Chapter 6
Outlook: Sustainability – What Does the Future Hold?

This book has attempted to help the reader prepare for the future – to come up with better products, to adapt the way we do business, and to incorporate a way of thinking that will facilitate tomorrow's success.

But what will the future bring? Certainly a question that is difficult to answer.

6.1 Upcoming Challenges

If we look at the current and projected trends laid out in the previous chapters, we can see some developments that are foreseeable. There are at least three main challenges companies will have to deal with:

- Climate issues: How to reduce greenhouse gas emissions?
- Energy issues: How to reduce energy consumption and how to become independent from fossil-based energy supply?
- Resource issues: How to manage resources, how to design and run smart resource cycles?

Some specific examples:

– Water-intensive business models will increasingly need to focus on minimizing their consumption patterns.
– We can no longer continue to use such a significant amount of fossil-based energy. Every step to increase energy independence is a worthy investment that will also help secure a company's business future.
– Finding ways to keep resources in circulation will be a key challenge to master (e.g. through establishing take-back systems for products to reuse parts and components).
– The carbon footprint of products will become more and more important. While we can already see some efforts in calculating and communicating the carbon

footprint of products, we can easily foresee a time in the near future when this instrument becomes really important. It will most likely be used as a tool to not only improve products by reducing the carbon footprint but also through communicating it as a competitive advantage to more and more environmentally aware markets.

These challenges are already in sight but there will certainly be even more issues that will demand attention.

6.2   Consequences

From an understanding of the upcoming challenges, there are some consequences one can foresee. Preparing to deal with these consequences will take the form of guiding principles that will be used to help companies make informed decisions. The following consequences or principles can be seen:

- Low energy
  Implement energy efficiency in products, processes, and facilities.
- Low carbon
  Reduce the carbon footprint of products, processes, and facilities. Develop and use renewable energy sources.
- Low distance
  Decentralize the value chain of the product and reduce dependency on centralized suppliers or on extensive transportation.
- Low pollution and waste
  Avoid pollution and generation of waste – waste is an indicator of inefficiency.

6.3   Conclusions

Product sustainability and Ecodesign should be understood as an ongoing process, always setting new targets to achieve. The systematic approach described in this book should help integrate new thinking into management systems and prepare the company for more stringent environmental requirements over time. Reduction targets for products will become higher and new regulations, lack of resources or new energy crises can be expected. But the company, the business model and finally the products can be prepared for these changes. In this book we have tried to demonstrate that there may be different pathways to becoming an environmental champion. There are options for what might best fit the culture of each company. We have proposed tools to help companies apply more systematic approaches, taking into account upcoming standardization and regulations. However, when it comes to the

details some things will change and become more precise over time, such as with product carbon footprint (PCF) or with the Ecodesign directive.

In the future, the Ecodesign directive requirements will regulate the environmental impacts of nearly all products. As a result, Ecodesign directive was one of the more important subjects dealt with. Complying with the Ecodesign directive criteria will also help prepare for the CE mark requirements. But one should not be limited to the existing Ecodesign directive requirements! In the future, these will become only the basic requirements.

The fundamental philosophy should be that, aside from all of the directives and regulations, innovation, creativity, and flexibility is required for product design. The ability to innovate is the most important cornerstone in solving the environmental problems of the future.

We described an *action plan* for the conversion of a company to a "green" one. As sustainability problems occur everywhere, this change of culture will be demanded by customers and employees alike.

Marketing of environmental aspects is often a challenging subject for a company. The most effective environmental marketing is based on trust. The public is frequently skeptical about environmental claims that lack the support of third-party verification and that may be either incomplete or irrelevant. Companies that follow the necessary environmental marketing principles take a long-term view and do not look only at short-term gains or advantages. The old adage of "say it simple and say it often" is probably reasonable advice, provided that the communication is underpinned with the necessary principles. Tools are available to help companies with this type of environmental marketing.

Many ECODESIGN rules are also available. Choose those rules that best fit the products and culture of your company. An additional benefit is that many if not all of these rules generate cost savings. The important elements are simplified product structure, reduced number of parts, life cycle considerations, and the ability to create innovation leaps.

Production can also not stay as it has been: Energy reduction is required, old product production lines have to be substituted by ones more environmentally benign. The trend is to know completely which substances are used and what is supplied to customers.

Management plays the most important role in the introduction of Ecodesign. Is there a systematic approach? Are ambitious targets set? Is there a review of progress? How is success measured? Several proposals were made in this book and it will be interesting to see what will be really successful worldwide.

Some *examples* were provided for the practical assessment of the Ecodesign directive requirements, PCF, and for the presentation of some practical design principles. Please look at the many tools added – especially in the *checklists*, which should help you to find your own way of managing and implementing ECODESIGN.

What cannot be solved with Sustainability or Ecodesign procedures are political decisions. During times of financial crises, political decision-makers are often not

the most fearless, even though these times of crisis are also often the most opportune to effect major change. In the Chinese alphabet, the character for crisis and chance is the same. It is simply a matter of what view one takes.

The chances are there to leave old paradigms behind and to start a new way of doing business, profiting from less energy and less resource consumption, while providing products of excellent environmental performance. The markets are becoming more and more receptive.

The combined activities of gaining independence from fossil-based energy and reducing the environmental impact of products can be also seen as a "job engine" for the future.

In today's world, we can already examine the life cycle of any product and take into account the services and added value related to the product. The logical next step would be the application of the systems in which the products are applied. If such a view is complete, one could generate value by establishing take back systems.

For the future, whole systems where products are applied will need to be considered. At the moment, a system like the "internet" is a sum or a collection of many individual hardware products usually only developed for special purposes such as printing and connected by software for another special task called communication. If these very complex systems and their consequences can be better described, it should be possible to develop much more integrated hardware products *and* through that, saving considerably more resources than looking at the product in isolation.

Besides the lack of Ecodesign rules for such complex structures, new environmental management systems are required for more systematic control of environmental aspects. One example for such an environmental management task will be to limit the tremendous increase of energy consumption of a system like "Internet".

In the future, business will most likely be more about creating value for customers rather than selling pieces of hardware. Nevertheless, products will remain important. How to better manage the process of developing and marketing products with better environmental performance was the task of this book.

We would like to thank you for reading "ECODESIGN – the competitive advantage". We certainly hope that one or more of the various concepts, processes and ideas will inspire you to take action in your own company and to have *Ecodesign become your competitive advantage*.