Toshiba Storage Products Contributing to Comfortable Lifestyles and Realization of Smart Communities

SATO Hiroyuki

Vice President, Storage Products Div.,
Semiconductor & Storage Products Co.

The trend toward digitization of information in society and the emergence of the Internet of Things (IoT) have been adding momentum to the information explosion in recent years. The volume of information produced every day is growing ever more rapidly. PCs and servers were previously the major driving force of the increase in data volume. However, now that cloud computing is commonplace, manufacturers are launching many products capable of instant access to cloud storage. For example, anyone who has a cloud-based smartphone or feature phone can dispatch information anytime, anywhere, and automobiles, home appliances, wearable devices and other IoT applications equipped with sensors can constantly generate information. While these products enhance the comfort and convenience of everyday life, they are generating information at an unprecedented rate. The amount of data generated globally is increasing at an annual rate of nearly 40 percent. It is physically impossible to keep all that data in storage. In practice, a lot of data is discarded as fast as it is generated. In these circumstances, a big challenge is to quickly process big data and extract information that is valuable to society and utilize it in real time. In response, new business models are emerging. Furthermore, it is equally important to conceive of reliable and efficient solutions for retaining valuable data, or data that may be a source of value in the future. It is no exaggeration to say that storage products that store big data are serving as a foundation for the entire society.

Toshiba has an unparalleled advantage in the storage business field in that it boasts over 40 years of experience in hard disk drives (HDDs) as well as outstanding expertise in NAND flash memory, which Toshiba was first in the world to develop. Solid-state drives (SSDs) and HDDs form the core of our storage business. The Special Reports introduce the technological trends in SSDs and HDDs as well as our initiatives for addressing today's challenges.

Two types of SSD consisting of NAND flash memory are presented: compact and low-power-consumption SSDs designed for mobile applications and high-performance SSDs designed for enterprise use whose performance and capacity can be tailored according to specific requirements. New technologies for two types of HDDs are also discussed: large-capacity HDDs for personal external storage and large-capacity HDDs for archiving applications at data centers. Additionally, the Special Reports cover several novel technologies such as a highly scalable drive called KVDrive that has been developed as a Web data storage solution and a data-centric architecture that is well suited for real-time processing of big data.

Toshiba will continually develop technologies to meet today's and future needs while contributing to the quality of life and the realization of smart communities by offering storage products necessary for a society increasingly reliant on big data.

Note:

This publication may include Toshiba's original estimation, and/or data based on Toshiba's evaluation.