

Skin- deep science

Natura works with universities and research institutes to incorporate cutting-edge research within product development

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Cosmetics manufacturer Natura has nearly doubled in size in less than five years. Between 2007 and 2011, its net income leaped from R\$3 billion to R\$5.5 billion, product orders went from 9 million to 17 million per year; and the share of international operations jumped from 4.4% to 9%. Although the 2011 results were below expectations, the company ended the year with 9% growth and a record high net income of R\$ 830.9 million. The successful development of a company founded in 1969 with a modest laboratory and a small shop is the outcome of innovative product development and environmental impact strategies, a strong business model and adjustment at critical moments.

Based in Cajamar within the Metropolitan Region of São Paulo, Natura follows a research and development model that prioritizes cooperation



among specialists with strong academic backgrounds from different fields. This model allows projects to incorporate differing points of view. “One of the beautiful things approximately science is that it has a relatively structured language that enables conversation between scientists from different areas,” says Victor Fernandes, Natura’s 50-year-old Director of Science, Technology, Ideas and Concepts. The area he manages has direct operational focus on four major research fields: classical and advanced skin and hair science, sustainable technologies, and well-being and relationship design. “Natura’s knowledge methodology is built on these four elements,” Fernandes says. “The work is almost fractal as we deepen and broaden to relate different fields to each other.”

Fernandes, a chemical engineer who graduated from the University of São Paulo (USP) 20 years

ago, has an MBA in innovation and biotechnology management from the Massachusetts Institute of Technology (MIT) and lived for eight years in the United States, where he worked in food and innovation management. After six years with Natura, two in his current function, Fernandes says that the most common scenario within corporate R&D is grouping specialists without consideration for other fields. «Science is relevant to value creation, but the connection between various fields is Natura’s competitive advantage.»

For example, biologist Ana Paula Azambuja, Natura’s research coordinator for classical and advanced skin and hair sciences, dedicated her studies to understanding the cell biology of embryonic hearts. She now leads a project mapping the skin characteristics of the Brazilian people, a seemingly discontinuous research path. However, the hearts Azambuja studied during her

Researchers from various fields contribute to projects with different points of view



1, 2 and 3 Three hundred researchers pass through the company laboratories

4 A shot of the raw concrete and glass building

1

master's degree and doctorate in cellular and molecular biology at the Heart Institute (InCor) of the Medical School at USP provided her with the scientific and technical foundation that she now applies to skin studies.

The link between these two lines of research was supplied by researcher Alexandre da Costa Pereira, from InCor's Genetics and Molecular Cardiology Laboratory. That laboratory studies the interaction of

Brazilians' life habits – such as physical inactivity, diet, and stress levels – with the genetic factors related to the risk of cardiovascular disease. Realizing that he could contribute to research that considers not only genetics but also environmental and cultural factors in skin and hair biology, he presented Natura with a project.

«In this joint project, we tried to understand how the biological, genetic and sociocultural diversity of the Brazilian people can reveal itself in skin characteristics,» said 30-year-old Azambuja, who has been with the company for two years. Her area employs 12 re-

The research and development investment was R\$146.6 million in 2011, approximately 3% of the net revenue

an extremely heterogeneous team, which makes our research innovation process more creative,» she says.

At Natura, Research and Development reports to the Vice President of Innovation and is divided into four offices: science, technology, ideas and concepts; product development; management and innovation networks; and consumer safety. It employs 300 in-house researchers, who contribute with diverse backgrounds and specializations. «We have researchers with backgrounds in at least eight fields, including biology and health, sciences, chemistry, agronomy, engineering, administration, applied so-



2

searchers, including biologists, biomedical specialists, biochemists, chemists and physicists. «It's

cial science and humanities. They have 170 different specialties,» says biologist Manfio Gilson. Gilson works for the VP of Innovation and is responsible for communications in innovation and knowledge management. He bases this information on the company's science and technology skill mapping. Natura invests approximately 3% of its net revenues in research and development annually. In 2011, the company allocated R\$146.6 million to R&D.

Even with such a diverse team, Natura would not have been able to develop hundreds of new products every year. Last year alone, the company released 164 new items to the market. Like many other companies, to shorten the research and innovation cycles, Natura adhered to the open innovation concept. This approach was introduced by Henry



Chesbrough, the University of Berkeley Center for Open Innovation professor and executive director, in his 2003 book *Open Innovation: the New Imperative for Creating and Profiting from Technology*.

“Open innovation is a trend in which companies look outside of their business for new opportunities, both in institutions and universities as well as in small technology-based companies or through their relationship with consumers, markets and customers,” says João Furtado, a member of the FAPESP Deputy Coordination of Research Innovation and Polytechnic School of USP professor. “At the same time as they seek opportunities, they may also, in some cases, transfer opportunities they don’t want to explore to other companies.”

EXTERNAL PARTNERS

“One of the tools used to implement the open innovation model is the Natura Campus, a platform that has existed for seven years to increase the connection with innovation creation,” explains Adriano Jorge, the 29-year-old Innovation Networks and Partnerships Manager. The first version of the program was a partnership in biodiversity research with FAPESP in 2003, funded by the Partnership for Technological Innovation Program (PITE). “Inaugurated in 2006, Natura Campus is the construction site of company innovation networks with the scientific community,” said Jorge, a pharmacist who

The Natura Campus Program is one of the tools used to implement the open innovation model

graduated from USP with an MBA in Project Management from the Getúlio Vargas Foundation (FGV). He has been with the company for 12 years, starting as an intern in product development. Jorge then went through the trainee program in science and technology and has worked in innovation networks and partnerships for three years.

The external partners include USP and the universities of Campinas (Unicamp), São Paulo State (UNESP), the São Paulo Federal University (UNIFESP), the Nuclear and Energy Research Institute (IPEN), the Technological Research Institute (IPT), the Brazilian Agricultural Research Corporation (Embrapa), MIT, the National Center of Scientific Research (CNRS) and the University of Lyon 1. The last

two institutions are in France. Cooperation with small technology-based companies and raising funds for research are also part of the Natura network partnership model. More than 65% of the company’s technology project portfolio involves external partnerships.

«We also have several partner companies developing materials and packaging solutions, essential oils and even new ingredients for our products,» says Luciana Hashiba, the 45-year-old Innovation Networks and Management Manager. Currently, Natura has more than 100 companies acting as partners on various projects. Hashiba has been with the company for seven years since graduating in food engineering at Unicamp and obtaining her Ph.D. in business administration from FGV. She began her career in packaging technology, leading the new products development team in marketing before becoming head of the Innovation Networks and Management area four years ago. In July of 2011, Natura was listed by U.S. Forbes magazine as one of the 50 most innovative companies in the world. It was the only Brazilian company on the list and ranked eighth, very close to Apple (5th place) and Google (6th).

In addition to the Cajamar facilities, which amount to an integrated, 80,000-square-meter research, production and logistics center, the company also has a research laboratory in Belém, Pará; a laboratory in Paris, France; and a

partnership with the National Laboratory of Biosciences (LNBio) in Campinas. In Cajamar alone, approximately four thousand employees pass through the corridors daily. Of the 300 researchers at the company, half have a master's degree or a doctorate.

Contributions to the research line choices come from both internal and external demand. «The macro view, for example, is managed by the area directors, who select the focus topics,» says biologist Ines Francke, the 28-year-old Sustainable Technologies Scientific Manager and a graduate from Unicamp. One of Francke's programs concentrates on social and environmental indicators, including carbon and water footprints. «Our team is responsible for creating tools to manage and quantify social and environmental impacts.» In the case of carbon emissions, the issue arose in the wake of global warming concerns. «We created a new greenhouse gas inventory method with the product life cycle in mind, from the extraction of biodiversity assets to the disposal of the product,» says Francke.

WATER FOOTPRINT

The inventory of water consumption is still being validated. «We looked through the methodologies on the market and chose the most comprehensive one, called the water footprint, which has a rather complex indicator,» says Francke. «We studied the methodology with a group from the University of Twente, in the Netherlands, which created the concept.» Before establishing the measurement process for the company's water footprint, the researchers used a pilot project to test the outcome with the life cycle of two products – a body oil and a fragrance.

The great difficulty in establishing indicators is the amount of raw materials used in the products. «For some of them, we got genuine data from our suppliers. For others, we had to resort to databases in Europe,» says Francke. In terms of the water footprint, Natura entered into partnership with a Swiss consulting company, along with companies such as L'Oréal and Kraft, to finance a regionalized database. To create a carbon inventory, the company relied on the guidelines of the Swiss Institute Greenhouse Gas Protocol (GHG Protocol).



Essential oils from Brazilian biodiversity plants, used in perfumes

INSTITUTIONS WHERE THE COMPANY'S RESEARCHERS STUDIED

Victor Fernandes, chemical engineer, Director of Science, Technology, Ideas and Concepts

USP – undergraduate course
MIT – MBA

Ana Paula Azambuja, biologist, Research Coordinator for the classical and advanced skin and hair sciences

UFPR – undergraduate course
UFPR/USP – master's degree
USP – doctorate
University of Málaga – post-doctorate

Gilson Manfio, biologist, in charge of communication in the area of innovation and knowledge management

Unicamp – undergraduate course
Unicamp – master's degree
University of Newcastle – doctorate

Adriano Jorge, pharmacist, Innovation Networks and Partnerships Manager

USP – undergraduate course
FGV – MBA

Luciana Hashiba, food engineer, Innovation Networks and Management Manager

Unicamp – undergraduate course
FGV – master's degree
FGV – doctorate

Ines Francke, biologist, Sustainable Technologies Scientific Manager

Unicamp – undergraduate course
FGV – postgraduate course

The sustainable technologies area has 12 employees working in four research programs: socio-environmental indicators, biomimetics, ecodesign and bioagriculture. Francke also works in biomimetics, a program that was begun last year after suggestions from the researchers and scientific managers who map technology trends. «We are inspired by nature to create solutions not just for products, but also for processes,» says Francke, a biologist who graduated from Unicamp.

Since joining Natura in 2007 as a trainee in the field of consumer safety, Francke has already worked in several areas and completed a postgraduate course in management. She is currently specializing in biomimetics at the

Biomimicry 3.8 Institute in the United States. The institution, created by Jantine Benyus (the inventor of the concept of biomimetics), is partnering with the company in this line of research.

Natura's strategy for communication with the scientific community was reorganized a year and a half ago. «We want to increasingly share the knowledge generated in-house,» says Gilson, a biologist specializing in microbiology who has been with the company for seven years. One such example is the increased number of scientific papers published by the researchers, after securing the intellectual property by filing for patent rights. «Over the years, Natura has published 40 articles. Last year, there were six publications.» ■