

# **Embedding Sustainability as Innovation Driver @ Philips: preparing the ground to becoming deeply “pro-active”**

A case study for SOI Operations Optimization<sup>1</sup>

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in alignment with  
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<sup>1</sup> The term operational optimization characterizes one of the three stages of sustainability oriented innovation – SOI – introduced in the NBS-study performed by R. Adams et al. in 2012.

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## 1. Introduction

In future, firms will need to expand their understanding of sustainability beyond the financial axis to the triple-P approach if they want to retain legitimacy: their social license to operate.

But, what is the difference between traditional and 3-P-sustainability oriented business practice? Which implications will triple-P thinking have on innovation? What are the characteristics of truly Sustainability-Oriented-Innovation (SOI)?

Acknowledging this development in the year 2012 the Canadian Network for Business Sustainability (NBS) commissioned research to explore the question:

*What innovation activities do firms engage in to become sustainable?*<sup>3</sup>

Based on 127 leading academic and industry sources from 1992 – 2012 a framework was developed, introducing three levels of SOI innovation:

- Operational Optimization: is characterized by the approach *Eco-Efficiency*. Its innovation objective is compliance and efficiency or in other words it's about *doing the same things better*. The outcome is relatively reduced harm, and its nature is *incremental improvements* with respect to 'business as usual'.
- Organizational Transformation: is characterized by the approach of creating *New Market Opportunities*. Its innovation objective is to create novel products, services or business models or in other words it's about *doing good by doing new things*. It creates shared value for multiple stakeholders and requires new business processes next to the establishment of systemic relationships to multiple stakeholders. It is likely to involve radical innovation drawing on a much more 'open' approach. In this context new models of innovation are emerging such as frugal innovation, resource-constrained innovation, reverse innovation, jugaad innovation.
- Systems Building: is about the conscious creation of *Societal Change*. Its innovation objective is about creating novel products, services or business models that are impossible to achieve alone but need to collaboration of several actors. In other words it's about *doing good by doing new things with others*. The expected outcome is net positive impact. It requires a fundamental shift in the firm's purpose and extends beyond the firm to drive institutional change. This kind of innovation will certainly be radical and carry high levels of complexity and uncertainty. In this context new approaches as *environmental and social enterprises, co-creation, eco-system innovation, closed loop or circular economy* are emerging.

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<sup>3</sup> Richard Adams et al.: Innovating for Sustainability, A Systemic Review of the Body of Knowledge, 2012

This case study looks deep into the *Operational Optimization* aspects of the Philips Sustainable Innovation Exploration Journey, particularly during the period 2006 – 2011, finally resulting in Philips' new Vision, launched early 2012:

*At Philips, we strive to **make the world healthier and more sustainable** through innovation. Our goal is **to improve the lives of 3 billion people a year by 2025**. We will be the best place to work for people who share our passion. Together we will deliver superior value for our customers and shareholders.*<sup>4</sup>

This Vision is further specified through the EcoVision commitments<sup>5</sup>.

## **2. Philips:<sup>6</sup> a brief introduction**

Royal Philips NV (Philips) is a global corporation and an internationally recognized brand name. It is a diversified health and well-being company, focused on improving people's lives through meaningful innovation in the areas of Healthcare, Consumer Lifestyle and Lighting. Headquartered in the Netherlands, Philips posted 2012 sales of EUR 24.8 billion with an EBITA of 6.1%. Approximately 118,000 employees realize Philips' sales and services in more than 100 nations.

Philips is one of a relatively small band of firms which have survived longer than a century – the original company was set up in 1891 by Anton and Gerard Philips as Philips Gloeilampen Fabrieken N.V – and the Eindhoven factory they built began producing light bulbs (see <http://www.research.philips.com/successes/history.html> for a brief video back-ground, <http://www.philips.com/about/company/history/> ) for the company's history.

### *Philips innovation legacy*<sup>7</sup>

Philips' legacy of innovation dates back to its foundation in 1891. In 1914, Philips Research was established to fuel the company with innovative technologies. And since the mid 1920s, Philips Design has complemented technology with aesthetic and human perspectives. Today, Philips' multi-disciplinary, multi-cultural employee base continues this tradition of creativity, as reflected in its array of innovations and high patent output.

Philips has adjusted its innovation approach several times, anticipating major changes in society. In recent decades this has resulted in the extension of the traditional technology driven product creation process towards end-user driven innovation and the implementation of "Open Innovation", in which the firm is a recognized leader.

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<sup>4</sup> Source: <http://www.philips.com/about/company/missionandvisionvaluesandstrategy/index.page>

<sup>5</sup> Source: <http://www.philips.com/about/sustainability/ecovision/index.page>

<sup>6</sup> More information about the overall journey and Philips can be found in the helicopter-view case.

<sup>7</sup> The paragraphs on Philips sustainability legacy and innovation legacy are derived from:

[http://www.philips.com/shared/assets/global/sustainability/downloads/sustainable\\_innovation\\_paper.pdf](http://www.philips.com/shared/assets/global/sustainability/downloads/sustainable_innovation_paper.pdf)

### Philips legacy in sustainability

Putting people at the centre of their business activities, Philips' founding fathers embedded sustainability at the heart of their company since its earliest days. Already early in the 20th century Philips employees benefitted from schools, housing and pension schemes.

In the early 1970s, Philips participated in the Club of Rome's "The Limits to Growth" dialogue and in 1971 the first corporate environmental function was established. Initially this function focused on compliance to environmental laws and health & safety regulations. Already in 1992 Philips joined the WBCSD, when the Council was set up in the wake of the 1<sup>st</sup> Rio Earth Summit.

Later, in 2003, a structured sustainable supply chain program was also introduced. Philips' EcoVision programs were first launched in 1998, setting corporate sustainability-related targets. In 2003, the Philips Environmental Report (first published in 1999) was extended into a Sustainability Report and in 2009 this was integrated into the Philips Annual Report, signaling the full embedding of sustainability in Philips' business practices.

### **3. Introduction to sustainability oriented *Operational Optimization***

This first stage of Sustainability oriented Innovation – Sol - is very much about 'doing what we do but better' – a process of improvement and optimisation. In sustainability terms it is around 'greening' of existing products and processes and making efficiency and other operational improvements. Some of these may be made in anticipation of (or in response to) external legislation but others form part of a broader improvement agenda. For example, many of the factory and supply chain initiatives around 'lean' thinking contribute to a continuing sustainability challenge of doing better with less, which frequently is accompanied by decreasing cost.

The advantage of incremental innovation of this type is that it builds on existing structures and operations – it does not challenge fundamental ways of thinking or working. And although the emphasis is on continuous improvement the potential benefits when translated across the whole organization are significant. Reducing carbon footprint through supply chain improvements or switching to less energy or resource intensive products and services which deliver equivalent value can generate significant savings. 3M, for example, saved nearly US\$ 1.4 billion over a 34 year period and prevented billions of pounds of pollutants entering the environment through their Pollution-Prevention-Pays (3P) programs (3M 2011). GE Industrial saved \$12.8 million per year by using high-efficiency lights in their plants. One of Alcoa's facilities in France achieved an 85% reduction in water consumption leading to a \$40,000 a-year reduction in operating costs (Senge et al 2008).

**Table 1** summarises this stage and gives some specific examples related Philips activities<sup>8</sup>.

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<sup>8</sup>This list is by far not exhaustive, more information can be derived from the Philips Sustainability reports

## Key activities (according to NBS report<sup>9</sup>)

### Collaborations & relationships

- Co-operate and network externally to compensate for lack of resources or lack of expertise and to enhance legitimacy and social license to operate. Collaborations may include regulators, suppliers and knowledge institutions
- Collaborate internally and across functions to integrate SOI across the firm and enhance opportunities for new product success
- Work with customers to identify their sustainability concerns and to enhance legitimacy and the social license to operate.

### Capacity & (innovation) climate

- Exploit existing innovation capabilities to facilitate the adoption of incremental innovations
- Empower the top team to set the direction of and climate for SOI and ensure clarity of the innovation purpose
- Codify and formalize SOI targets and policies; integrate sustainability goals into existing technical specifications.
- Monitor performance against specific SOI criteria

### Process innovation

- Design for sustainability: redesign existing processes through incremental innovation: e.g. use tools to support SOI by addressing single issues such as pollution control, modify and redesign processes to address resource use, waste and pollution
- Use available tools such as environmental management systems, life cycle analysis to integrate sustainability into processes
- Adopt sustainable supply chain management practices and ensure suppliers are operating sustainably

### Product innovation

- Use design tools to redesign products to address sustainability considerations, e.g. dematerialization

## Related Philips activities and approaches

### Collaborations & relationships:

- Participation in external sustainability related organizations, e.g. WBCSD, Global Compact, European Foundation for Quality Management (EFQM); Participation in conferences, round tables, etc.
- Multi-functional corporate sustainability board; Sustainability Office facilitating internal multi-functional, cross-business expert network
- Sustainability awards on supplier days etc.; special solutions for customers: e.g. green light for Shell's oil platforms hindering birds to land on the platform

### Capacity & (innovation) climate

- EcoVision programs and structured innovation planning
- Environmental policy, all sites certified along ISO 14000, health & safety, energy efficiency programs, EcoVision I-III
- Ethical compliance team for innovation
- Sustainability reporting next to Annual report (until 2008) according to GRI guidelines, then – as of 2009 - integrated financial, social and environmental report
- space for "Friday afternoon experiments"

### Process innovation

- EcoDesign incl. LCA leading to green products creation
- Green innovation & "right design right"
- Explicit targets on Green production through EcoVision programs
- Green supply chain management, reverse logistics

### Product innovation

- Green products qualified through green key focal areas (energy, hazardous material, lifetime, weight, packaging, recycling &

<sup>9</sup> See page 20f of report

- Reduce materials' impacts and products' energy consumption
- Design "green" from the outset: e.g. integrate recovery, reuse and disposal thinking early in the design process, set target early
- Ensure functionality is not compromised

#### Knowledge management

- Exploit existing knowledge management capabilities to identify and access relevant knowledge; reframe internal communications to a focus on sustainability; unlearn existing knowledge that contradicts the firm's sustainability principles
- Fill competence gaps through training, targeted recruitment and the import of expertise; integrate diverse elements of TBL considerations across the firm by issuing guidelines and monitoring compliance

disposal)

- Green labeling: the "green tick" mark
- Explicit target on Green Products through EcoVision 4

#### Knowledge management

- Establishment of Green Innovation monitoring system incl. internal audit structure
- Sustainability website on both internet and intranet
- Eco-Design training as part of core curriculum for product development community
- Supplier auditing
- Sustainability training to Research community

### The journey and its starting points

This timeline captures the key steps of the Philips Journey towards sustainable innovation. "Operational Optimization" activities took place over the whole period of time and are still; in this respect they resemble similar quality management activities. They are lived and perceived as "hygiene factors", being an essential, yet not necessarily "newsworthy" part of doing business.



Figure 1: Timeline of Philips Journey towards Sustainable Innovation

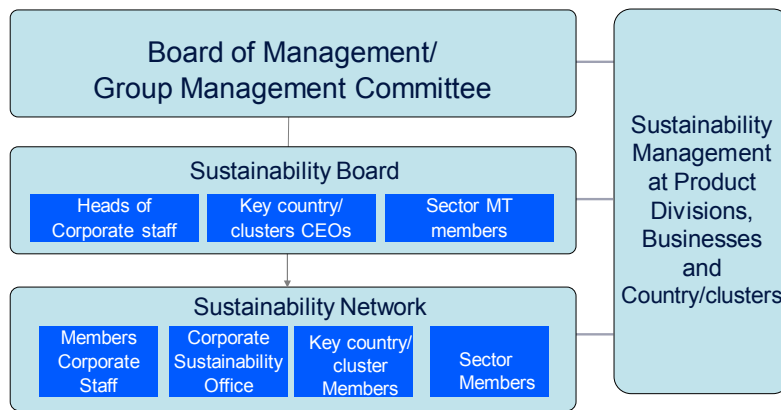
#### Sustainability: a multi-functional, operational excellence responsibility

The organisational chart below gives a brief introduction into the sustainability team at the beginning of the journey. In 2006 the chair of the Philips Sustainability Board (SB) was held by the Head of Corporate Purchasing, who was a member of the Philips Board of Management representing the theme there. The SB brought together representatives of the three business sectors, the biggest country organisations and operations related corporate functions like HR, Legal and the reporting arm of Communications. This reflected well the positioning of *sustainability as driver for operational excellence*, mainly focussing at risk and reputation

management. The *philosophy of embedding* was already expressed. Although a plan to systematically include the innovation functions did not exist, the CTO of Philips was an associated member of the Sustainability Board due to his personal passion. He built an important bridge into this part of the organisation.

**PHILIPS**

**Embedding cross-region and cross-business**



Every business unit in Philips and every site had an *environmental commission* that ensured compliance to national environmental laws and regulations and organised the yearly mandatory health and safety trainings that are required to maintain high employee awareness about these topics and safeguard workplace security.

November 2006

**Figure 2: organisational chart of sustainability function in Philips, 2006**

The Corporate Sustainability Office (CSO) was a small Corporate Unit reporting into the SB Chair. It had two main roles:

- **Externally:** engage in sustainability related stakeholder dialog, represent the firm on relevant conferences etc., respond to external suggestions, demands, etc.; create contents for external communications on sustainability
- **Internally:** orchestrate the definition, implementation and monitoring of the corporate sustainability programs, organise the content gathering for the sustainability report and both internal and external communications, prepare and aftercare the SB meetings

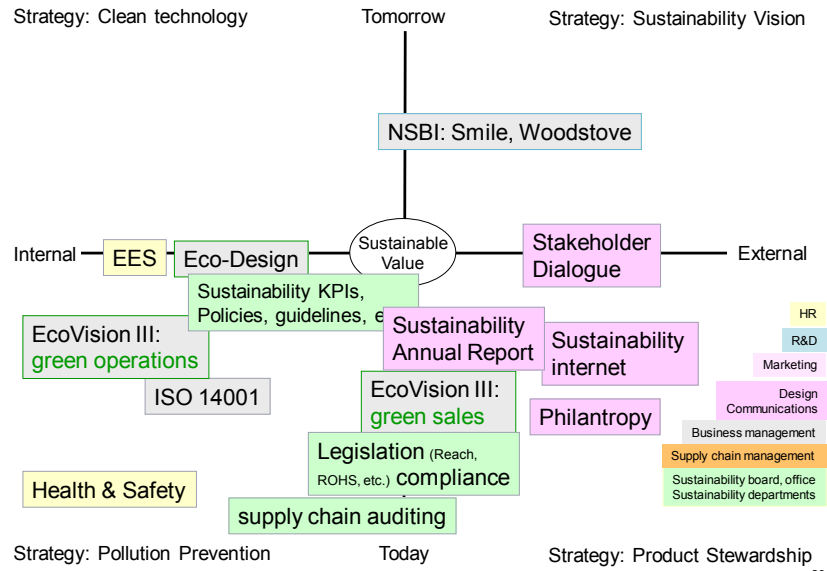
The CSO ensured consistency of deployment and implementation by running a Sustainability Network, complementary to the SB. For most environmental or social sustainability function holders this was a second role that they fulfilled next to a primary role in their department with a minor part of their time. Only very few colleagues had a full time assignment. It was remarkable that many women engaged in these roles. They did not yet have a high visibility.

As described earlier operational optimization is all ‘about doing what is done, but better’. The sustainable value framework<sup>10</sup> developed by Stuart Hart provided a great tool to create a

<sup>10</sup> See Stuart Hart: Capitalism at the Crossroads, 2005 or Philips Sustainable Innovation Journey: helicopter-view case figure 6

meaningful inventory of Philips sustainability activities and identify areas for improvement. Since Philips has a very long history in both environmental and social responsibility, it is not surprising that all state of the art risk & reputation management instruments were well implemented when the here described journey started. Miniaturisation enabling design freedom and cost reduction had been an innovation driver since decades, in many cases offering positive environmental side effects. Life-cycle assessment was a well known method and respective data-management systems and training programs in place. Philips has explicitly reported its sustainability performance since 1998, and was one of the first companies to do so. All this was recognized by external rating agencies, e.g. the Dow Jones Sustainability Index, for which Philips often led the industry. However, as can be seen there are almost no activities in the upper two quadrants, the quadrants of innovation excellence.

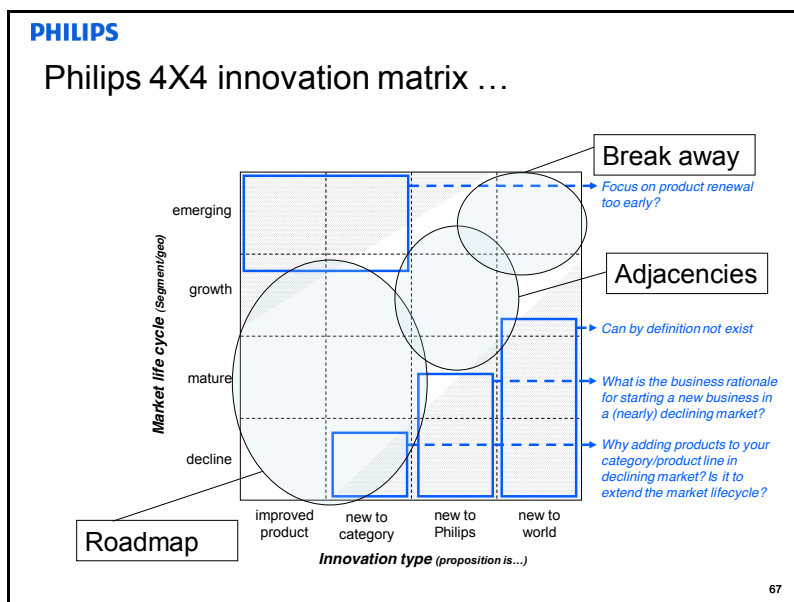
**PHILIPS**



**Figure 3: mapping of main Philips sustainability programs end 2006**

Figure 3: mapping of main Philips sustainability programs end 2006. The diagram shows a central 'Sustainable Value' circle connected to internal and external programs. Internal programs include EES, Eco-Design, Sustainability KPIs, Policies, guidelines, etc., EcoVision III: green operations, ISO 14001, Health & Safety, and Legislation (Reach, ROHS, etc.) compliance. External programs include Stakeholder Dialogue, Sustainability Annual Report, Sustainability internet, Philanthropy, and Supply chain auditing. The diagram is framed by strategies: Clean technology (Tomorrow), Sustainability Vision (Tomorrow), Pollution Prevention (Today), and Product Stewardship (Today). Various departments are listed on the right: HR, R&D, Marketing, Design Communications, Business management, and Sustainability board, office, Sustainability departments.

*Innovation: a multi-functional, innovation excellence responsibility*



**Figure 4: Philips Innovation: a multi-functional responsibility**

On the other hand – as mentioned in the introduction – Philips has a long history in technology driven innovation facilitated by a strong R&D organisation working along a well established innovation processes. It helps to manage the complexity of appropriately responding to the broad variety of market needs globally by explicitly orchestrating different types of innovation with different time horizons.



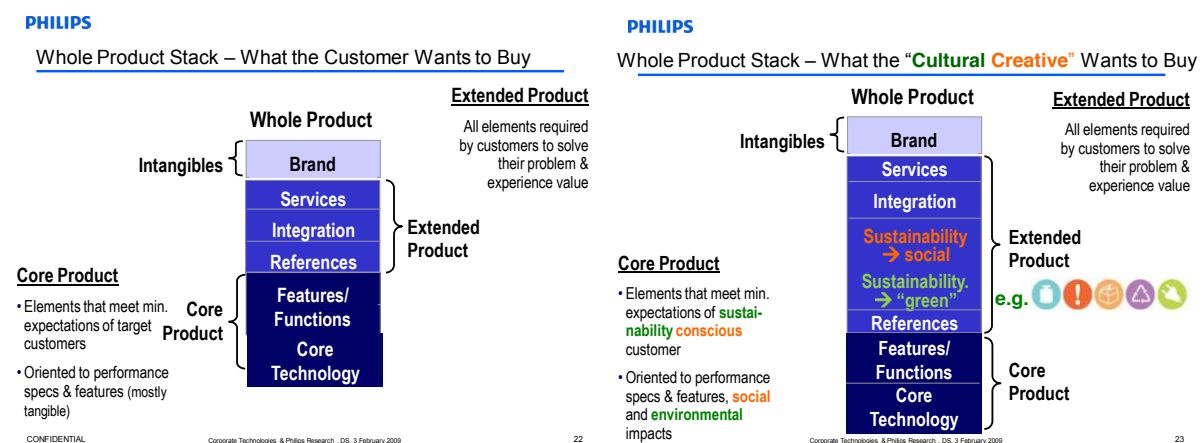
Philips traditional milestone / stage-gated *stargate* process for guiding the different phases of product development from concept creation to mass production (mapped on the → horizontal axis) had been enriched by an *end-user-driven innovation frontend* since the late 1990's (along the → vertical axis). The whole process is similar to the *Design for Six Sigma* approach and was well deployed and implemented in the entire Philips innovation organisation. In 2006 the following functions were the main contributors in the innovation process: business development organisation & business marketing organisation driving “roadmap innovation: product innovation”, Philips Design & Philips Research in alignment with the business sectors and Corporate Strategy driving “adjacencies: new innovation theme identification and respective technology development”, new business creation organisation driving “break away” innovation supported by Research and Design. Special functional units complement this in terms of Intellectual Property and Standards (IP&S), production process innovation, new supplier search to inform make or buy decision etc.

### Bringing the two worlds together in incremental steps

However, in 2006 these two worlds: the still relatively small world of sustainability and the significant world of innovation existed in parallel with limited and only coincidental touch points. They certainly were not integrated, they did not have shared agendas, they did not really know what they could mean for each other ...

### Incremental changes in existing processes

Between early 2007 – when an initial overview about the status quo of implementation was available - and mid 2010 - when the work on the consolidation of the exploration phase started - numerous incremental changes were made to existing innovation processes and tools.



**Figure 5: Example for sustainability related operational optimization → embedding of social and environmental criteria in product specification tool**

### Adding a new agenda point on existing meetings and relationships

Fortunately the innovation world next to the formal processes had a well organized annual plan of core events, management team meetings, programming and budgeting procedures, employee trainings. The opportunity existed to link in sustainability discussion to these,

providing regular attention to the topic. A prominent example is the leverage of the Corporate Research Exhibition, a yearly innovation fair that was used by Research to inform both internal and external partners about new technology developments. In the years 2006 – 2008 it was used explicitly for sustainability events. These events helped to create visibility about the new attention area internally and offered space for the two communities to meet and get to know each other. Next to this it shifted the existing external stakeholder dialogue beyond risk and reputation management towards innovation.

Another quite effective way to start to act in terms of operational optimization in an innovation context was the coaching of students working on sustainability related thesis, in the process developing working relationships with academics working in the sustainability area. At Philips the cooperation with the Sustainable Design group of the University of Delft, the University of Wageningen and the University of Rotterdam was intensified; new relationships built e.g. to the United Nation University (MERIT research group) in Maastricht, the University of Karlskrona, Sweden, and the Earth Institute at the Columbia University in New York.

Finally existing relationships to membership-organisations like EFQM, EIRMA (European Industrial Research Manager’s Association) and the WBCSD offered space to test new ideas and approaches and engage in broader sustainable innovation dialogues.

Some mental models, tools/programs, metric

The triple bottom line model of the overlapping circles (figure 6a), that had been developed to engage the business community in the sustainability dialogue prior to the first Rio conference in 1992 was very useful to share the relevance of environmental and social criteria for business and innovation and the pyramid model of the world population helped to inspire conversations about possible required scope extensions.

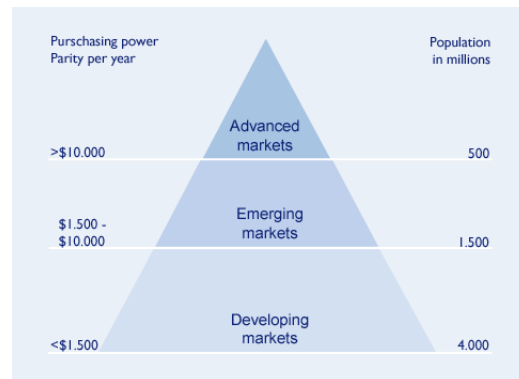
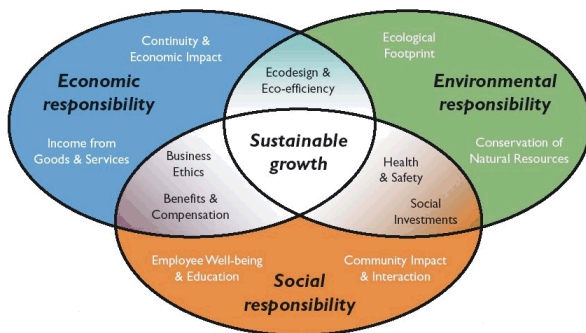


Figure 6: a) model of overlapping circles

b) market pyramid

Next to this the market pyramid (figure 6b) was intensively used in the sustainability community to motivate context relevant action. Listening to the country-representatives in the SB and sustainability network created a clear perspective on the different legal requirement and invited to develop a deep business context understanding. Applying the tools and methods of the end-user driven innovation process enabled the identification of different

needs for different markets e.g. safe products, reducing healthcare costs, lower environmental impact, less waste, more recycling, less energy use in advanced markets and the top segments of emerging markets and access to communication means, clean air, clean water and sanitation for the middle class in emerging markets and developing markets.

In 2004 for the first time the notion of “green flagship” products was introduced, qualified through a set of green key focal areas.



**Figure 7: Philips green key focal areas, and green product label**

A few years later it became clear that there was some inconsistency in language across the different Philips units. Terms being used included: Green Flagships, Green Switch product, Simple Switch products, Green Products, Green Spearheads, Green business, etc. In order to create consistency and effectiveness in communication, it was decided to use the notion of “Green Product” from 2007 onwards and this was introduced with the following description: *Philips Green Products is a portfolio of individual products or product families having a significant improved environmental performance compared to a chosen reference, and can be communicated by the Green logo.*

**EcoVision III (2006-2009)**

Improvements	Targets
<b>Product improvements</b>	
Yearly target set on number of Green Flagships: 2006	35
<b>Process improvements*</b>	
Global Warming Potential (CO <sub>2</sub> equivalents)	
Energy reduction (direct CO <sub>2</sub> )	5%
PFC reduction	31%
Other greenhouse gas reductions	4%
Water	7%
Total waste	7%
Restricted substances: benzene emissions	100%
Restricted substances: mercury emissions	83%
Restricted substances: CFCs/HCFCs	94%
Other restricted substances (excluding CFCs from cooling systems)	100%
Hazardous substances: PFC emissions	31%
Hazardous substances: lead	100%
Hazardous substances: toluene	100%
Hazardous substances: xylene	100%
Other hazardous substances	100%

\* Total reduction targets in absolute terms, against the base year 2005

**Figure 8: EcoVision III corporate program**

When this journey started, The EcoVision III program was implemented all over Philips. In essence it could be seen as a quality improvement program linked to environmental criteria. The aim of this program was to promote environmentally friendly products and operations with a focus on:

- a. Global warming prevention
- b. Minimize use of precious resources (water, energy)
- c. Minimize waste
- d. Avoid use of hazardous substances.

The main tools to enable implementation were life-cycle-assessment (LCA) and the Philips green key focal areas.

At the same time at Philips Research a “green checklist” leveraging the green key focal areas was introduced. From 2007 onwards it was consistently deployed via the champions’ network, helping to increase the awareness for sustainability among the Research population.

A yearly executed validation process – comparable to a quality management auditing process – ensured that the information quality increased significantly over the years.

**Table 2:** Progress was measured along the criteria of the yearly updated and improved Sustainability Key Performance Indicators were organized along the categories:

2006	2010	2011
Social ○ Health & Safety ○ Diversity & Inclusion ○ Human Capital Business ○ NSBI ○ Environment ○ Sustainable Business ○ Supplier Involvement Communication ○ Stakeholder dialog ○ Internal communication ○ External communication Reporting ○ Verification ○ Performance ○ Compliance	EcoVision Commitments ○ Sustainable business ○ Innovation ○ Total energy efficiency Social ○ Diversity & Inclusion ○ Health & Safety ○ Human Capital Communication ○ Internal communication ○ External communication Reporting ○ Supplier Management ○ Verification	Implement Strategy (Leadership KPIs) ○ Care to people ○ Energy efficiency ○ Closing the material loop Accelerate Change (KPIs) ○ Sustainability in Brand Value ○ Sustainability in EES ○ Employee involvement in social projects Drive Performance (KPIs) ○ Green Sales ○ Green Innovation ○ Operational Energy Efficiency ○ Carbon Footprint reduction ○ PVC/BFR elimination & Reach

In 2006 all production sites of Philips were certified according to ISO 14000. All process innovation indicators of the EcoVision III program were “lagging” performance indicators, meaning that they created transparency about relative improvements against a former situation.

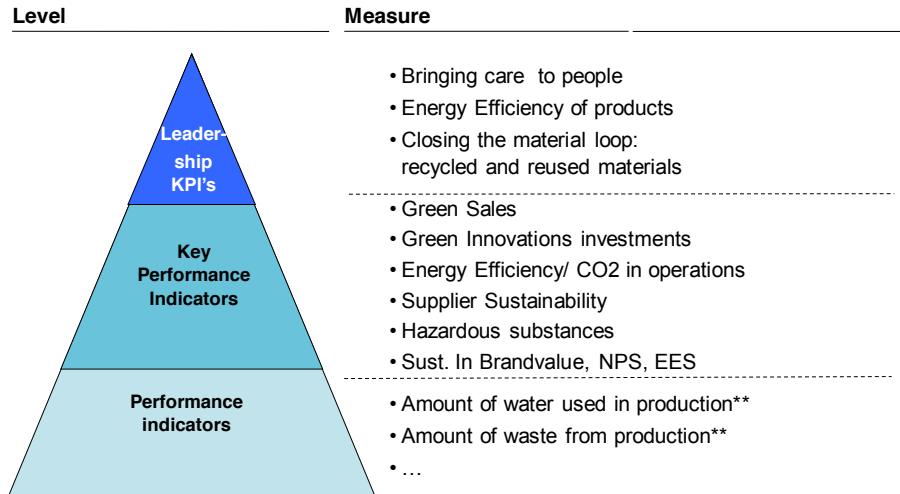
This is typical for incremental innovation. No “leading” performance indicators were used at that stage. Leading indicators communicate progress towards a “desired state”, and can be used to support more radical innovation – for example via some form of vision driven “back-casting” approach.

Within Philips a fundamental change in performance indicator hierarchy (moving from lagging only to leading indicators) at the top level took place between 2010 and 2011. In many ways this represented a point of “organizational transformation” involving a fundamental shift in “mindset” away from incremental improvement and towards more radical options. This shift was facilitated through a deep dialog about *the indicator pyramid* (see figure 9). In 2011 (also for the first time) a clear coherence between the Philips Management Agenda, the Philips Sustainability Agenda and the respective KPIs was established<sup>11</sup>.

<sup>11</sup> More about this in the case study about Organisational Transformation

## Bridging the gap towards a leadership position

Scope of Philips EcoVision5 program



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**Figure 9: Hierarchy of Sustainability KPIs, 2010/11**

With the “Leadership KPIs” the first priority in the Philips Management Agenda “Implement strategy” was measured, while the “Key Performance Indicators” the other two priorities “Accelerate Change” and “Drive Performance” were qualified and quantified.

Historically the Philips sustainability efforts were first made transparent via the operations related performance indicators like water or energy usage in production: bottom level. With increasing sophistication the current key performance indicators were added: middle level, while the top level with the L-KPIs forms the latest step of the development. Importantly this process was additive – it extended the range of indicators used rather than replacing those at lower level.

### **Communication, capacity development and knowledge management**

Telling the Philips innovation story to the outside world was deeply intertwined with all corporate and business-related communications. Information was shared via the internet, press conferences, articles in relevant media, participation in fairs and conferences, yearly stakeholder events like the CRE, Simplicity events, etc.

The model differed with the sustainability theme: here two main communication routes towards the outside world were in place in 2006: the Philips Sustainability website and the Sustainability Report. The former was directly accessible via the Philips Corporate home page and a broad variety of information was available. More detailed information, especially introducing standard tools, measures and procedures, was available on the Philips intranet. Some Philips business units and functions had a specific intranet site that could be accessed via the Corporate Sustainability Site but there was no consistency, and not all functions and businesses were present.

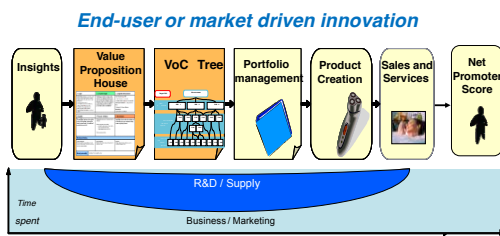
A second impactful way to communicate sustainability and share knowledge was the Sustainability Report. Complementary information to the report was given on the inter(a)net.

A third channel was to add sustainability building blocks to existing core curriculum innovation training in areas like technology management or project management.

Internal innovation and sustainability communication was organized along specific intranet sites, monthly or weekly newsletters and via a variety of group or town meetings. A specialty for Philips Research was a weekly knowledge sharing “studium generale” session. Research colleagues of all organisational levels shared their innovation results, while at the same time practicing to communicate highly specialized expert knowledge in a language that was understandable to a broad innovation public. These lectures were video-taped and shared globally via the intranet and were a great means to “set the theme”. One example on how the idea of sustainable innovation was introduced is shown here:

PHILIPS

What have we learned in innovation?



Innovation is most successful when market insights (unmet clinical needs) and technology are combined

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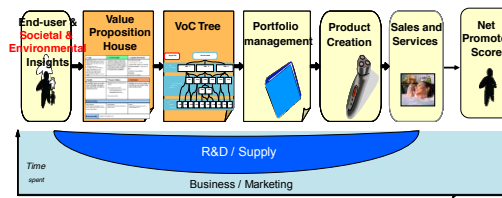
Corporate Technologies & Philips Research - DS, 3 February 2009

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PHILIPS

What have we learned in innovation?

*Beyond End-user or market driven innovation to sustainable innovation*



Sustainable innovation will be most successful when market, societal & environmental insights (unmet clinical /healthcare system needs) and technology are combined

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Corporate Technologies & Philips Research - DS, 3 February 2009

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Figure 10: development beyond end-user driven innovation to sustainable innovation

In view of operations optimization this is a good example of how to augment existing communications processes and tools by adding new dimensions, comparable to the example of the product definition in figure 5. The processes to execute though will be more complex, thus fall under the category of organisational transformation.

#### 4. Lessons linked to operational optimization

This section shares some reflections from the core team about how to manage the implementation of change at the operational optimization level (although they are also relevant for implementation of innovation with high levels of change around organizational transformation and systems building innovation)

##### a) Slow down in order to speed up / laying a solid foundation...

Both: innovation and sustainability are buzz words often used with many different meanings. It is very useful to spend some time to LISTEN to how these words are used in your environment: is innovation still mainly technology driven? Is it also associated with new ways to serve customers, organise the logistics or even a new business model? What is meant when

colleagues and stakeholders use the word sustainability? Do they talk about complying to environmental law and regulation, respect employees rights and health and safety standards? What is associated with Corporate Social Responsibility (CSR)? How does that relate to the global and sustainability national debate and related headlines in public media?

In the Philips context The value framework (developed by Stuart Hart ) proved to be a very powerful mapping tool to develop a healthy level of “self-consciousness” of the present status quo. It then also opened the “development-space” for sustainability driven innovation. Sustainable innovation eventually requires fundamental (social system) changes, that no organisational unit, independent of how powerful and big it might be, will be able to create on its own. Therefore it is useful to - from the very start of the conscious journey – build a solid foundation (e.g. in the form of a standard presentation or small positioning paper) about core themes such as:

- What is sustainable development? (the legacy of the concept & related policies & law)
- Where do we come from in this area? (the company legacy )
- How do we already contribute to sustainable development?
- What can we do next? (concrete next steps)
- Why do we do it? (individual and shared understanding of sustainability, long term perspective)

Giving such a foundation document a nice design is as important as the consistent use of the same simple language with a few clear visuals in many different situations.

### **b) It is a long journey towards life...**

It is human nature means it is rare that people change their minds in a flash. Change is challenging and often seen as threatening so bringing people along at a pace which allows them to let go of old (and reliable) ways of framing the world will be important. Taking on a new vision needs to be seen as a learning process. Managing sustainable innovation as a phased journey – and using a map of the phases to guide the process – is critical. Most people learn by doing and experiencing rather than by listening and thinking. And learning needs personal energy and commitment, time and preferably an emotionally safe environment, in which it is allowed to express fear; in which there is support of others to grow beyond it. Everybody has personal experiences with both: incremental learning, e.g. learning to play the piano or practicing some sports and disruptive changes, e.g. at the end of school, when a child is born, a relative or friend has died. Life is a good teacher for developing resilience to cope with new situations. It’s a question of personal condition, attitude and worldview, how one judges a specific situation, if it becomes an opportunity or a threat. The beauty of sustainable innovation is that it invites everybody and every organisation to (re-)define their purpose and find and materialize new ways that create conditions conducive to life.

### **c) The green-washing dilemma**

Modern quality management (alongside environmental, labour and customer protection legislation) have educated most western companies to implement sustainability related business instruments like product life-cycle assessment procedures, ethics commissions and

health and safety standards. Due to increasing energy and material cost incremental innovation projects often aim to optimize energy and resource efficiency, thus creating a double (a financial and environmental) win. Sometimes these types of innovations are “retro-fitted” and taken as concrete examples to explain sustainable innovation or resulting products are communicated as “green products”. This happens since most people need something “tangible” to understand and believe in an abstract concept like sustainable innovation. On the other hand many employees and external stakeholders are sceptical when small incremental changes are communicated as contribution to sustainable development. They experience it as “green-washing” normal business practice. An important role of innovation and sustainability management is to balance the deeply conflicting needs of the “sustainability new-comers”, for whom the topic is new and needs a lot of concrete explanation and time to grow into the topic, and those of the “sustainability conscious” who often demand radical changes immediately and push for speed of implementation. It can be very useful to ask the second group to come up with creative ideas to speed up the grow-in learning process of the first.

#### **d) Inner wisdom liberates collective intelligence**

“Life creates conditions conducive to life”. This is one of the key insights the biomimicry community is building on. What does that mean for sustainable innovation? Humans are living beings, manifestations of life. And humans have the amazing nature of being curious. They can discover, understand and (re-)apply the learned about what is supportive to their lives in their environment. Their social / societal development is an evolution of different ways to balance own and common interest. However, the enormous speed of last century’s technology driven progress in human development mainly happened applying scientific knowledge to improve the ways fundamental human needs like: nutrition, health, protection, status/self-expression are served. In a consequence since 1900 the world population exploded, the average age of a human more doubled etc.

There is another amazing ability humans can develop: the ability of self-reflection. This enables us to improve quickly through learning out of failure. It also is a powerful way to connect with the deeper wisdom of life, the own intuition that is the only means humans have to navigate complex, uncertain and unknown situations; those situations that have not been captured and coded by people’s cognitive system, since they did not experience it yet. Innovation and sustainability managers can and should make space for their employees to connect to their inner selves and inner wisdom. This can e.g. be done by a conscious set up of meetings with opening and closing rituals, framing the rational/factual agenda. A lot can be learned here from expertise around “highly performing teams”. Since sustainable innovation topics are inherently “life-supporting” it should be easy to create a shared intention around the common goal with most participants. The main challenge to manage is the “egos” that pop up naturally every now and then, especially in times of pressure and crises. Special attention should be put on building a conflict culture acknowledging diversity and inclusion, thus liberating collective intelligence.



## The Author

### **Dr. Dorothea Ernst** (previously Dr. Dorothea Seebode)

Dr. Dorothea Ernst is an independent Sustainable Innovation expert.

Between April 2006 and July 2011 she was Senior Director Sustainability at Philips Research and Corporate Technologies. In strong cooperation with the Philips Corporate Sustainability Office and the Philips Sectors – Healthcare, Consumer Lifestyle and Lighting - she works globally on exploring and implementing sustainability as business and innovation driver. She represented Philips in the Vision 2050 project of the World Business Council for Sustainable Development (WBCSD), where she also led the work stream on Health & Wellbeing.

Before that she worked for 10 years at Philips Lighting. There she first worked for 6 years in traditional innovation roles like project management in R&D, internal consulting and technology management; later she shaped and pioneered newly installed processes and positions in vision and strategy development, new business creation and strategic marketing. In this time she developed a strong and practical expertise in radical innovation. She was the project manager of Think the Lighting Future and head of the Atmosphere Provider Program<sup>12</sup>.

Ms. Ernst holds a PhD in Physics from the Technical University in Aachen (RWTH Aachen), Germany. Since 2007 she is a LEAD fellow, since its founding in 2009 a steering group member of the Green Economy Coalition. Since 2011 she serves on the steering team of the Exeter Sustainable Innovation Lab.

## The Alignment Partner

### **Simon Braaksma**

More than 15 years ago Simon joined Philips. Leveraging his strong financial knowledge and experience in 2009 he joined the Corporate Sustainability Office with the main responsibility to facilitate the integration of the formerly discrete Philips sustainability report into the Annual Financial, Social and Environmental Report.<sup>13</sup>

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<sup>12</sup> A case study about this work can be found here [http://www.managing-innovation.com/case\\_studies/Radical%20Innovation%20at%20Philips%20Lighting%201%20June%202009.pdf](http://www.managing-innovation.com/case_studies/Radical%20Innovation%20at%20Philips%20Lighting%201%20June%202009.pdf)

<sup>13</sup> See also <http://www.youtube.com/watch?v=CC2K5y-AF1Y>