herbs are typically grown in huge plantations, can reach up to 15 meters high<sup>4</sup> and take nine months to produce fruit. Once green banana bunches have been harvested, the host herbs die.

### 2 Transportation –

Banana bunches are then packed into woven plastic sacks lined with banana leaves and transported from the plantation via a pickup or open air truck, motorbike or ox cart, depending on their next destination. At this point, the fruit is vulnerable to damage by being thrown around, sat on, pierced, bruised or infected by insects.

### 3a Local Sale –

If the bananas are to be consumed locally, they will be transported to either a local "hawker" or market. Here they will be managed by local sellers, who keep them in sheds with avocados to speed up the ripening process and prepare them for local purchase.

### 3b Exportation –

If the bananas are destined for markets such as Europe or the United States, they are packed in huge refrigerated freight containers. At this point, only perfectly formed bananas are packed for export – it is estimated that 30-40 percent of all bananas grown are rejected at this stage because of aesthetic issues. Europe typically imports bananas grown in African, Pacific and Caribbean countries, while the United States largely imports them from Latin America.



**4 Arrival** – Upon reaching their overseas market, the bananas are delivered to a distribution and ripening center where bunches are separated and the fruit is cleaned, ripened and packaged.

**5 Supermarkets** – The bananas are then shipped to supermarkets, where they are sold to consumers. The most post-harvest loss of bananas occurs at selling points where the fruit cannot be kept at a reasonable temperature to maintain its shelf life. Without adequate preservation the fruit quickly over-ripens and deteriorates.

**6 Consumption** – This stage of the journey is defined as the point at which the bananas have been purchased by consumers, either through supermarkets or at a fresh market. To put consumption rates into some context, each person in the UK eats an average of 10 kilograms of bananas each year, or approximately 100 bananas!<sup>5</sup>

**PROTECTIVE LAYERS**

The Food and Agricultural Organization (FAO) defines food loss as the amount of edible food mass lost throughout the supply chain. The solution, it says, should not be more expensive than the food loss itself. It should also not place a higher burden on the environment and greenhouse gas emissions, and the food should be made available to people that need it most in a socially and culturally acceptable manner.

In its report, titled **Food Loss Assessments: Causes and Solutions (2014)**, the FAO suggests several techniques for preventing the loss of bananas during their journey from farm-to-table; including the use of more fiberboard in farm packaging; the use of boxes in transportation; improved shade or shed structures at outside retail points; and the use of umbrellas or coolers if sold in supermarkets or by “hawkers”.



**Banana split!**

Who gets the money from bananas in the EU?<sup>6</sup>

- 4 percent Workers
- 20 percent Growers
- 23 percent Transportation suppliers
- 12 percent EU tariffs
- 12 percent Ripeners/distributors
- 29 percent Retailers

- 1 BananaLink <http://www.bananalink.org.uk/all-about-bananas>
- 2 FAO [http://www.fao.org/fileadmin/user\\_upload/save-food/PDF/Kenya\\_Food\\_Loss\\_Studies.pdf](http://www.fao.org/fileadmin/user_upload/save-food/PDF/Kenya_Food_Loss_Studies.pdf)
- 3 Merriam Webster <http://www.merriam-webster.com/dictionary/herb>
- 4 BananaLink <http://www.bananalink.org.uk/all-about-bananas>
- 5 BananaLink <http://www.bananalink.org.uk/all-about-bananas>
- 6 A snapshot of the banana trade: who gets what?, European Parliament



60% of consumers think it is very important that a retailer's packaging is sustainable

\$1.45 billion in growth is projected for the electronic smart-packaging sector over the next 10 years

71% of consumers expect higher quality packaging when ordering expensive products online

90% of consumers use their phones when shopping for groceries<sup>2</sup>

Groceries online

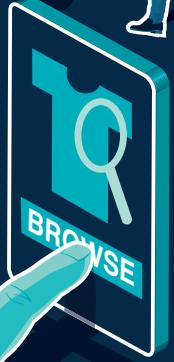
Half of all smartphone shoppers use the brand website to do in-store research.

Half of all e-commerce sales will be mobile by 2018<sup>5</sup>



57% ACCOUNT STORE ORDER

Just 57% of packaged food brands have mobile-optimized websites<sup>3</sup>



Half of all customers expect online orders to arrive in premium packaging if that same retailer provides branded packaging in store

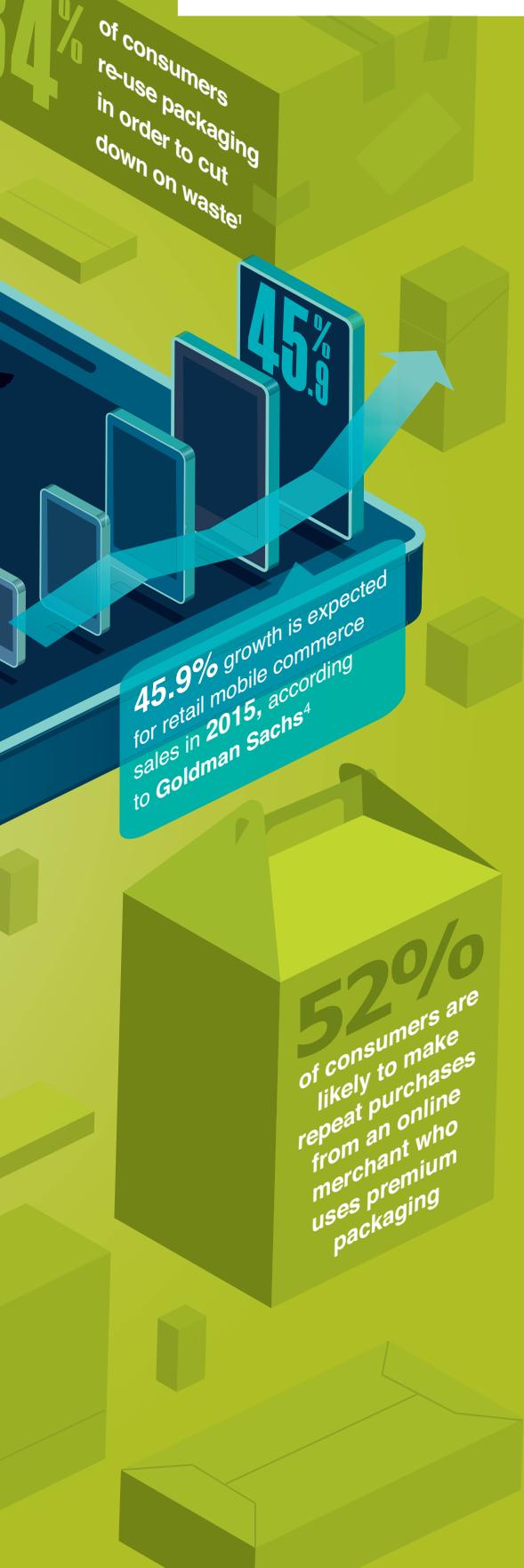
62% of baby boomers are more inclined to purchase from a website that offers a gift-wrapping option

1. 2013 eCommerce Packaging Survey <http://www.dotcomdist.com/packaging-survey-us-consumer-views-on-e-commerce-packaging/>  
2. Mobile Commerce Daily <http://www.mobilecommercedaily.com/packaged-food-brands-missing-opportunity-on-mobile-to-drive-sales-report>  
3. Mobile Commerce Insider <http://www.mobilecommerceinsider.com/news/2014/04/08/7766551.htm>  
4. internetRETAILER <http://www.internetretailer.com/2014/03/10/mobile-commerce-will-be-nearly-half-e-commerce-2018>  
5. The Economic Times [http://articles.economictimes.indiatimes.com/2014-06-09/news/50448111\\_1\\_flipkart-myntra-e-commerce](http://articles.economictimes.indiatimes.com/2014-06-09/news/50448111_1_flipkart-myntra-e-commerce)

# MOBILE

# COMMERCE

## Packaging the internet



in

DID YOU KNOW

6 in 10

people still use packaging to identify what they're buying on the web.

AS ANYONE WHO HAS ORDERED AN ITEM OFF THE INTERNET KNOWS... ONLINE SALES OF CONSUMER GOODS IS BOOMING AND BECOMING INCREASINGLY MORE SOPHISTICATED. IN 2013, GLOBAL ONLINE SALES AT THE WORLD'S LARGEST RETAILER, WALMART, AND LARGEST ONLINE RETAILER, AMAZON, GREW BY 30 PERCENT AND 20 PERCENT RESPECTIVELY IN THE US.

This growth is reflective of a general trend across the globe. In Europe, 15 percent of all retail sales will be online by 2018. In the UK, nearly half of all payments in 2013 were done electronically, and the volume of cash purchases has been on the decline for over a decade. Meanwhile, Russia saw e-commerce jump 30 percent from 2012-2013.

Even within the e-commerce category is the amazing growth of mobile sales (purchases made on mobile phones and tablets). It's estimated that in the last four years, "m-commerce" alone has grown an astonishing 3,400 percent. ▶



## Packaging the internet *continued*

# Report on...

But e-tailing, as online retailing is called, raises major questions for businesses accustomed to designing packaging for brick-and-mortar establishments.

The simple process of purchasing online means packaging needs will change. More items need to be shipped to individual consumers rather than in bulk cases to stores. This presents opportunities for growth in packaging and has already begun to manifest itself in places like India. The world's second largest nation is experiencing 34 percent annual growth in e-commerce and the sector was responsible for \$13 billion of sales in 2013.

Take the case of Dynaflex, India's largest e-commerce packaging firm. Before the recent online sales boom, the company saw growth rates around 20 percent, and now?

### **Double it.**

Almost one-tenth of box manufacturers' annual business is expected to come from e-commerce in the next five years, meaning any box or carton manufacturer looking to grow would be naïve to ignore the opportunities of web-based sales. Further, packaging can play a vital role in brand exposure as 3 in 10 people learn about a brand by seeing another individual carrying a packaged product.

That's why online-only retailer Yoox, based in Italy, takes its packing so seriously. The company sells the products of some of the world's most well-known designers and requires elegance all the way down the product line. Its warehouse employees, for instance, are trained in ribbon tying to ensure consistency with the Yoox package one receives in the mail and the box one might have otherwise carried out of the store.

Packaging for e-commerce is also providing additional areas for sustainable development, which e-tailers large and small are embracing. Yoox has adopted what it calls "Eco-commerce" and packages all of its product orders in fully recyclable eco-boxes.



Then there's online behemoth Amazon, who – in an effort to make packaging less cumbersome and difficult to open – started its Frustration Free Packaging program in 2008. The company emphasizes recycled material, easy-to-open boxes, and aims to reduce overall material use by working with businesses to ensure purchases are sent without excess material.

Packaging is no longer just the box a product comes in. Visual attributes are extremely important and brand recognition relies heavily on packaging. Any employee, manager or executive not thinking about this should do so.

Despite smartphones, tablets and interactive product presentations, 60 percent of people still use packaging to identify what they're buying on the web. That's why it's so important that companies like Yoox tie the ribbon just right.



# Cyber Monday



During the 2013 Christmas buying season, online sales grew 20 percent thanks to rising e-commerce activity, a peak never seen before. But it's not just the Christmas festivities that are putting us in a spending mood.

What started as a simple and targeted holiday internet retail offer in the United States has now grown to be one of the largest online events of the year; boosting sales for thousands of retailers.

Cyber Monday – a nickname for the Monday following Thanksgiving – has become a global phenomenon and a catalyst for consumers and retailers alike to embrace the effortless “click”.

Cyber Monday unofficially began in 2006 as a complement to the traditional holiday retail experience. In an effort to address consumers' demand for quick and easy shopping, internet sites became increasingly more sophisticated; attracting customers with price advantages, free shipping and an effortless purchasing experience.

Since 2006, internet commerce has continued to grow exponentially year round, but especially on Cyber Monday. It is estimated that in the US alone, Cyber Monday in 2013 generated \$2.29 billion, up 15.7 percent from 2012 records.

Statistics show that between 2013 and 2014 consumers visited websites 23 percent more and placed 19 percent more orders during Cyber Monday. Similarly, mobile spending – purchases made on a smartphones or tablets, now coined “mobile commerce” or “m-commerce” – went up by an astounding 55 percent. It is no longer a question of “will customers visit my website or app”, it's a question of “how many times” and “how do I convert visits into purchases”.

#### ONLINE SHOPPING SECURITY

Consumers are becoming more and more concerned with the security of personal information online, as recently evidenced by the number of data breaches making headlines in the last year. Retailers have a responsibility to keep up with the latest technology platforms, both in-store and web-based, to ensure customers enjoy a safe and secure shopping experience.

Every year, sales from Cyber Monday have increased at or above 15 percent. Undoubtedly, e-commerce and m-commerce are a popular option to traditional retail shopping and will continue to grow, with sales likely to increase in 2014. Coupled with faster, smarter technology and rising global accessibility to the internet, online commerce is now a “tradition” as much as the classic bricks-and-mortar store experience. What new trends are possible in the years to come?

#### 5 E-COMMERCE/M-COMMERCE TRENDS TO WATCH OUT FOR:

##### 1 PERSONALIZED MARKETING

With consumers becoming more comfortable with trusted online stores, we're likely to see more unique marketing efforts and ways of personalizing the experience.

##### 2 MOBILE OPTIMIZATION

With web-friendly and mobile-friendly boxes checked, we are likely to see even more work around sites that flourish on smartphones and tablets.

##### 3 MOBILE ADVERTISING

M-commerce is becoming the way to shop and mobile advertising the way to get consumers there.

##### 4 BETTER DELIVERY

More and more stores will look to adopt the next-day delivery approach for their consumers. Same-day delivery will soon be the norm.

##### 5 BRAND COMMUNITIES

As access to a brand or retailer has been physically reduced, brand owners will look to put a “face to the name”. One way of doing this will be through authored content on blogs or through social media igniting the customer service framework.



FLAKED  
ED WHEAT  
CHOCOLATE AND  
WHITE CHOCOLATE CO



## INGREDIENTS

Mixed Cereals (19%)  
Raisins (16%)  
Belgian Milk Chocolate (1

ucose Syrup  
Dark Chocolate

# A label for all

IN 1994, A SUPERMARKET IN MEXICO CITY WAS CLOSED FOR 72 HOURS FOLLOWING PUBLIC OUTRAGE OVER THE DISREGARD OF GOVERNMENT REGULATIONS THAT REQUIRED ALL PRODUCT LABELS TO BE TRANSLATED INTO SPANISH.

Consumer protection standards like these can, for the most part, be attributed to misleading advertising practices commonly seen in the '60s, with slogans like: "Give your throat a vacation...smoke a fresh cigarette." Or food labels that stated: "Butter is good. Butter is slippery. That's why we eat as much as possible to lubricate our arteries and veins."

Today the demand for greater transparency is also affecting the packaging industry with additional labeling requirements. Corinna Hawkes, Head of Policy and Public Affairs at the World Cancer Research Fund International, explains. "Labels were originally conceived to protect consumers from dishonest practices. But today, labels can motivate companies to reformulate their products."

However, food labels are not just nutritional. They can also include information about fair trade, whether foods were grown organically, or their carbon footprint. The European advocacy program, Labelling Matters, aims to include information about the method of production in meat and dairy products. The organization's Project.

Manager Ffinlo Costain says independent research shows three quarters of consumers support their efforts. "Consumers can be confused by existing labels, many of which imply natural outdoor conditions with a high welfare for animals, even when they have been reared intensively indoors," he explains. "Point of sale labeling is the best way to accurately inform consumers about the food they buy."

**But how much information do consumers want? And what is the best way to provide it?**

EUFIC, the European Food Information Council, found that only a quarter of British consumers look actively for information about nutrition in the buying process. Their research also shows that current labels don't always change behavioral patterns. While demand for information is high, the desired impact won't work unless labeling is made more attractive and efficient. "We can never expect labeling to work on its own," claims Hawkes. Current labels are effective for the consumers that are already aware of health concerns, but to reach other stakeholders, "labeling needs to be accompanied with things like price incentives or education programs."

According to Hawkes, governments can help with standardization. "There needs to be consistency between the labels," she says. Finding the right label – albeit informative and appealing – requires a high degree of cooperation between legislators, companies, consumers and, ultimately, the designers who bring it all together.

Laura Brunow Miner is a San Francisco-based designer that worked as a judge

in the Rethink the Food Label project of UC Berkeley Graduate School of Journalism's News21 program and Good Magazine. "It is hard for designers to cram all the required information into the allotted space," she says. "But anytime we can apply new understanding about education, nutrition or information design to an old problem, I think we can make real progress."

Nutrition facts tables are the most common and widespread tools among designers, while there is a trend in Western countries for graphical labeling. The UK is a pioneer in this space, having implemented a traffic light system that uses red, amber or green color coding to provide information on specific nutrients at a glance. Other regions like Australia have introduced systems including star ratings.

Renee Walker won Berkeley's contest with a design that used a color coded system with simple iconography. "I do not see this label as an answer to the current problem with how we choose our food – there are too many economic and cultural problems at play here – but I do see this collaboration as an opportunity for us to think about how designers might begin to partner with other disciplines so they may begin to bring clarity and attention where it is needed most," she said.

A partnership between design and technology may offer more possibilities to satisfy all types of information demands. Since the industry is moving more into electronic labels – flat, printable circuits and sensors – customers are now privy to a way of monitoring all the necessary information and doing it in an entertaining manner while providing companies with an easy means of collecting customer insights. To benefit both the producer and the consumer, the future of packaging culture could be the e-label.





Fresh Milk 1 liter  
Special offer \$2.00  
Save \$0.50



Chicken Stir Fry  
Special offer \$3.04  
Save \$1.99  
[Recipe details](#) ▶



# Reality<sup>2</sup>

Paul Jenkins claims to eat, drink and sleep packaging innovation. His philosophy has been filtered into The PackHub, a UK-based platform that brings together specialists from various fields to advise brand owners on their packaging solutions. IN spoke to him about the possibilities of Augmented Reality (AR), an interactive technology that enhances the user's experience by generating new virtual perceptions from real world materials.

#### How and why did augmented reality become part of the tools of the packaging industry?

Augmented Reality has been a viable packaging tool for a number of years. There were a handful of almost experimental examples when it first came out and we now regularly see some great AR being used. I still don't think it has reached its full potential yet as an exciting marketing communication tool.

#### Do you find some industries more receptive to AR than others?

Brands that appeal to children such as in the toy and confectionery industries seem to do better in this area than other sectors.

#### What are the keys for a successful use of augmented reality in packaging?

Ideally it needs to be different, highly engaging and have an appeal that is so strong that it encourages consumers to share on social networks and go viral.

#### What value does augmented reality bring to packaging?

It allows brand owners to engage with consumers in a way just not possible with traditional communication methods. It can also add another level of communication to a package already busy with mandatory requirements such as barcodes, ingredients, etc.

#### What are a few of the best examples you have seen?

The Heinz ketchup bottle that offers recipe examples is a great example of AR being used effectively. Not only is it fun and engaging but it supports one of Heinz's overriding goals to encourage consumers to use their product as an ingredient as well as a garnish.

#### What are some of the challenges companies face when implementing AR strategies?

Being different and continuing to be creative and innovative. There's little point in a brand executing something that has been done before. Also, there is a danger of the novelty starting to wane and brand fatigue accelerating. Brand owners need to keep things fresh and exciting to keep consumers engaged.

#### What is the future of Augmented Reality for brands?

The market will continue to grow. Technology is developing very fast and consumers are becoming ever more receptive to new concepts. New and exciting ways to execute AR will ensure that it has a bright future.



# Packaging throughout the 1930's

## Cosmetics

in

DID YOU KNOW

In 1932, mascara only cost  
**10 cents**  
which is equivalent to  
**\$1.71**  
today<sup>1</sup>

Despite the uncertainty of the times, the '30s were a time of glamour. Ladies' cosmetics were just one market where packaging design was revolutionary in its approach to woo the female customer. Designers and advertisers began featuring famous actresses as endorsements for their products. Judy Garland and Joan Crawford were among the most popular. Packages used bright colors and imitated the style of other existing products to make consumers feel comfortable with the new cosmetics.



This 1932 Mascara packaging by Maybelline resembles a matchbox. This was an intentional strategy of brand owners at the time to persuade women to buy new products they were unfamiliar with through familiar designs.

## Food and beverages

in

DID YOU KNOW

The  
first  
canned beer was  
introduced on  
**January 24,  
1935<sup>2</sup>**

The '30s were to food packaging what the '60s and moon landing were to space travel; a true revolution. Not only were the first frozen food brands commercialized, the 30's also gave birth to canned beverages. Bottles required brand names to be embossed, while the introduction of cans and labels opened up a whole new world of food choice and design possibilities.



The first beer can designs were introduced with modern graphical designs. Clean, sans serif fonts were used along with bright colors and block graphics.

# Design in a time of crisis

IT IS DOCUMENTED THAT SALES OF LUXURIOUS CONSUMER PRODUCTS DO RELATIVELY WELL DURING TIMES OF CRISIS BECAUSE PEOPLE ARE LOOKING FOR DIVERGENCE AND A MEANS TO ESCAPE REALITY.

Ladies' shoes are a perfect example. When the economy starts sliding down, the heel height of ladies' shoes goes up in an effort to compensate for the austerity of expenses — when income starts flowing again, foot comfort matters more and appearances start to matter less.

This theory was proved in 1930s America as unemployment during the Great Depression rose by a shocking 607 percent. During the '30s, heels grew higher and lipsticks went redder, and because of the increased sales in luxurious goods, packaging design firms to service those products boomed and stayed afloat. The packaging design industry at one time employed an estimated 5,000 workers.

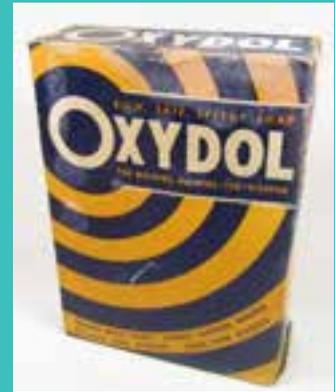
## Hygiene

in

DID YOU KNOW

The  
first  
laundromat was opened  
in Ft. Worth, Texas in  
1934<sup>3</sup>

Cleaning products also felt the effect of the dynamic and creative entrepreneurial designs of the 1930s. Packaging for detergent and soap hadn't changed in almost a century, but began to change after new products were created in the '30s. The first synthetic laundry detergent was launched by Drefl, who set a new industry standard with the use of clean, solid colors and an intriguing typography that was very modern for its time.



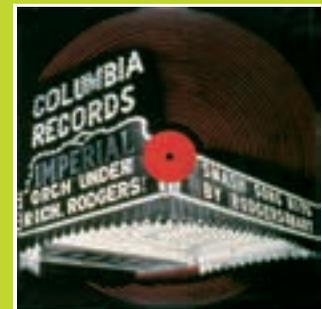
## Entertainment

in

DID YOU KNOW

Alex Steinweiss designed  
an estimated  
870  
album covers spanning over  
30 yrs<sup>4</sup>

As history shows, music and film during the 1930s was the golden era. The "movie star" was born and people flocked to newly constructed movie theaters to escape the reality of the real world. Phonograph records came in plain brown packaging until 1938, when the modern album cover, as we know it today, was designed, creating a new way to advertise music artists and appeal to fans.



The above image shows the first-ever packaged record album made.



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