

# Staying power on two legs

Industrial research as the link between market and technology

Friedrich Pinnekamp

Today, there are more scientists at work around the world than ever before. These scientists are better informed and more up-to-date, with new ideas and innovations being generated at an exponential rate. Fostering collaborative partnerships in scientific research has emerged as a critical imperative to sustain this innovation process and to transfer great ideas into great inventions for the good of society. That is why industrial research organizations should not only stand with one foot on the customers' premises but equally as important, the other must stand on the university campus.



The ultimate goal of university and industry co-operation is to advance the frontiers of knowledge and incorporate that knowledge into new products, processes, and services. With many of the challenges facing modern society, more scientific and technologically driven innovations are needed to provide the tools required to help ensure a better future for all [1].

Reaping the benefits of knowledge and turning them into jobs and prosperity, however, is not just a question of research and research policy. It is about the conditions for creating enterprises and how to promote contact between researchers and entrepreneurs.

In the long run, only more scientific and technologically driven innovations will enable enterprises to compete successfully on international markets. Therefore companies should strive to integrate university research collaborations into their product and service development process.

During the last decade, this principle has become more attractive for researchers in industry and ABB is proud to be among the forerunners. Indeed ABB's co-operation with universities all over the world has a long tradition. The company has working contacts with more than 50 universities in the US, Europe and Asia, many

of which are internationally renowned as the best in their fields of research. A brief summary of six of these universities is given in the [Factbox](#).

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By actively promoting the path to "open innovation" ABB is not only adding cut-

## Collaboration gateway



**Factbox** Some of the universities with which ABB has working contracts

### **Carnegie Mellon University, Pittsburgh**

Carnegie Mellon is world renowned for its programs in computer science. Together with IBM, it pioneered the famous "Andrew File System". Michael "Fuzzy" Mauldin developed the revolutionary search engine "Lycos". In addition, Carnegie Mellon faculty and Sony are working with the company's AIBO robots and other initiatives to bring robots to life in the human environment as companions, helpers, and assistants. The College of Engineering, in particular the Department of Electrical and Computer Engineering, is consistently ranked among the best in the world.

### **RWTH Aachen University**

RWTH Aachen in Germany is perceived as a leading university in energy research, power system and engineering processing, materials science research and production technology, to mention a few areas only. Because of these competencies, RWTH is working together with industry to develop, for example, physical models and simulation tools, and long-term studies related to the future power system structure in Germany.

### **Chalmers University of Technology**

Chalmers has a broad expertise in many fields, among them the areas of combustion and catalysis, vehicle electronics and automotive safety, and design and dynamics. The Alliance for Global Sustainability (AGS) is a unique, international partnership between industry and four of the world's leading science and technology universities. The research teams have acquired new information about critical sustainability issues in the areas of energy and climate, mobility, urban systems, water and agriculture, cleaner technologies and communications.

### **ETH, Zürich**

Ongoing material research is conducted together with major Swiss and international companies from the following industries: pharmaceuticals; engineering; computer hardware; energy; materials; specialty chemicals; food; biomedical implants; and diagnostics sectors. Research in energy related questions as well as on automation technologies is also part of the spectrum.

### **Imperial College (IC), London**

IC is noted for its expertise in information processing and management; systems research; aeronautics; structures and materials. Scientists working in energy research collaborate with many companies, for example, with Shell in exploration, production and processing with the aspect of sustainability in focus.

### **Tsinghua University, Beijing**

Tsinghua plays an important role in the Chinese ambition of technology innovation. Over the past number of years, the university has been working hard to engage itself in international R&D collaborations with leading companies and leverage its limited resources to conduct leading-edge R&D, for example in in the areas of generation, transmission and distribution. Tsinghua is working together with ABB on interconnectivity issues related to China's regional networks.

ting edge technology to its products, but it is also attracting the best talents from the universities to its own R&D organization. At the same time this helps the universities find research areas that are beneficial for society. Such intense co-operation between industry and academia can only speed up the innovation process and contribute to growth in all parts of the world.

Partner universities in the US, Europe and Asia work closely with ABB's re-

search centers around the world to develop, for example, new manufacturing processes, and to carry out power systems and advanced materials research. These collaborations also cover wireless networking, control systems, man-machine interfaces and much more.

For ABB the development of relationships with leading universities is a key element in its global R&D strategy. This mutual exchange of ideas and information gives ABB access to the

latest developments in emerging technologies, helping it to develop competitive solutions for the benefit of its customers and society at large.

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### **Reference**

[1] Leffler, N., Koerbaeher, C., University co-operation, *ABB Review* 2/2005, pp. 22–28.