

# THE FUTURE OF COSMETICS



## 12 Tomorrow's Beauty Care

We may soon be preparing our own personal care products at home. After all, we know best what's good for us. And the cosmetics industry is giving us the know-how and the ingredients.

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Harald Büttner works as an innovation scout for Beiersdorf. He depends on open sharing rather than a culture of secrecy.

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Increasing environmental pollution is pushing this high-powered organ to its limits. New active ingredients in cosmetics are reinforcing protective microorganisms.

## 20 Green Force

When plants defend themselves, they produce valuable ingredients for cosmetics. Franck Michoux has based an efficient business on this fact.

At Evonik Advanced Botanicals in Tours, ginseng seedlings are cultivated as suppliers of natural active ingredients

# Tomorrow's Beauty Care

The cosmetics industry is once again reinventing itself. Its business is becoming more natural, more personal, and more digital. And this transformation is going deeper than ever before

TEXT TOM RADEMACHER

It's a success story that began in a boiler room. In the early 1980s, Dr. Udo Straetmans, a chemist and enthusiastic inventor, was searching for ways to keep unwanted bacteria, fungi, and yeasts in check using natural substances. Accordingly, he was testing things that spoil and decay—as well as antidotes to these processes. He did this research in his basement, because the boiler room's cozy warmth was an ideal habitat for microbes. Ten years later, his initial attempts had become marketable products. Companies from the budding natural cosmetics sector flooded him with orders. Today, almost three decades later, the demand for Dr. Straetmans' alternative preserving agents is greater than ever. Natural cosmetics are currently a global megatrend. The worldwide market is expected to reach US\$22 billion by 2024—thus doubling within eight years.

## A CRITICAL LOOK AT THE INGREDIENTS

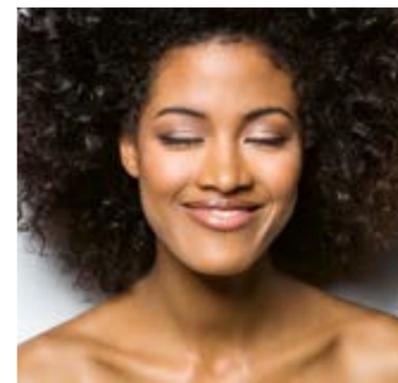
Dr. Jan Jänichen has often told the story of Dr. Straetmans. He's a nephew of the founder of Dr. Straetmans GmbH, and he and a fellow student joined the company in 2002. In 2005 the two of them became its Managing Directors. There's a family atmosphere at the company's small headquarters on the outskirts of Hamburg. Jänichen's sister-in-law is in charge of marketing, and the laboratory is headed by his former intern from the



**JAPAN** is the biggest single market for cosmetics and body care products that remain on the skin or in the hair. Japanese consumers are especially discriminating and safety-conscious. Locally made products with high-tech active ingredients are especially popular.

university. But the company has been operating globally for a long time, and nowadays the two Managing Directors travel frequently. Evonik acquired Dr. Straetmans GmbH last year. The new parent company—from Essen to Shanghai—is now adapting all of its key cosmetic formulations to preserving agents from Straetmans.

“Our customers don't just have definite ideas about what they need—they also know exactly which things they don't want,” says Jänichen. And that list keeps getting longer. It includes parabens, aluminum, palm oil derivatives, and genetically modified plants. Critical consumers nowadays scrutinize the INCI lists on the backs of cosmetics bottles, tubes, and jars and even use



**BRAZIL** More rinse-off products—that is, products used in the shower or the bath—are sold here than in any other country. Long, well-groomed hair is an important component of ideal beauty. The average Brazilian woman showers more than once a day. A tropical climate and curly hair structures require special care products.

## “Our customers know exactly which things they don't want”

DR. JAN JÄNICHEN, MANAGING DIRECTOR DR. STRAETMANS



**USA** US consumers appreciate technological innovations—and large package sizes. The USA is one of the makeup markets with the highest levels of market penetration. Organic cosmetic products are becoming increasingly popular, with market researchers predicting annual growth rates of six percent until 2020.

special apps to find out whether their cosmetics contain undesirable ingredients. INCI stands for “International Nomenclature of Cosmetic Ingredients.” This labeling of ingredients has been mandatory in the EU for over 20 years. “The cosmetics sector is much more transparent in this regard than the textile sector, for example,” says Dr. Tammo Boinowitz, who heads the Personal Care business line at Evonik.

## NEW CHALLENGES REGARDING SUSTAINABILITY

The Personal Care innovation center for cosmetics in Essen is the biggest of the seven cosmetics labs operated by this business line around the world. Here specialists develop and test new raw materials and active ingredients for the beauty sector in order to satisfy increasingly strict standards, organic certification requirements, and customer tastes. There is increasing demand for natural preserving agents, skin-like substances, and plant-based active ingredients.

The industry giant L'Oréal has introduced its own “Naturalness Index.” “We use it to measure raw materials' naturalness and sustainability,” explains Sylvie Fonteneau, who is responsible for monitoring which raw materials are authorized in-house at the company, which is the world's biggest cosmetics producer. “When I started working in this sector, performance was just about the only criterion,” she adds. “Today we want to know exactly where the raw material comes from, how it was produced, and how it was processed.” That's a tall order, especially for small suppliers. “We support our suppliers in this effort, but L'Oréal has set itself the goal of selling only products that have an environmental or social value by 2020. And as the sector's biggest buyer, we are of course pushing the raw materials market in this direction,” she says.

Evonik has been producing ingredients for cosmetics and personal care products for over 90 years. Between the two World Wars, it was already providing the emulsifier TEGIN for Nivea Creme, and it still does so today. Over the years, Evonik's product range has grown—to begin with in the area of “functionals.” These are raw materials that give lotions, shampoos, and other cosmetics their basic qualities. They emulsify, stabilize, conserve, cleanse, and provide the desired texture and the right skin sensation. Global cosmetics producers use “chassis formulations” for multiple products that they sell all over the world. Replacing a “chassis formulation” ingredient that has received a →



**CHINA** The affluent middle class prefers foreign labels and has little trust in Chinese products. Chinese customers buy their supplies of cosmetics when over seas and online. Temporary limits placed on travel because of political reasons therefore have immediate effects on the sales figures of local producers.

ing how this interplay between good and bad bacteria on our skin influences the skin's health," Boinowitz explains. Evonik recently launched its first probiotic skincare product, Skinolance, on the market. Established manufacturers such as Beiersdorf AG and the US pharmaceuticals and consumer goods company Johnson & Johnson are also keeping an eye on these new developments. Both of them have bought shares in S-Biomedics, a startup that was founded in Magdeburg, Germany in 2015 and has developed a product that combats acne by influencing the microbiome.

But the most important trend today has nothing to do with active ingredients or skin cells: Digitalization is causing far-reaching upheavals. "Things have changed more in the past three years than they did in the previous 50," concluded L'Oreal CEO Jean-Paul Agon in a recent interview published by the newspaper *Handelsblatt*. "Thanks to the Internet, small brands are popping up like mushrooms. In the digital world it's easier to create a small brand. As a result, there's a lot more variety in the sector today." In addition, there are online influencers who in some cases have millions of followers on Instagram or Twitter and set their own trends—and manufacturers have to react to these trends. "It's a big help if our suppliers can already pull the data about an active ingredient that is suddenly in demand, or even a finished formulation, out of their files," says Dr. Harald Büttner, Head of Technology Scouting at Beiersdorf.

critical review with an alternative that fulfills the new demands for naturalness and sustainability is not an easy task—but it's worth doing. Evonik recently received an award at the cosmetics trade fair in-cosmetics Global for a new development in this segment: RHE-ANCE One, a cleansing substance for the skin and hair from the class of glycolipids. It's manufactured from sugar through a fermentation process and thus contains no tropical oils.

In addition to functionals, Evonik is increasingly producing active ingredients, called "actives" for short. "There's an especially big demand for natural and skin-related substances such as ceramides, peptides, amino acids, sphingolipids, and hyaluronic acid, which can have a direct influence on microbiological processes in the skin," says Boinowitz. Two years ago, Evonik acquired the French startup Alkion Biopharma SAS in order to expand its business with plant-based active ingredients. This subsidiary, which has been renamed Evonik Advanced Botanicals, cultivates plants that produce active ingredients in the form of herbal biomass under laboratory conditions. In this way it produces extracts in especially high concentrations and without seasonal fluctuations in terms of availability or active ingredient content (see the report starting on page 18).

**BACTERIA FOR HEALTHY SKIN**

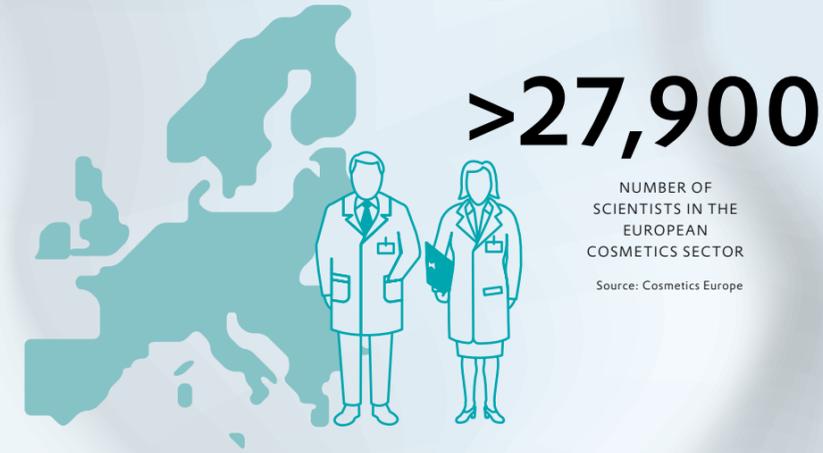
One new trend in the cosmetics industry is a focus on the skin's natural microbiome. "Right now we're learn-



**SWEDEN** The Scandinavian countries spend the most for cosmetics per capita in comparison with other European countries. Swedes and other northern Europeans are willing to pay higher prices for top quality. Cosmetics manufacturers from Sweden, Denmark, and Finland are pioneers in the use of natural ingredients.

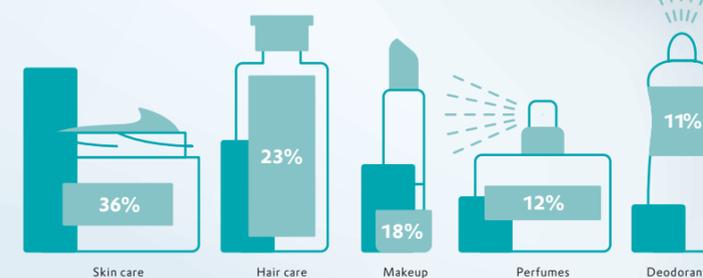
# Unadorned Facts

In recent years the business operations of beauty and care product manufacturers have been largely impervious to crises. And the end of this period of growth is not yet in sight. The experts predict worldwide growth in sales, from more than €440 billion last year to approximately €670 billion by 2023



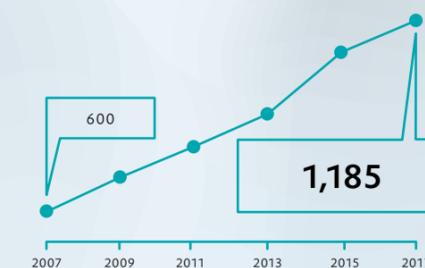
**PRODUCT CLASSES' PERCENTAGES OF THE GLOBAL COSMETICS MARKET**

Source: Racontuer Infographics/L'Oréal



**SALES OF NATURAL COSMETICS IN GERMANY (IN MILLIONS OF EUROS)**

Source: Statista



**THE GLOBAL MARKET FOR COSMETIC PRODUCTS (SALES IN BILLION EUROS)**

Source: Cosmetics Europe



**2.35**

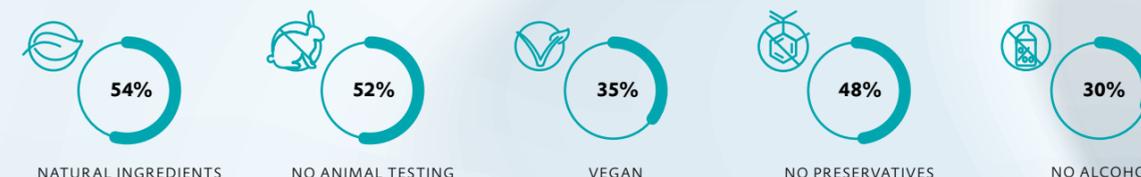
BILLION EUROS ARE SPENT BY EUROPE'S COSMETICS SECTOR ON RESEARCH AND DEVELOPMENT (2017)

Source: Cosmetics Europe

**WHAT CUSTOMERS LOOK FOR WHEN THEY BUY COSMETICS AND CARE PRODUCTS**

Results of a survey of online shoppers in Germany, France, and the UK

Source: A.T. Kearny





**FRANCE** is the second-largest cosmetics market in Europe, after Germany. It's the home of leading manufacturers of perfume and makeup. Frenchwomen use less than half as many makeup products per capita than British women, for example. However, anti-aging creams are especially popular in France.



**IRAN** is an important cosmetics market—as long as sanctions do not impede business operations. Women in Iran set great store by cosmetics, using extremely striking eye makeup—and prefer very high-quality care products.

The good news is that social media is boosting the cosmetics business. For example, about 1.5 billion tubes of lipstick were sold in 2017—an increase of 13.6 percent compared to the previous year. This was partly due to the fact that young consumers today want to be “selfie-ready” at all times and use makeup accordingly. Striking looks, with luscious lips and strong contours, are popular. A flood of makeup tutorials on YouTube shows how it's done.

#### TRYING OUT MAKEUP PRODUCTS VIRTUALLY

In the digital world, services and data are growing in importance. L'Oreal recently bought Modiface, a Canadian tech startup that enables customers to use augmented-reality software to try out different makeup products virtually. The software runs as an app on smartphones, but can also be used for interactive mirrors in a customer's own bathroom or in a boutique. “We acquired Modiface because we are absolutely convinced that services represent the future of the beauty sector,” said L'Oréal's Chief Digital Officer, Lubomira Rochet, to the business magazine *Forbes* concerning the acquisition.

Modern sensors are driving another trend: individualized care for every skin type and every lifestyle. At the beginning of 2018 L'Oreal launched a small UV sensor that can be glued onto a fingernail and wirelessly sends data to the wearer's smartphone. Evonik is literally going even deeper. It has invested in a startup called mySkin based in New Jersey, USA, which has developed the mobile terminal OKU. This is a handy cube that uses an optical sensor to analyze the user's skin in depth. A smart app uses this data to create individualized tips about care, nutrition, and lifestyle. On the basis of constantly updated user data, OKU contin-



**KOREA** is nowadays influencing global trends almost as strongly as France. “K-Beauty” has become an umbrella term for innovative products and elaborate beauty rituals from Korea. The Korean ideal of beauty is light-colored skin that resembles porcelain.

uously learns—and so does Evonik. “We're learning what works, and for whom it works,” Boinowitz explains. “As a result, in the future we could also distribute test products to OKU customers and conduct large-scale studies of their effects. So far, even the biggest cosmetics producers have seldom been able to conduct such studies.”

#### CARE PRODUCTS FROM THE FOOD PROCESSOR

Both digitalization and natural trends are being influenced by beauty product customers' desire for greater personal control. Customers want to know what's inside the products they buy. Minimalistic formulations with only between five and ten natural ingredients are popular, and there's a flourishing do-it-yourself scene in which the popular Thermomix food processor is used to create the user's own care products. The startup The Function of Beauty enables customers to concoct shampoos and conditioners according to their own preferences. The Experimental Perfume Club is an open-access perfume laboratory in London that can turn anyone into a fragrance designer.

“It's all about creating the equivalent of Nespresso for the perfume industry. We think this is a really hot trend,” says L'Oreal CDO Rochet. In a few years, it may be a matter of course for cosmetics consumers to create their own care products at home at the push of a button—just like an espresso from an aluminum capsule. A skin sensor will provide them with the necessary data. L'Oreal, Beiersdorf, and similar companies will offer the microbiological know-how as a digital service. And Evonik will provide the sustainable natural raw materials. —

## “We can't have all the ideas ourselves”

**Dr. Harald Büttner**, Head of Technology Scouting at Beiersdorf AG, depends on open innovation. That enables his company to build on its suppliers' know-how and learn from other sectors—such as the construction industry

#### Mr. Büttner, what was the last place where you looked for new ideas?

I've just come back from a congress and trade fair in Japan that focused on fermentative production processes and the related raw materials and products. The Japanese and the Koreans are traditionally strong in this area, and I'm convinced that it will become important for our sector.

#### How important is open innovation for Beiersdorf, and why?

We can't have all the ideas ourselves. It's extremely worthwhile to screen technologies from a very wide spectrum—including companies outside the cosmetics sector.

#### Can you give us an example?

Think about the problem of finding substitutes for aluminum in anti-perspirants. The main question is how we can block the sweat glands. It might be useful to examine how other sectors deal with fine pores and capillaries. For example, what are construction companies and paint producers doing in this area? Can we learn anything from them?

#### What are you looking for via your open innovation platform Trusted Network?

We are turning to our registered partners with very specific questions. These partners include universities and research institutes, as well as individuals and our suppliers. But Trusted Network is only one of the many channels we use.

#### Is this a new phenomenon in the sector?

Today almost all of our competitors are doing that in various ways. However, our sector as a whole has been slower on the uptake than other sectors. For a long time, it was dominated by a certain degree of secretiveness, because our know-how is extremely valuable and the entry barriers are relatively low.

#### What key factors are needed for open innovation to work?

You need absolutely trusting cooperation. We've had that kind of cooperation with Evonik for decades.

#### Don't you have any worries about suppliers gathering more and more know-how about your business operations?

No. After all, we benefit from the fact that suppliers come to us with market-ready ideas to which we can apply our own know-how. That's how differentiation and new product attributes are generated for our customers. And of course we have our world-renowned brand portfolio, with Nivea in the forefront. —

# “We are absolutely convinced that services represent the future of the beauty sector”

LUBOMIRA ROCHET, CHIEF DIGITAL OFFICER L'OREAL