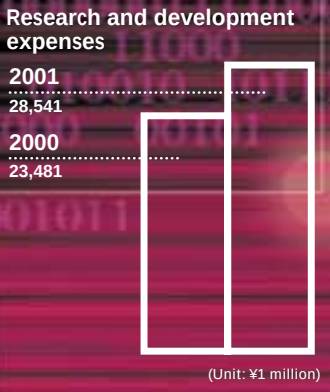
Research and Development

Investing Over 10% of Sales Annually to R&D Enables Timely Introductions of New Products

At Advantest, we realize that future profit hinges on the success of our research and development, which is why each year we allocate at least 10% of sales to R&D and strive to have new products account for more than 35% of total sales. Going forward, we will retain this commitment to R&D and develop products that anticipate future demand.



Semiconductor Test Systems

Developed an Array of New Products for Next-Generation Memory Chips and SoCs

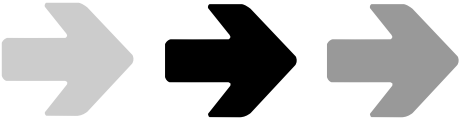
In fiscal 2000, we launched our T5592 Test System. The T5592 was designed for testing of high-speed memories such as Rambus DRAM and SRAM, and offers an ultra-fast testing speed of 1,066GHz, as well as the ability to test up to 64 chips simultaneously, which increases productivity and lowers the cost of testing. We also brought to market the T5586 — a high-throughput test system for double data rate SDRAMs, the chips favored for use as the main memory for future PCs.

For the SoC market, we developed and started shipments of our T6500 family of low-end test systems. By moving the T6500's testing functions from the system's main unit to its test head, we were able to reduce the size and power consumption of these test systems by 50% as compared to preceding models.

Finally, we also launched the T6371, which provides economical, high-throughput testing of LCD drivers, the chips that drive the flat panel displays used in personal computers and mobile phones.

To achieve a high testing throughput, chip manufacturers also need equally productive handlers — the machines that automatically load and sort mass-produced chips. In fiscal 2000, we continued to meet this challenge by bringing to market the M6541AD (simultaneous testing of 128 chips; throughput 6,000 chips/hr) and M6771A (throughput - 7,200 chips/hr) memory handlers, and the M4541A logic handler (simultaneous testing of four chips; throughput - 6,000 chips/hr).

In the future, we will continue to improve the performance of our test systems, by adapting front-end approaches to cutting test costs reducing their size, and giving them the ability to capitalize on the benefits of built-in self-test circuitry.



Electronic Measuring Instruments

Providing a Diverse Product Portfolio for New Communication Technologies

Advantest is proceeding with the development of new products for the communications market, which we believe continues to have plenty of upside.

For the mobile communications market, we launched the R3562 Test Source Unit, which evaluates the receiving characteristics of signals based on industry specifications for 3G wireless communications. We also developed a new modulation analysis option for our R3561 and R3273 Spectrum Analyzers, which are used to evaluate the characteristics of W-CDMA transmitted signals. And for measuring signals in the microwave to millimeter wave range, we developed the R3172 and R3182 Spectrum Analyzers.

In fiscal 2000, optical networks continued to develop rapidly as more fiber-optic cables were laid and broadband DWDM technology came into wider use. In response, we released our Q7770 Far-End Chromatic Dispersion Analyzer, which measures the dispersion of signals as they travel across long distances of fiber. We also developed our D3371 3.6GHz Transmission Analyzer for measuring optical modules and devices used in gigabit Ethernets, SONET, and SDH networks. And for the measuring of the wavelength dispersion, polarization mode dispersion, amplitude, and group delay characteristics of optical components, we brought to market the Q7760 Optical Network Analyzer.

Finally, through our alliance with Rohde & Schwarz of Germany, we are working to enter new, high-growth markets such as the one for Bluetooth-related testing.

Research and Development

F5112 E-beam Lithography System

T6500 Family of SoC Test Systems

D3371 3.6GHz Transmission Analyzer

Making Nanotechnology a Reality — Research on Electron Beam Lithography

To support the evolution toward chips with increasingly smaller feature sizes, in fiscal 2000 we released our F5112 Electron Beam Lithography System, a low-cost solution for R&D engineers that need to etch circuitry with line widths of 0.13-micron and below.

Throughout the world, research on nanotechnology — a futuristic way of creating chips at the atomic or molecular level — is gaining momentum as more and more governments assign this budding science top priority in their efforts to ensure their future economic competitiveness. Nanotechnology is of particular interest to the electronics industry because it promises to offer a quantum leap from current production methods. At Advantest, we are working to establish a strong presence in this market so that it can serve as a new, third source of revenue.

Advantest has already made forays into this market with the development of products such as our electron beam lithography systems and nanometer level measuring instruments. Building on these past achievements, we have started up a new division to increase our research on nanotechnology. In addition to semiconductors, this division will also conduct research to enable the continued miniaturization of magnetic heads and micro-electromechanic systems (MEMS) through the application of advanced lithography and pattern inspection technologies.

T5586 Memory Test System

Research and Development

R3182 Spectrum Analyzer

Research and Development Network

In July 2001, we opened up a new R&D center — the Advantest America Design Center — in Portland, Oregon. This is the second such facility that Advantest has established in the US and forms a new hub in the company's global R&D network. We also have three R&D centers in Japan, one each in Germany and France, and plan to establish another R&D center in Kitakyushu, Japan in June 2002. At these facilities, along with work to improve upon our current technologies and turn new innovations into marketable products, we also perform basic research that can lead to rapid expansion of the frontier of technology.

Advantest has striven hard to establish a multinational network of R&D centers, because we realize that the best way to foster technological ingenuity is to encourage the convergence of different cultures and scientific disciplines. A good example of this is the platform and software for our next-generation of test systems, which are being jointly developed by our engineers in Japan and the US. And to generate synergy between engineers with different technical backgrounds, in May 2001 we added a new, adjoining building to one of our R&D facilities in Japan, so that our R&D engineers for measuring instruments and test systems could be in walking distance from one another.