

# Ubiquitous HDDs for Easy and Secure Access to Information



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HDD (hard disk drive) was developed about 50 years ago as an auxiliary storage for business-use computers. The growing rate of the recording density of an HDD has remained around the constant of Moore's Law. The added storage capacity has contributed to the popularization of computers. Moreover, due to the marvelous improvement in recording density, which makes current HDDs 1,000 times more powerful than the ones used in 1990, the HDD is expanding into applications in a wide range of CE (consumer electronics), such as home AV (audio-visual) equipment, mobile media players, digital cameras, and automobile electronics. If each user-friendly CE appliance has a local storage and a digital interface with interoperability, then completely new interactions between them can be expected to develop.

Many servers and client appliances with various functions are connected organically in our "ubiquitous information society." This enables easy and secure data access for use anytime, anywhere, by anyone. One of the most significant phenomena in this highly organized network is fusion between communications and broadcasting.

To facilitate this fusion, content piracy should be prevented, and content mining technologies should be developed.

At the Hitachi Group, we define ubiquitous HDD solutions as the core functions for HDDs, such as network accessibility, information security, and read/write optimization. We not only supply HDDs as component devices, but also provide a variety of software solutions for HDD system-integration. This special issue focuses on our middleware products to help customers maximize the full potential of HDDs. New content protection schemes and new content mining technologies for HDD products for CE are also introduced.

It has become increasingly important for us to realize that encounters with information must not only fit our personal needs but also prevent unexpected information in a way that fills us with surprise and delight. Although these solutions are only a small part of information and telecommunication technologies, I hope that these articles will help you understand the technologies required to use HDDs for CE applications in our ubiquitous information society.