

# Shortening Innovation Cycles

Dr. Karl-Peter Merz, member of the Corporate Management Committee, and Dr. Ulrich Ackermann, head of the Opto-Electronics Strategic Business Unit, on the history and opportunities of Schott's new start-up companies in the data/communication sector.

## *Why is Schott actively engaged in telecommunications and data communication?*

**Dr. Merz:** It's a high-growth market for future technologies. It's driven by the booming Internet, which demands ever-increasing speed for the transport of enormous quantities of data. Innovation cycles are extremely short, with data quantities doubling every nine months. Schott has now expanded its activities by developing the components and technologies that are critical for the "tuning" of optical cables.

## *What is Schott's product roster?*

**Dr. Ackermann:** We are focused on key components for increasingly complex optical signal transmission. For example, we produce high-performance high-density optical interconnects for systems and network providers, optical interference filters to multiply transmission capacity, and semiconductor laser diodes for components known as VCSEL's (Vertical Cavity Surface-Emitting Lasers), that have an enormously high light impulse frequency of over 10 gigabits per second for high-speed data transmission.

*Dr. Ulrich Ackermann:*

*"We supply high-performance components at low prices and are focusing our activities on the next "all-optical" network generation."*

## *What Schott components are already on the market?*

**Dr. Ackermann:** The development phases for our interference filters for DWDM systems and the flexible optical cabling systems known as "Optical Shuffles" have now been completed and the products are in production. We also supply the market with fiber optic components and glass-to-metal seals for opto-electronic applications.

## *Who are your customers?*

**Dr. Merz:** Depending on the product, they are manufacturers of modules and subsystems, which in turn are utilized for servers, routers and control boxes by network suppliers such as Cisco Systems, Lucent or Nortel.

## *How do you rate Schott's prospects in this dynamic industry?*

**Dr. Ackermann:** Promising. With the key technologies VCSEL and PICVD layering, Schott has a considerable competitive edge. In addition, of course, we benefit from our core area

of expertise, namely special glass materials. The metrological infrastructure of our research center enables us to use precision instruments for optical analysis of the materials in use.

## *How does the customer benefit?*

**Dr. Merz:** Schott is an expert partner for development. We can expand our technological basis to develop customer-specific subsystems and systems. You could say that we offer application engineering and act as enablers.



*Can you describe this more closely?*

**Dr. Ackermann:** We produce only a small number of standard products. Our future activities will focus on customized products that are high-performance, high-precision, compact, easy-to-use and reasonably priced.

In addition, our focus is on the "photonics age" and the next network generation, which will be "all-optical networks". In these networks, all communication will be on a purely optical rather than electronic basis, which will enable network output to soar. Schott has developed fanouts for the "all-optical" networks. These are high-precision optical fiber connections with over 1000 individual fibers, each positioned to a degree of precision of +/- one micrometer. This enables us to supply our customers now with the answers to future transmission needs.

*What does Schott plan to invest in data communication?*

**Dr. Merz:** In the next three years, nine-digit euro investments are planned, proving that Schott is not only concerned with products, but also with creating new fields of business.

*Where will the focus of your operations be?*

**Dr. Merz:** In the US and Europe. Our technological base is in Mainz. This is where our fiber optics business unit and central research division are located.

The primary market for components is in the US, where a start-up company, Schott Communications Technologies, has taken over responsibility for the majority of our future data communication activities.

*Is production in Asia a viable medium-term option?*

**Dr. Ackermann:** That depends on our customers. If they open up there, which is probable given the enormous market volume at stake, then we'll join them.

*How do you rate the prospects for success?*

**Dr. Merz:** We anticipate growth rates for components well above 50 percent over the next three years.

*Are you planning any takeovers?*

**Dr. Merz:** Not at present. However, our start-up companies have the option of an IPO at a later date. That would enable them to forge partnerships in new markets and enter into takeover bids.

*What will the next steps be?*

**Dr. Ackermann:** First, Schott will expand its existing potential with the target of increasing the value added by Schott. After establishing a firm market base, our next step will be to optimize the coordination of expertise in individual operations and to gain a strong IP (Intellectual Property) position.

*How will consumers benefit?*

**Dr. Merz:** From faster and higher-performance Internet and intranet applications without the "world wide wait" and computer crashes. Schott supplies components that are critical in this respect, and is able not only to keep up with short innovation cycles – but also to steer the pace of developments ■

*Dr. Karl-Peter Merz:*

*"Schott is an enabler and can expand its technological basis to develop customized components and modules."*