

ハードウェアによるセキュリティの確立 ～ データ管理はソフトからハードの時代へ～

日本シーゲイト株式会社
代表取締役社長
小林 剛
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Theft and Data Loss is News

Losing data is no longer a private matter....

“Ameriprise Financial alerts more than 225,000 over data theft”

—DeluthNewsTribune.com, January 2006

“Stolen computers contain data on 185,000 patients”

—Computerworld, April 2005

“Frantic search for lost data at Los Alamos”

—San Francisco Chronicle, July 2004

“Buyers Scour eBay For Data-Rich Hard Drives”

—InformationWeek, January 2006

“Bank tape lost with data on 90,000 customers ”

—Computerworld, January 2006

The financial impact ...

Securing Storage is Key to a Digital Work

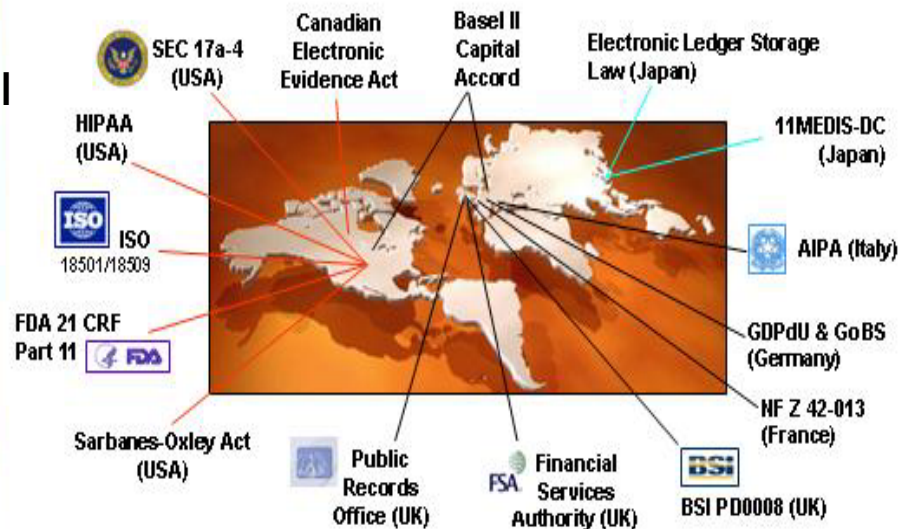
- **Mobility of data increases risks**

- Critical data stored throughout the enterprise
- Vulnerabilities with data at rest

- **Compliance with data security and privacy legislation is a corporate priority**

- Secure access to data is fundamental
- Secure disposal of electronic files ends the data lifecycle

Secure storage mitigates the risks in the evolving work environment



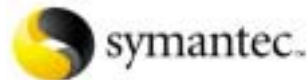
Securing Storage is Key to a Digital Life

- **Content providers need technology for new business models**
 - Protection of digital assets for new distribution models
- **Consumers want freedom and flexibility**
 - Content availability regardless of locality

Secure storage bridges the gap between content providers and consumers

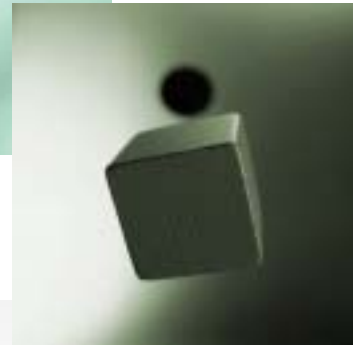


Many Approaches to Secure Storage



Technology issues

- **Most solutions don't address end point security**
- **Software security widely available but can be compromised**
- **Point solutions often aren't integrated**
- **Some solutions impact system performance**
- **Total cost of ownership can be daunting**



A New Approach: Drive-Level Security

- **Disc drives occupy a unique place in computer systems...it's where the data lives**
 - Drives contain the high-value content – financial data, digital multi-media content, personal data, etc.
- **Drives contain a secure and isolated compute environment... it's difficult to attack**
 - Independent data processing unit (no impact on performance)
 - Private code execution (no foreign applications allowed)
 - Hidden storage space (hidden tracks on media)
- **Drives can support value-added applications and services... it's a powerful processing machine**
 - 'End-point' solutions for access and authentication control
 - Secure erase and disposal
 - Secure content and application delivery solutions



Introducing DriveTrust by Seagate

- **Seagate DriveTrust technology is a drive-level security platform that simplifies and strengthens the protection of digital assets**
- **It's a portal to secure access, distribution and storage of digital information**
- **It's also a programming environment for integrating security-based software applications to further enhance drive security and user trust**



DriveTrust Technology Platform



Security technology built into the drive

- **Cryptographic Services** - Industry standard crypto functions including AES, SHA-1 hash, RSA, etc.
- **Secure Partitions** - Hidden partitions for keys and DriveTrust enabled applications
- **Security Firmware/Hardware** - Isolated computing environment managing security functions and performance
- **Trusted Send/Receive Commands** - Secure communication infrastructure

DriveTrust Applications

Standard DriveTrust Capabilities

- **Full Disc Encryption** - encryption with strong authentication
- **Drive Pairing** - “locks” a drive to a host system
- **Private Storage** - hidden storage available only to a trusted application
- **Secure Erase** - cryptographic erase or “digital shredding”

Software-enabled Applications

- **Key and Password Management** - management of large scale deployment of DriveTrust drives
- **Enhanced Authentication** - integration of biometrics, smart cards, tokens, etc.

Industry Leadership for Secure Storage



- Driving an open, standards-based architecture
 - Seagate serves on the TCG Board and leads the Storage Work Group
 - All disc drive manufacturers participating
- Working with other standards bodies
 - Flexible architecture for other storage standards groups
 - Influencing change for security requirements



Momentum 5400 FDE.2

with DriveTrust Security Technology



**Best in Class Data Security
for Lost or Stolen Laptops.**

State of the Security Notebook Market

- ***Desktop PCs are being replaced by notebooks***
 - Notebook is growing three times faster than desktop
 - Increased mobile use means more and more need for security
- ***Government regulations requiring encryption:***
 - Many states and countries enacting new regulations requiring data security
 - Seagate has huge opportunity to help these entities secure critical and confidential data seamlessly with FDE.2
- ***Seagate is the first mover in the HDD industry***
 - Momentus 5400 FDE.2 is Seagate's 2nd generation of security drives

Types of Data Encryption

Encryption is a mathematical process of obscuring data to make it unintelligible without knowledge of a secret (often called a key)



Two general types of data encryption: file and full disc encryption

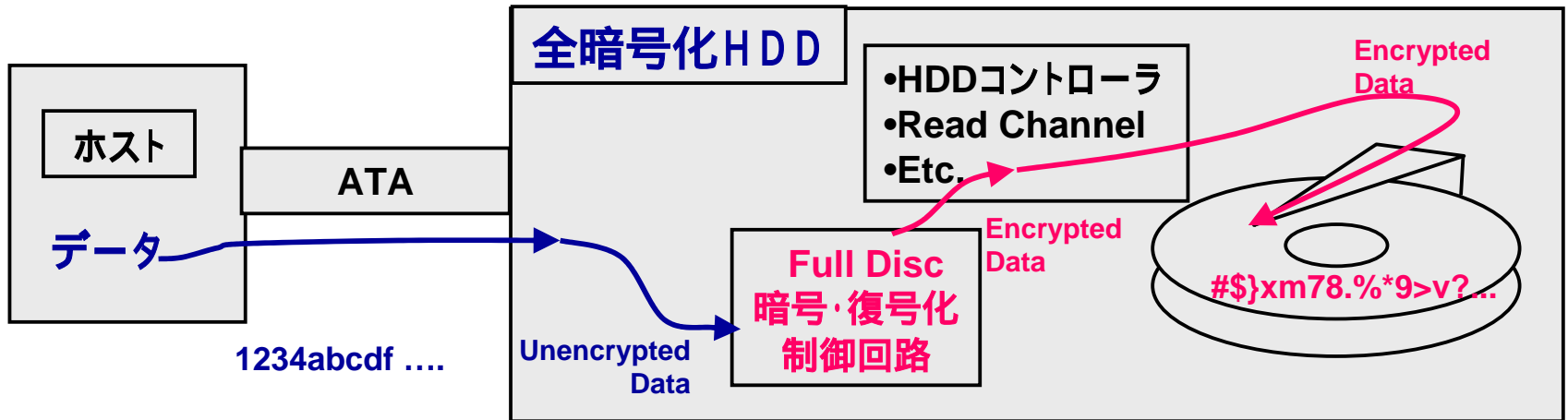
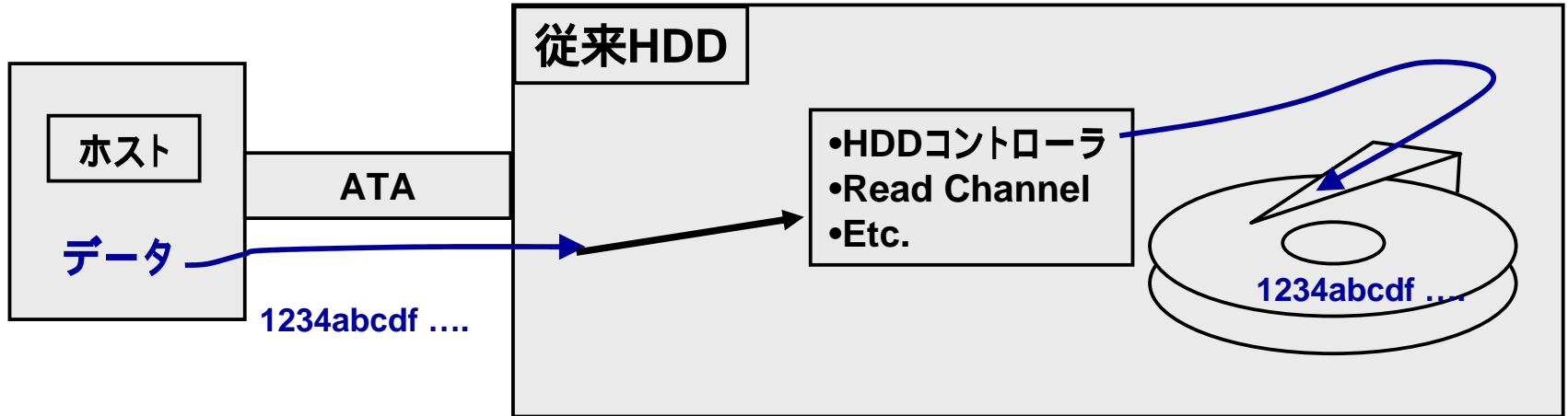
1. File Encryption

- Uses a key to encrypt individual files
 - Doesn't encrypt temporary files created by programs – many applications will create a temporary clear text copy of any file they are editing
 - Requires care by user to ensure appropriate data is encrypted

2. Full Disc Encryption

- Uses a key to encrypt all data on a drive
 - To users this looks like a regular drive
 - All files, temporary or regular are encrypted
 - User does not have to manage data – easy to use
- Without proper key, thief cannot recover data from encrypted files or the whole disc

Full Disc Encryption (全ディスク暗号化)



Momentum 5400 FDE.2 with DriveTrust

Strong hardware-based data protection preventing unauthorized access to data on lost or stolen laptops



- **Best in class protection for data @ rest – Far better than just software encryption**
- **Uses full disc encryption, pre-boot authentication, secure erase to quickly and easily secure your personal information**
- **The industry's only native 2.5" full disc encryption HDD**
- **Up to 160GB, SATA 1.5 Gb/s, AES 128 bit native encryption**

Why Don't Businesses Encrypt?

The primary reasons cited for not encrypting sensitive or confidential information according to the survey:

- **System Performance (69%)**
Software encryption is slower!
- **Complexity (44%)**
Software encryption IS NOT user friendly!
- **Cost (25%)**
Software encryption is EXPENSIVE.



The Cost of Data Breach

The Ponemon Institute's 2005 National Encryption Survey

Seagate FDE.2 is a Better Solution...

1. Preserves Full System Performance

- No performance impact on read/write speeds

2. Easy to Use and Strong

- Transparent to the end user and independent of the OS in ATA security mode
- Supports software for enhanced security features
 - Pre-boot access authentication in a password
 - Password management
 - Crypto erase

3. Cost-effective Best-in-Class Data Protection


- Software encryption: \$99 - \$250 per user
- FDE.2 price premium, a fraction of software cost
- Plus no patches, updates or upgrades required, reducing TCO

Additional Security Features with FDE.2

<i>Feature</i>	Benefit
DriveTrust Technology	<ul style="list-style-type: none">• Seagate's drive-level security technology that simplifies and strengthens the protection of digital assets
AES 128 bit encryption	<ul style="list-style-type: none">• Encryption standard by US Government – strong hardware based native protection
Pre-boot Authentication	<ul style="list-style-type: none">• Limited Data Access Until A User Has Been Authenticated
Crypto Erase	<ul style="list-style-type: none">• Fast & thorough drive repurposing or secure disposal• On-the-fly quick erase
Hashed passwords	<ul style="list-style-type: none">• Protected Passwords (not in the clear)
Password Emergency Recovery	<ul style="list-style-type: none">• Emergency recovery file on an external device that unlocks the drive
Authentication Management Tool	<ul style="list-style-type: none">• User interface that manages the authentication process and feature tools

Summary

- **Announce DriveTrust October 31, 2006 at SNW Orlando**
 - DriveTrust introduces a completely new way to secure data where it lives – on the hard disc drive
 - DriveTrust provides a robust platform for development and deployment of better security solutions
 - DriveTrust demonstrates Seagate's technology and industry leadership
- **Momentum 5400 FDE.2**
 - Best in class data security for lost or stolen laptops



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シーゲイト社について



Seagate: Disc Drive Category Leader

- **Seagate is the world's leading provider of hard disc drives**
 - Q2 FY2007*: 41M drives shipped; revenue of \$3.0B
- **Provides drives for Enterprise, Desktop, Mobile Computing and Consumer Electronics applications**
 - Share leader in Desktop, Enterprise and Consumer Electronics
 - 35% overall market share: highest in the industry
 - Broadest product offering in the industry – Largest customer base
- **Ownership and vertical integration of critical technologies: heads, media, motors, and printed circuit boards**
- **Approximately 54,355** employees worldwide**
- **Acquired Maxtor Corporation on May 19, 2006**
- ***Forbes Magazine* 2006 “Company of the Year”**

Seagate's Global Presence



- Drives and Components
- Regional HQ's and Sales

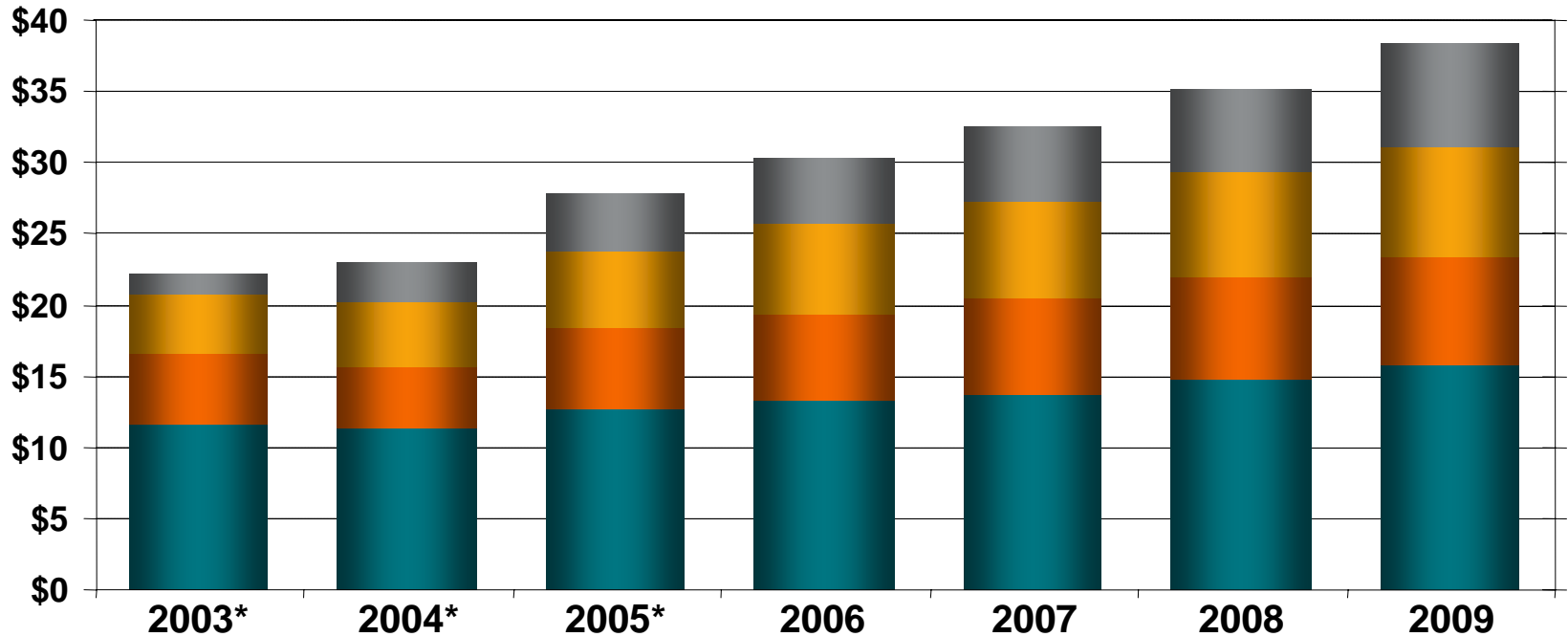
- Design
- Customer Support

Seagate Leadership Model

- **Technology Leadership**
 - Own and develop underlying technology
 - Industry-leading investment in R&D
- **Product Leadership**
 - Industry's broadest product line
- **Vertical Integration**
 - Own the key components that drive product strategy
- **Scale and Leverage**
 - World class manufacturing and flexible supply chain

Trends are Driving Revenue Growth

Billions of Dollars



Desktop Enterprise Notebook Consumer Electronics

*Actual