Priva: Shaping Sustainable Cities

The Dutch company Priva provides IT-solutions and knowledge to its clients in climate, water, and energy management. No longer content with simply providing green technology solutions, Priva aims to shift and shape mentalities to build a circular economy, where disparate parties get together and jointly embark on a trajectory towards a more sustainable future.

"My story? That's the story of the Netherlands as the greenest city in the world, the Sustainable Urban Delta as a new business model for the Netherlands. My stage? The world!"

Meiny Prins, Priva CEO

Introduction

It was an unusually warm winter day in Janvuary 2020 as Meiny Prins walked towards the entrance of the Priva campus in De Lier, the Netherlands. As the current CEO of Priva – a global provider of green technology solutions, it was no surprise that her to-do list seemed never-ending; another day full of presentations, calls, and meetings. As Prins reflected on the day's activities, she stopped to admire the impressive building that housed the foundation and legacy started by her father 60 years ago that had now become a global powerhouse and innovator in three major markets – building automation, horticulture, and indoor growing. The office space had no air conditioning or gas connection, but maintained a steady 22 degrees celsius year-round: this meant that the building used a lot of recycled materials and monitored the storage and flow of hot and cold water, in order to provide an energy-conscious work climate every day.

Priva started out as a family business in horticulture climate control systems. Next, it went into indoor climate control in buildings, learning new things and establishing a position in this new growth market. Priva recognised it was well positioned to play a leading role in addressing energy and water inefficiency as well as other issues that required systems thinking. So, it started vertical or indoor farming – the cultivation of greens under completely controlled conditions without natural light. Thanks to its extensive experience and a focus on research and development (R&D), Priva could offer complete package solutions: equipment, software, and management strategies – not just in its home market but also globally, in particular to those megacities where land shortage, resource depletion, climate change, and food supply were typical problems.

Prive might seem to have achieved a lot, but Prins believed it could do even more. Rather than just delivering high-tech, sustainable solutions to resource-conscious customers, Priva could play a pivotal role in bringing many different parties in the world together and jointly build infrastructures that could faciliate the creation of circular economies. With this vision in mind, the quesiton for Prins was how Priva could take this next step.

This teaching case was prepared by Daniela Boyaninska and Martin Ossewaarde under the supervision of Dr. Ying Zhang at the Rotterdam School of Management (RSM), Erasmus University. We would like to thank Meiny Prins and Thera Rohling from Priva and Tao Yue from RSM's Case Development Centre for their input. This case is based on field research. It is written to provide material for class discussion rather than to illustrate either effective or ineffective handling of a management situation.

Company History

Jan Prins and his uncle Cor Valk started 'Valk & Prins' (soon abbreviated to Priva) in 1959 in De Lier as a trade company importing hot-air heaters for use in horticulture (**Appendix 1**). A few years later, the company presented its very own Priva Canon, which was a big commercial success. As greenhouse horticulture grew using natural gas the company switched to selling expertise on entire climate management systems for greenhouses. In 1977, Priva presented the first computer in horticulture that controlled climate, energy and water.

After the energy crises of the 1970s, a new international market emerged in indoor climate control systems that would save energy cost and make Western countries less dependent on energy imports. The RAI Exhibition Halls from Amsterdam asked Jan Prins if his systems could also regulate indoor climate in their buildings. Assuming that the parallels with horticulture were enough for its expertise to be useful, Priva entered the new niche. However, this market proved to be completely different in terms of business model and value chain, technology portfolio and installation & service.[1] As a result, Priva's building activities were set up as a separate business unit. Nevertheless, the company became a national leader in building control systems. Van Beek Engineers from Arnhem, energy consultants since 1984, increasingly partnered with Priva, and formally joined Priva in 2001.

In 2007, Priva opened its brand-new head office in De Lier under the name Priva Campus, a centre of innovation and knowledge exchange for sustainable development. It was itself one of very few CO_2 neutral buildings in the world. It used heat exchangers and needed no connection to the gas grid. Many recycled materials were used in construction and the indoor climate was managed by Priva's very own systems. Aesthetically, it was a beautiful building and a pleasant place to work and meet for its over 300 staff and numerous visitors (**Appendix 2**). It became the new home for the recently merged divisions horticulture and building control systems.

Meiny Prins, Priva's CEO since 2005, believed Priva as a leader in innovation for sustainable development must have strong beliefs, a clear vision and the determination to act on them. She considered that Jan Prins' 1995 'Norms & Values' should be internalised and practised by all staff. In order to re-establish Priva's brand identity, in 2009 she initiated a five-step participatory process to 'uncover' it.[2] Special attention was paid to putting the new brand promise into practice through voluntary 'brand ambassadors' who went around the company to assist in overcoming barriers. The results of the exercise were a renewed focus on user-centred design, an innovation roadmap, and fresh guidelines for Priva products, communications and environments.

A Family Entreprise

As Priva approached its 40th birthday, Jan Prins (**Appendix 3**) wrote down the principles by which he had always led the company: 1) the company's long-term continuity always comes first; 2) the people in the organisation must be respected,

should be able to work safely and develop themselves; 3) honesty and integrity are non-negotiable wherever in the world Priva operates; and 4) as a matter of financial bottom line Priva should operate at a profit.

In the late 1990s, Jan Prins broached the topic of succession to his most trusted advisers in and around Priva. He wanted to keep Priva in the family. They suggested they talk to Jan's three children – daughter Meiny, a two-year younger sister and a 12-year younger brother of Meiny – to find out their interest in being involved with the company. The result was that Meiny, who up to then had had a career as a teacher and graphic designer, came forward. It was useful that she had learnt to build her own company and client base, albeit in a different field.

At nearly 40, she went to study business administration at Erasmus University in Rotterdam, doing her thesis on cultural and structural barriers to innovation in family-owned businesses. In 2002, she entered Priva in the role of Managing Director Strategy & New Business. For three years, she got to know all business units and 325 people in the company. That was a useful time, both for her and for Priva.

In 2005, Jan Prins offered Meiny the position of director at Priva Building Intelligence and Priva Agro. He stepped back the following year. As owner and CEO, Meiny initiated and oversaw the merger between these two companies. Her vision for Priva was to invest in deepening its strengths rather than broadening its scope. As a result, Priva sold off parts that were no longer considered relevant to the new focus.

In 2010, brother Reinder joined the board of directors, but later left again to start his own company. He had views that significantly diverged from Meiny's and decided to leave rather than a be source of disunity that might damage Priva. Jan Prins had always said that the company interest overrides family interests. This situation caused the Prins family to start writing a formal family statute.

In 2015, Ton Wallast joined Priva as CFO. He formed the two-member Board of Directors together with Meiny. According to Wallast, the Board in 2018 were planning to share part of the company shares now with the Prins family with the wider Priva Family, as they liked to call the employees.

Core Business

Wallast said that Priva's strength was that ICT nerds co-operated with professionals who had learnt the trade of horticulture or facility management in practice. Technological degree holders worked alongside graduates from Wageningen University & Research in Life Sciences for the common purpose of making Priva and the world a little better.[3]

Priva's products and services fell into three categories:[4]

- Horticulture Systems for flowers, fruit and vegetables
- Building Control Systems, applied in hotels, hospitals, airports, supermarkets, datacentres and public sector buildings
- Indoor farming

A quarter of employees and 20% of the budget were dedicated to R&D. This put Priva in the top 30 most innovative companies in the Netherlands. In 2009, Priva won the WWF Clean Tech Star Award, a recognition of significant achievement in innovations for sustainability.

Priva was the global leader in greenhouse climate control systems, and one of the few global competitors in building control systems. In 2015, sustainable buildings were on average worth 7% more than conventional ones. Motivations for investing in sustainable buildings included intrinsic, lower operational cost, and higher government requirements. This gave Priva a huge advantage for growth.

Combining its expertise in horticulture and building control systems, Priva ventured into indoor farming (**Appendix 4**), the cultivation of plants in a fully controlled indoor environment without daylight. Indoor farming systems were a high-tech response to growing consumer markets in densely populated regions of the world with a shortage in land and/or fresh water. With its 55 years of experience in horticulture and 35 years in building control systems, Priva was well positioned to take advantage of this new trend. Priva could offer complete (turn-key) solutions, with equipment, software and management strategies that saved customers a lot of money and work. Examples of indoor growing include, vertical farming (or urban farm towers), cultivation containers and roof greenhouses.

Priva Academy

Next to its business, there was Priva Academy – an online education service, which benefits over 2000 people in 46 countries. People could take courses anytime, anywhere, and in several languages. They might be paused and repeated as desired. Priva Academy collaborated with training institutes all over the world to integrate Priva Academy in their education programme. They also linked such institutes with horticulture companies in its network to match students with internship vacancies.[5]

Sustainability

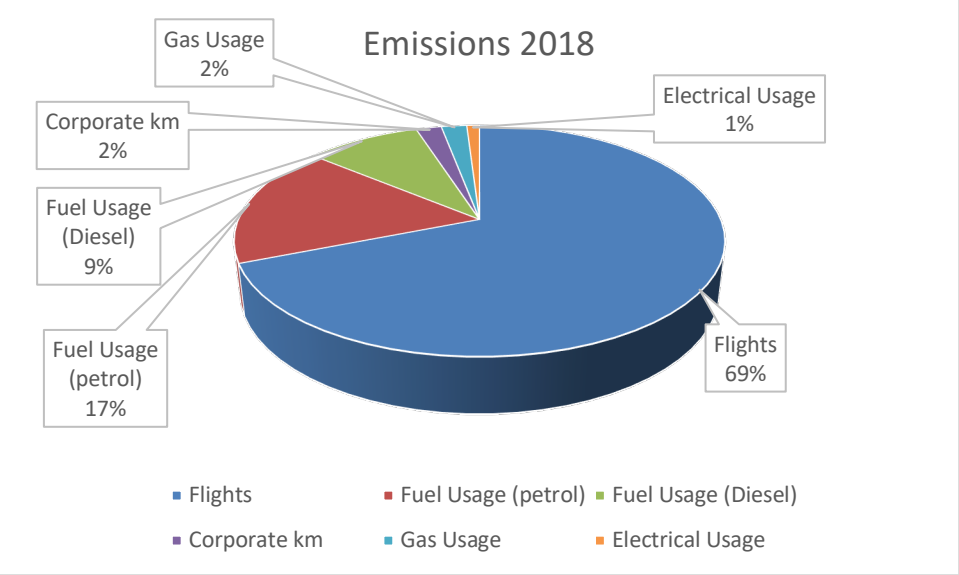
Priva was a member of MVO Nederland, the national network of companies that practise corporate social responsibility, and of the Dutch Green Building Council. Priva stated that being a responsible business meant to show how you wished to be part of the world around, not just had sustainable ideas.[6] Furthermore, according to Meiny Prins, '*Priva puts purpose over profit. Sustainability is our raison d'être.*'

Planet

Priva's first sustainable success under Meiny's leadership was the completion of its new carbon neutral headquarters in De Lier, Netherlands, in 2007. The next year, the company started measuring its CO_2 impact as kick-off for sustainability reporting. Since 2010, this had been done according to the international standard 'Greenhouse Gas Protocol' and ISO 14064-I, so 2010 served as reference year. These guidelines divided total emissions (**Exhibit 1**) into three groups measuring different degrees to which the company was responsible:

- Scope 1 – direct emissions of buildings and vehicles by Priva
- Scope 2 – indirect emissions of electricity use (by power plants)
- Scope 3 – emissions from procured products (upstream) and emissions from the use of Priva's systems (downstream)

Exhibit 1: Priva's 2018 CO_2 emissions by source



Source: Priva Energy Management Report 2018

Priva's CO_2 reduction goal for 2020 was 50%, but since the company overachieved on its 2015 interim goal, Priva raised the 2020 bar to 60% (**Exhibit 2**). The brand-new headquarters in De Lier used thermal storage, which meant that the office had no connection to the natural gas grid. In 2013, Priva changed energy supplier to Greenchoice, because of its option for 100% wind energy. The company also switched to more fuel-efficient lease vehicles and reduced their number.

Priva's ultimate goal (no target year given) was to operate in a fully carbon neutral manner. This means that all energy must be generated by renewable sources, cars must be electric, and air traffic must be compensated.

Exhibit 2: Priva CO_2 -emission in Base and Target Years

CO_2 Emissions	2010	2015	2020
(Ton CO_2 / mln revenue)	Base Year	15% reduction	60% reduction
Scope 1	12.3	10.5	4.9
Scope 2	18	15.3	7.2
Total	30.3	25.8	12.1

Source: Priva Energy Management Report 2018

People

For Priva, corporate responsibility began in the localities where the company offices were. There, it sponsored art, sports and youth associations in order to contribute to strong social structures. Priva followed a similar approach in supporting initiatives of 'The Hunger Project', which were active in Africa, South Asia and Latin America. Apart from local associations, the emphasis was on technical colleges, which provided training to the young generation in developing countries to improve their chance of employment. Finally, back in the 1980s, Jan Prins founded Jarikin Foundation, a family trust which supported basic and professional education in Haïti, the poorest country of the Western Hemisphere.

Priva required from suppliers and partners that they subscribed to and practised Priva's sustainability policy. Thus, they should stay away from resource wastage, pollution, child labour, and corruption. They should offer their employees a living wage and safe working conditions, and also require the same from their suppliers. According to Priva's Energy Management Report 2018, an annual check was carried out to verify if suppliers all over the world followed this practice.[7]

Prosperity

In 2018, Priva had about 500 staff worldwide, of whom around 350 in the Netherlands. Priva had offices in the US, Canada, Mexico, Sweden, UK, Belgium, Germany, Austria, Switzerland, China, and Australia. Globally, there were 450 partner companies in over 40 countries.[8]

Priva sales were € 60 million in 2014 and € 85 million in 2018. The company expected to cross the € 100 million threshold by 2020.

Global Network

For years, Priva invested in climate, energy and water innovations for indoor farming in co-operation with the US company 80 Acres Farm from Cincinnati. In 2019, the two companies found a third partner in UK-based Ocado Group (retail) and started a joint venture – Infinite Acres – for turnkey projects in this fast-growing field. Indoor

farming systems were a high-tech response to growing consumer markets in densely populated regions with shortage in land and/or fresh water supply. In Japan, there were already hundreds of these indoor farms growing lettuce alone.

In November 2019, Priva took a minority stake in bGrid, a company supplying electronic sensor platforms for collecting, processing and presenting data via apps. This move allowed Priva to be closer to new developments in this field while bGrid gained access to Priva's global network and greater financial power.

In regions with limited land and water resources, Priva's solutions might be quite attractive. In China, where a lot of food was grown in small lean-to greenhouses (Appendix 5) with inefficient water and fertiliser use, yields might increase two to threefold. One Priva system could manage up to 40 greenhouses. As Chinese farmers would become more familiar with Priva's approach, they might gradually upgrade their facilities to high-tech ones.[9] Priva opened its first China office in 2006, and by 2019 had three. Through its products and services Priva sought to contribute to growing food (especially fruit and vegetables) more efficiently with less input of water, fertilisers and pest control.

China was one of the countries Priva had in mind when launching the '*Sustainable Urban Delta'* Initiative in 2014.[10] Meiny Prins started advocating a new focus for the Netherlands' export-oriented industry: integrated solutions to tackle the manifold challenges of low-lying, densely populated urban deltas in an age of climate change. These issues include food for burgeoning populations, water scarcity, insecurity from rising sea levels, and the transition to sustainable urban transportation. In 2030, the target year for the SDGs, 60% of the world's population is expected to live in megacities of over 10 million people. Urban problems like air pollution, congestion, food insecurity, and obesity and malnurition will be more salient than today. However, if local authorities could pull off large-scale innovations while their economies grow to maturity, cities would become engines towards inclusive, circular economies and societies.

International research and public private partnerships were needed to generate and disseminate such solutions. In Meiny's view, the Netherlands – already a fairly sustainable urban delta at the time – had a lot of technological expertise that could be applied to global challenges. This would help achieve the SDGs while also generating new income for the Netherlands in the post-fossil fuel age. She said,

> *If you look at indoor farming, you almost waste no water. You can collect and reuse the air humidity from the plants. In that case, the only water you use is what the plant needs to grow.*

Meiny wanted to bring together government, business and civil society in various places to roll out sustainable solutions in the world's megacities, which were overburdened by large in-migration from the countryside and threatened by the impacts of climate change. In her opinion many integrated solutions were available

and needed to be implemented as soon as possible. If they managed to grow more food with decentralised, shorter supply chains to keep up with population and income growth, this might reduce dependence on imports and offer more employment opportunities.

Future Direction

Looking into the future, Prins wanted Priva to continue operating in its core markets with a focus on sustainability and solving global problems. This was what she called 'to create a climate for growth'. She hoped Priva would become a facilitator to connect actors across different sectors – private, public, and civil – using its extensive knowledge and network. More specifically, Priva would work towards this goal in four areas:

Solutions

As an R&D focused high-tech company, Priva had the advantage of providing world-class technical solutions. The widespread possibilities that adopting urban farming solutions, indoor climate control and reducing resource usage could have were limitless. For example, future greenhouses could be the ones to start delivering energy to residential and commercial areas in an urban delta – even a small cluster of greenhouses were able to deliver heat to residential areas, with one hectare being able to heat approximately 1,200 residential homes. In a revamped economy, excess energy would be transferred back to a central system, enabling a cyclical way of powering homes and powering greenhouses. Priva wanted to harness this ability of greenhouses to capture and transfer energy, in order to establish decentralized energy clusters that would connect with one another and form large sustainable deltas.

Projects

Starting from its Westland home base, Priva had gone far to experiment how it could share its expertise through global projects. Priva's building automation technologies had been used in the iconic St. Paul's Cathedral in London to improve energy efficiency and meet high heating and hot water demands. Health care facilities in the UK had reduced annual gas consumption by 22% by replacing existing systems with Priva's Blue ID. Priva's systems helped greenhouse growers worldwide to increase the yield of their crops while saving energy and water. Using Priva's Connext system in combination with Aquifer Thermal Energy Storage, energy consumption in Shanghai Chongming Island Research Institute dropped 53.5%. Priva was equipped with the tools and technologies to continue collaborating across sectors worldwide on projects to provide solutions for a circular economy. The insight gained from these projects delivered benefits by reducing pressure on the environment, improving the sourcing of raw materials and stimulating innovation for years to come.

Community

With over 627 business partners worldwide, Priva had undoubtedly reached a global community who already believed in its work. Its local partners also encouraged safe

food production and consumption, water and energy usage in their respective communities. An example was Nuevo Leon desert of Mexico. Together with Priva dealer Metaliser, a cooperative was set up by and for poor families. Thanks to governmental funding, more than 50 families had access to 2500 square meters of multi-purpose greenhouses. Through liaising with Priva in automation, irrigation, logistics and management, Priva's local partners increased their efficiency by tenfold in just a year.

Platform

The *Sustainable Urban Delta* initiative was considered by Priva a movement towards 'creating a climate for growth'. It picked up global speed rapidly, where Priva served as the pivot to set in motion local movements around the world similar to the one in the Netherlands. Ultimately, Priva hoped to remain a strategic partner in sustainable greenhouses and urban designs. In its blueprint, living areas in cities were connected to industries or working spaces, such as tomato farms that could provide energy and water to fish farming, and schools that could be combined with vegetable growing – all interconnected to ultimately create a balance in energy flows and water use. Rural and urban areas would be transformed to the extent where youth would have incentives to stay in cities and be the entrepreneurs who work with sustainable business models.

What Next?

Prins was more and more convinced that her concept of future cities was the perfect enabling factor to the circular economy. Now it was up to the stakeholders in urban deltas to mitigate the social and economic obstacles in their respective infrastructures and partner with Priva to develop their own respective climate for growth. Priva knew there were a lot of possibilities to explore. How could Priva encourage stakeholders in different urban detals across the world to partner with it? How could Priva further develop the four areas (solutions, projects, community and platform) to speed up sustainable changes? What other aspects should Priva take into consideration?

Appendix 1: Greenhouse heating in the old days

Source: Priva

Appendix 2: Priva's New Headquarters in De Lier

Source: Priva

Appendix 3: Jan Prins and Meiny Prins

Source: Priva

Appendix 4: Indoor vegetable growing at Priva

Source: Priva BV

Appendix 5: Chinese lean-to greenhouses

Source: Low-tech Magazine[11]

Resources

Priva video 'Creating a Climate for Growth', http://vimeo.com/173714734

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Endnotes

[1] *Brand-driven Innovation: Strategies vor Development & Design*, Eric Roskam-Abbing 2017, p.96-99
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[3] https://financieel-management.nl/artikel/tom-wallast-cfo-priva-marktleider-klimaatbeheersing-innovatie
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[8] Priva call for local partners: https://www.starthubs.co/Priva/Urban-Food-Production/
[9] For a discussion of low tech versus high tech in developing countries, see Low Tech Magazine online: https://www.lowtechmagazine.com/2015/12/reinventing-the-greenhouse.html and https://www.thebalancesmb.com/what-you-should-know-about-vertical-farming-4144786
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