



Privacy and Security in an Era of Compaq *NonStop*TM Continuously Available Computing

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Compaq's Tandem Business Unit

A technology leader

- 30,000 partner service resources
- Business-critical solutions for uninterrupted business operations
- Among top 5 systems integrators worldwide
- Alliances with industry leaders
- 550 locations in 114 countries
- 2,200+ Microsoft® certified Windows NT® technicians
- 3,000+ UNIX system engineers
- 15,000+ Microsoft trained specialists
- Innovative service packages and service franchises
- 24-hour, 365-day support
- 61,000 employees



A technology leader

3,000 employees in the Bay Area

- ◆ Global enterprise solutions
- ◆ Headquarters for business-critical servers
- ◆ Corporate research
- ◆ High-availability manufacturing
- ◆ Sales and service



COMPAQ

mpaq.com

A community leader

A good neighbor at work and at play

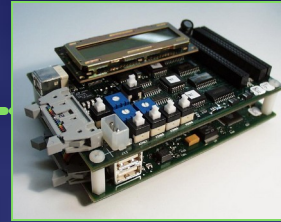
- ◆ The Tech Museum
- ◆ San Jose Sharks Foundation
- ◆ Second Harvest Food Bank
- ◆ Reading is Cool program
- ◆ City Year



Examples of Compaq's research



Micro clients
Multimedia in and out



Server appliances



Enterprise servers
Multimedia index

◆ Client end

- Wearable microdevices
- Wall-able macrodevices

◆ Server end

- Scalable systems
- Tools for managing floods of text and non-text information



Macro clients
Multimedia in and out

Compaq—a leader in trusted commerce

- ◆ Brokerages and investment banks
- ◆ Security and commodity exchanges
- ◆ Leading commercial banks



66% credit card transactions



75% EFT networks



95% trade transactions



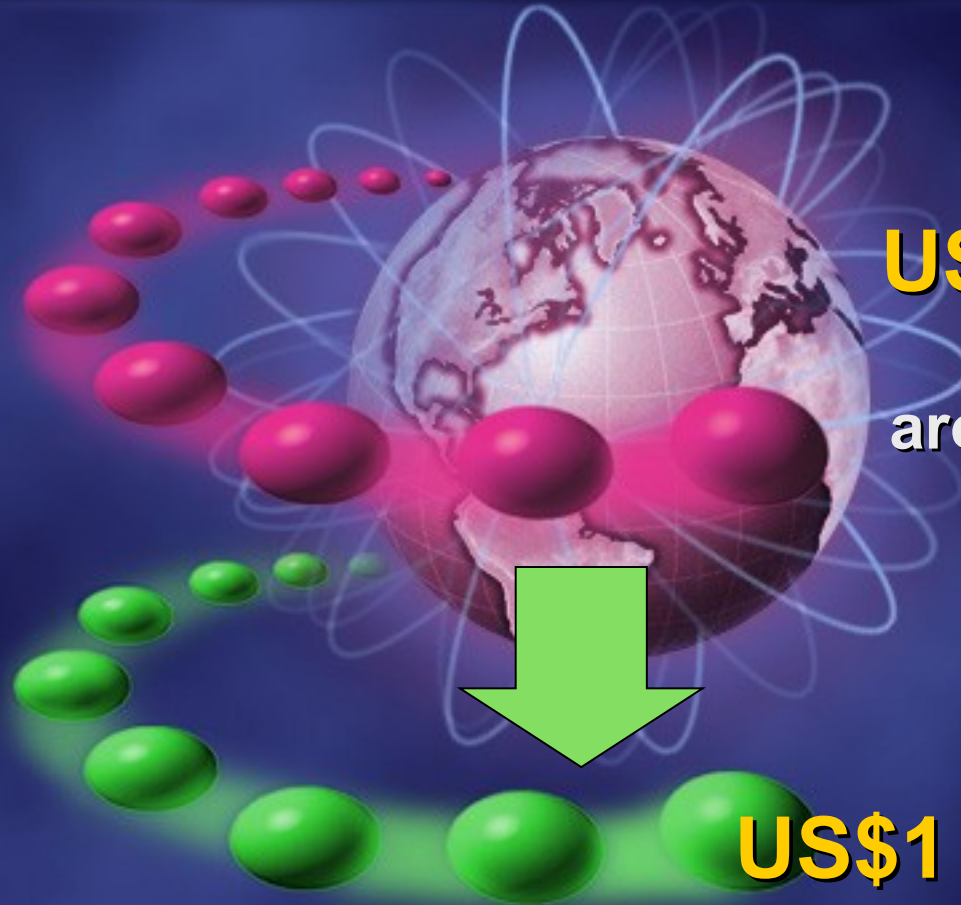
80% ATM transactions

Opportunities for Compaq *NonStop*[™] solutions in global e-business



US\$20 trillion
flows
around the globe
each day

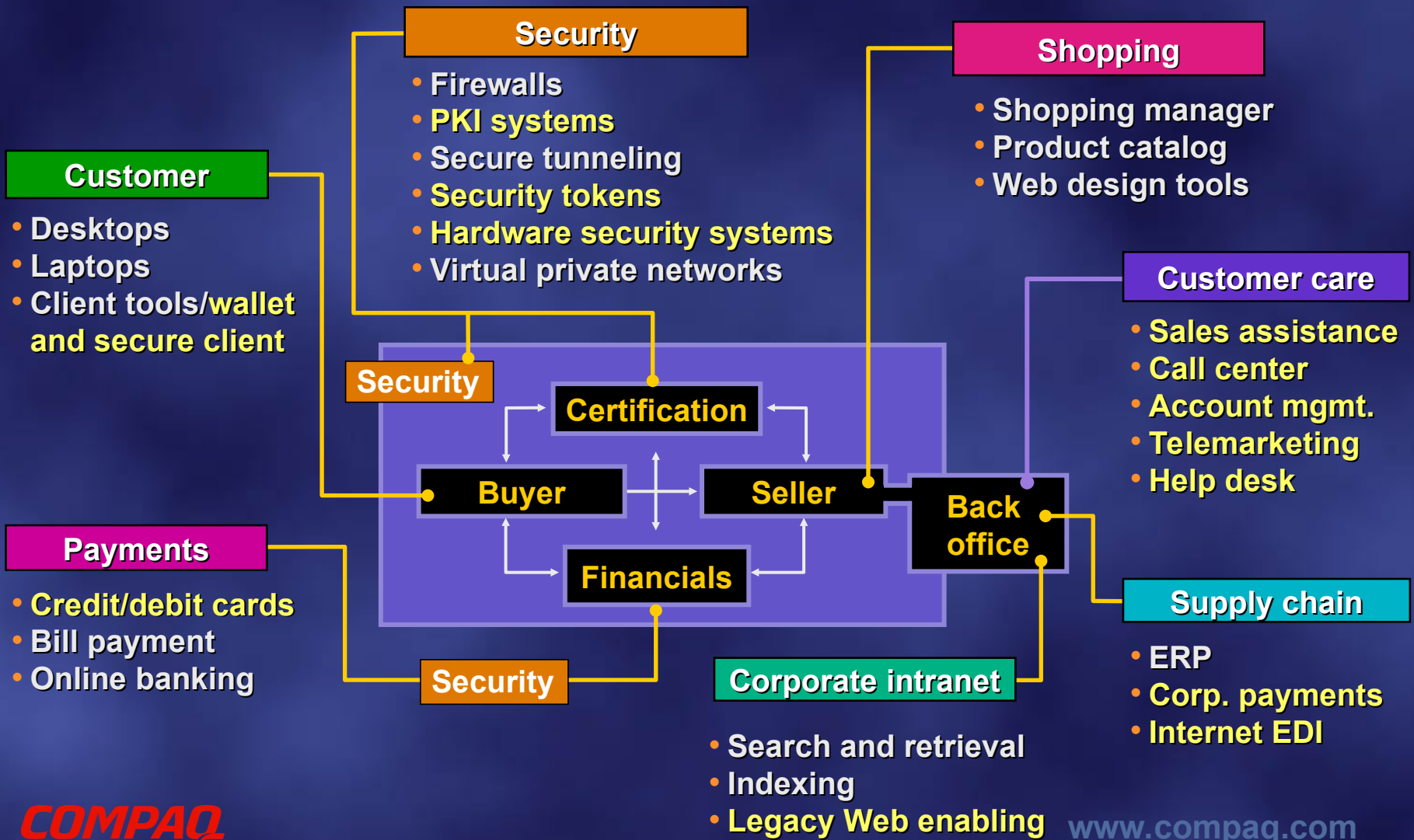
Opportunities for Compaq *NonStop*TM solutions in global e-business



US\$20 trillion
flows
around the globe
each day

Today only
US\$1 in \$300,000
flows via the Internet

New business model— from paper to bytes



Information management in the '90s

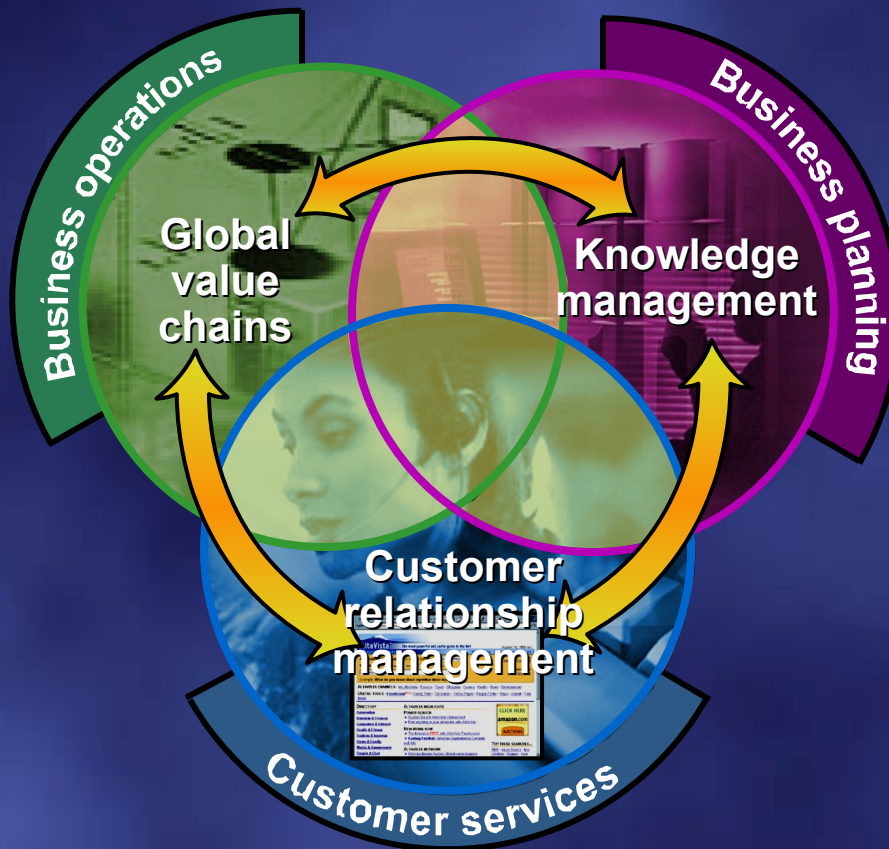
Characteristics

- ◆ High-growth online services
- ◆ Batched data movement
- ◆ Large amounts of replicated data
- ◆ Separated business functions
- ◆ Complex integration
- ◆ Limited growth
- ◆ Threatened availability



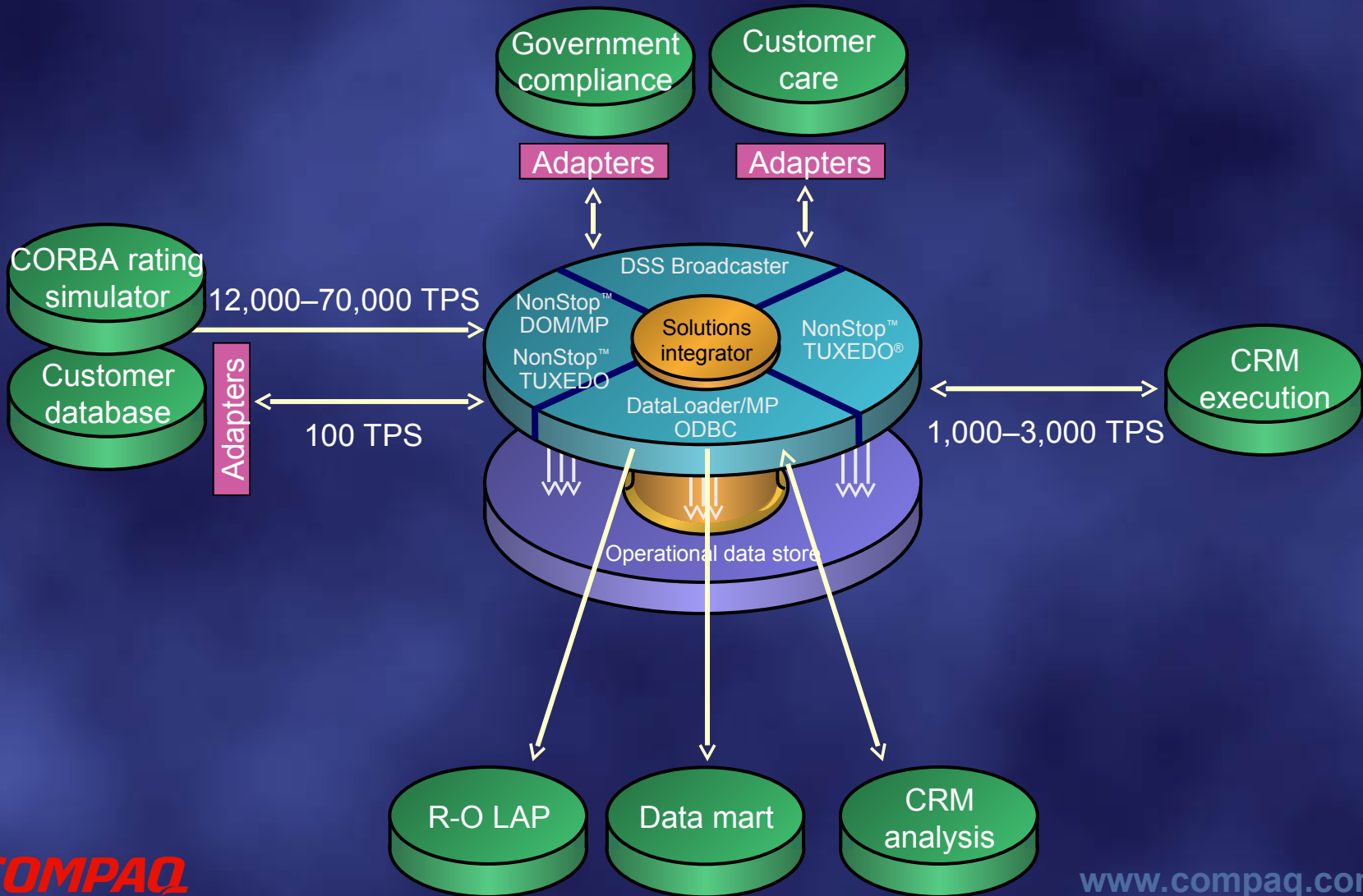
New information management structure

Zero Latency Enterprise—streamlining for e-business



- ◆ Integration
- ◆ Real-time response
- ◆ Supports data-intensive solutions
- ◆ Growing at Internet speed
- ◆ Proactive customer services

Enterprise application and data integration



Online identity crisis

Personalization vs. privacy

- ◆ Benefits
 - Essential loyalty tool
 - Private clickstream data
 - Unprecedented scope and velocity
- ◆ Downside risks
 - Inadequate privacy policies and guidelines
 - Unscrupulous re-marketing of private information



When does privacy become an issue?

- ◆ When disparate industries merge—and combine what they know about you
 - Banks, insurance companies, and brokerages
 - Telcos, ISPs, and cable providers
 - Healthcare institutions and HMOs



Privacy concerns

- ◆ Opt-in vs. opt-out for control of private information
- ◆ Banks...utilities... communication companies...
healthcare providers... retailers... government...

***ALL must voluntarily ask permission
from the consumer***

Security and 24 x 7 brand marketing

- ◆ Trust creation
- ◆ Customer confidence
- ◆ No disaster recovery plan for a security breach



Inadequate network security—the cost

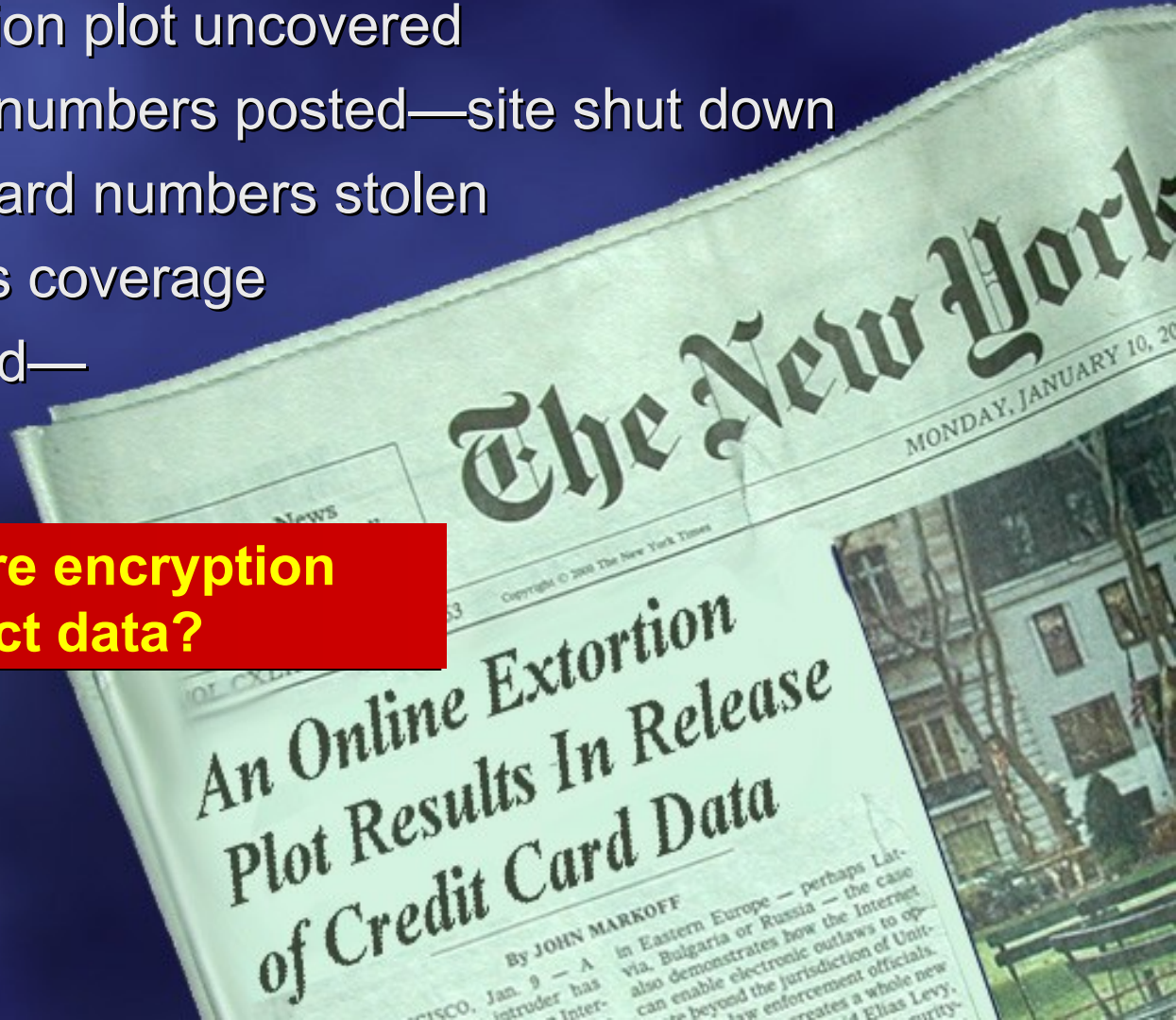
(\$US dollars)

Replacing stolen funds	\$1,000,000
Network downtime	96,000,000
Emergency audit	1,000,000
PR damage control	6,000,000
Increased fraud premiums	5,000,000
Loss of business	2,500,000
Total	\$ 111,500,000

Online extortion scheme makes news

- ◆ US\$100K extortion plot uncovered
- ◆ 25,000 account numbers posted—site shut down
- ◆ 300,000 credit card numbers stolen
- ◆ Front page news coverage
- ◆ Damage to brand—significant

Why was hardware encryption not used to protect data?



What do we mean by security?

End nodes: Tight authentication of machine and identity of individual, including integrity and nonrepudiation

Network: Privacy of communications including the ability to guarantee the integrity and authenticity of messages



How we authenticate

Proof of identity

Something you know: **PIN**

Something you have: **smart card**

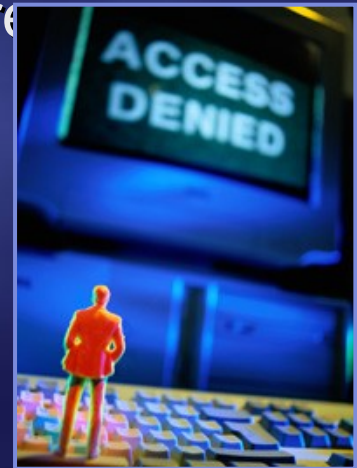
Something you are: **biometrics**



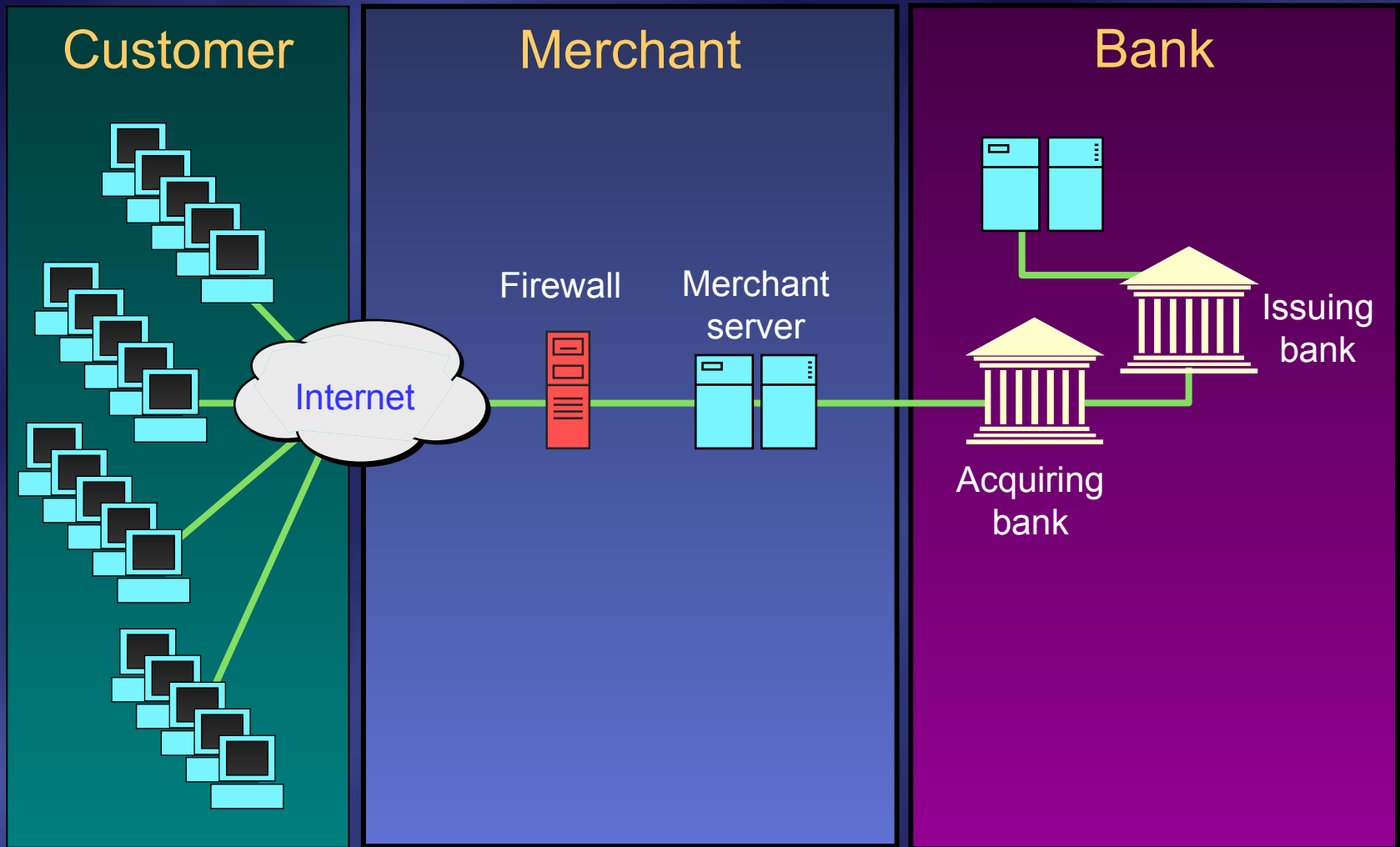
- ◆ Combining technologies provides increased security
 - Allows customers to design security systems according to needs
 - Customers can determine the level of security that they require

Today's password/PIN issues

- ◆ User IDs and passwords are cumbersome
 - Industry: 50 percent of help desk calls are password related
 - cost per call is between US\$35 and US\$75
 - Compaq: ~ 30% of help desk calls are password related
- ◆ Tradeoff between robust security and ease of management

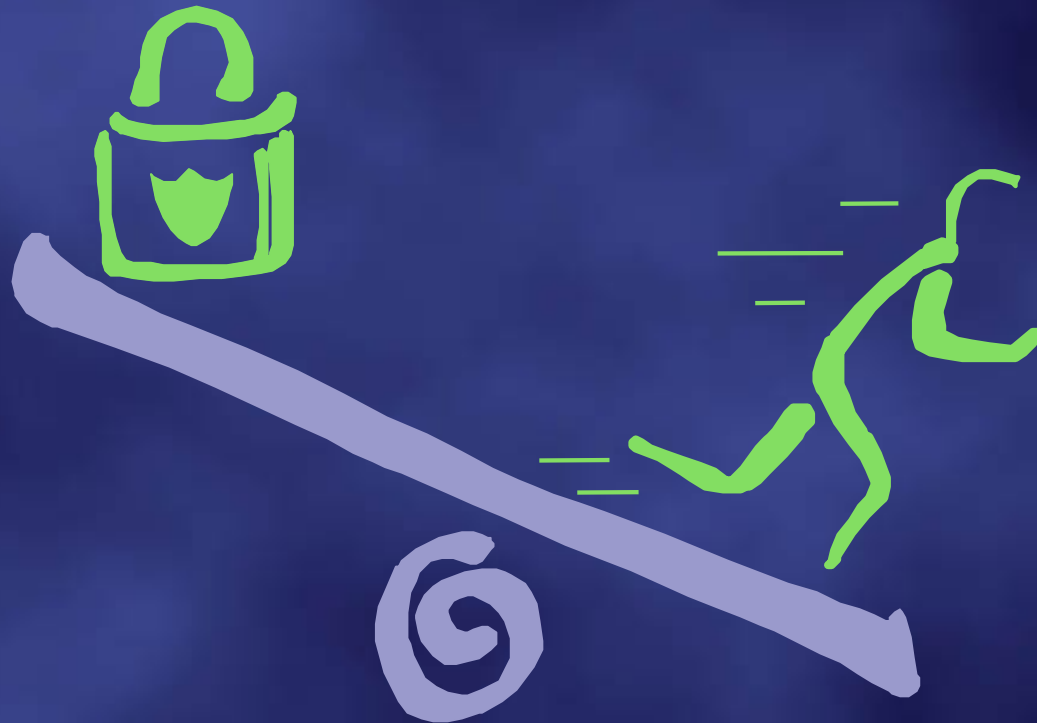


The next problem—performance



The performance/security trade-off

Enhance security



Sacrifice performance

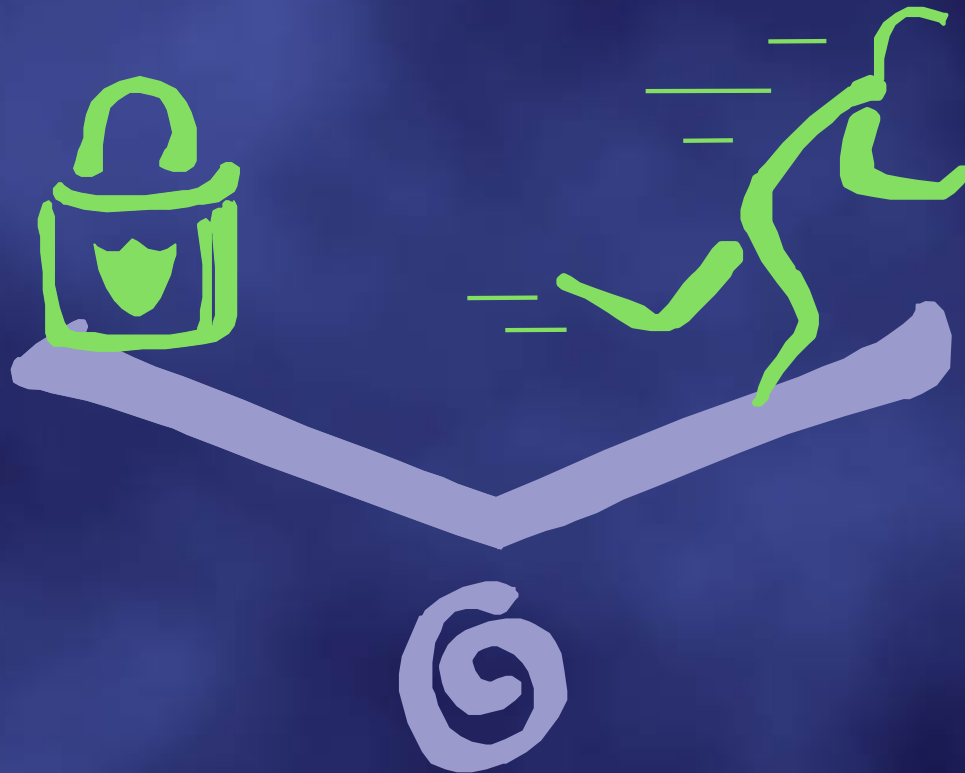
The performance/security trade-off

Enhance performance



Sacrifice security

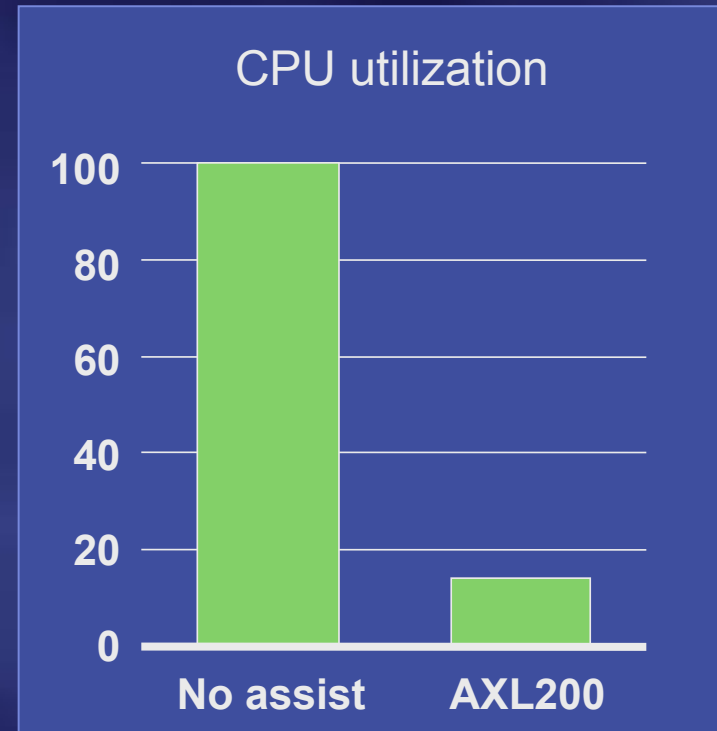
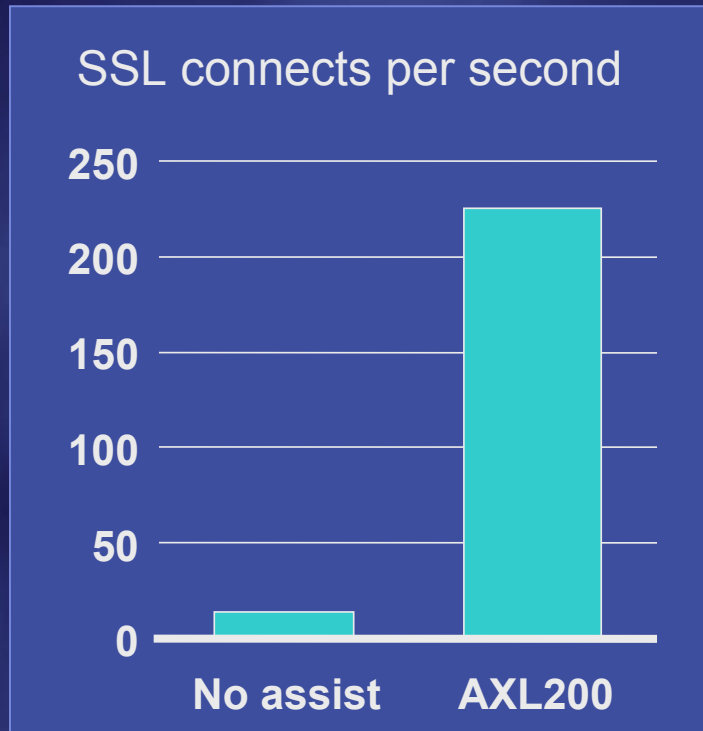
With *MultiPrime*[™] technology



Both security and performance are enhanced

MultiPrime™ technology from Compaq

Security plus performance



Sample accelerators (*Atalla* security products):

PayMaster, TrustMaster, WebSafe2, SignMaster, AXL200

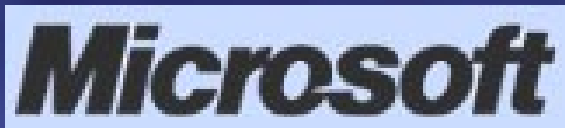
Constant Availability PKI Announcement

- ◆ Uses PKI technology to provide authentication, authorization, privacy, integrity, and non-repudiation for Automated Clearinghouse (ACH) transactions.
- ◆ Utilizes bank standard cryptographic algorithms, key and certificate management systems and business practices.
- ◆ Runs on NonStop Himalaya Servers for unmatched scalability, availability, and reliability
- ◆ Uses smartcards and biometrics to support three factor authentication

Major security partnerships



Stonebeat



Compaq's industry involvement

Creating a world of trust

- ◆ Americans for Computer Privacy (ACP)
- ◆ Trusted Computing Platform Alliance
- ◆ Online Privacy Association
- ◆ Electronic Frontier Foundation
- ◆ Trust-e
- ◆ CommerceNet
- ◆ X/Open



Next-generation vendor issues in security

- ◆ **Ubiquity:** Solutions need to span from handhelds to servers
- ◆ **Fault tolerance:** “Downed systems are closed stores”
- ◆ **Continuity:** Operating systems must provide security levels comparable to those of hardware
- ◆ **Monitoring:** Threats and threat models are still evolving
- ◆ **Change management:** Applications and hardware are constantly changing

Compaq offerings

- ◆ Highly available servers: *Compaq NonStop™ Himalaya* servers, AlphaServer Tru64, and *ProLiant* servers
- ◆ Security Enhancements for Windows NT®, Compaq Security Enhanced *VMS and Tru64* and Compaq *Tru64* UNIX® secure operating systems
- ◆ Compaq Professional Services
- ◆ Threat analysis services and training
- ◆ Expert services for general support and help desk

Privacy—lead by example

- ◆ Privacy statement
- ◆ Define personal information use
- ◆ Allow opt-in or opt-out
- ◆ Establish strict privacy policies—and follow them
- ◆ Protect your investment in your brand

Customers will reward those companies that respect and ensure their privacy

Conclusions

- ◆ Essential attributes of the 24 x 7 trusted brand
 - Security
 - Privacy
 - Authentication
 - Integrity
 - Assurance policies, products, procedures
- ◆ **The leaders in the Internet economy will be those that provide the highest level of privacy, security, and trust**

