



GOT SECURITY?

Security Considerations and Trends for Successful Internet Commerce

August 10, 1999

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<http://www.drqsf.com>



DRG Digital Resources Group

- ❖ Who we Are?
- ❖ What we Do?
- ❖ Why are we Qualified to Talk to you about e-Commerce Security?



Agenda

- 1. Growth of Internet Commerce**
- 2. Implications to Financial Industry**
- 3. How Security Impacts eCommerce**
- 4. Strategic Security Concerns**



eCommerce e-xplosion

- Telecommunications advances (Cable, ISDN, DSL). Infrastructure build-out
- Intranets and Extranets are Proliferating
- Companies are Realizing they must be on the Internet to Survive and Prosper
- Internet Commerce Revolution has Begun - Let the Games Begin !

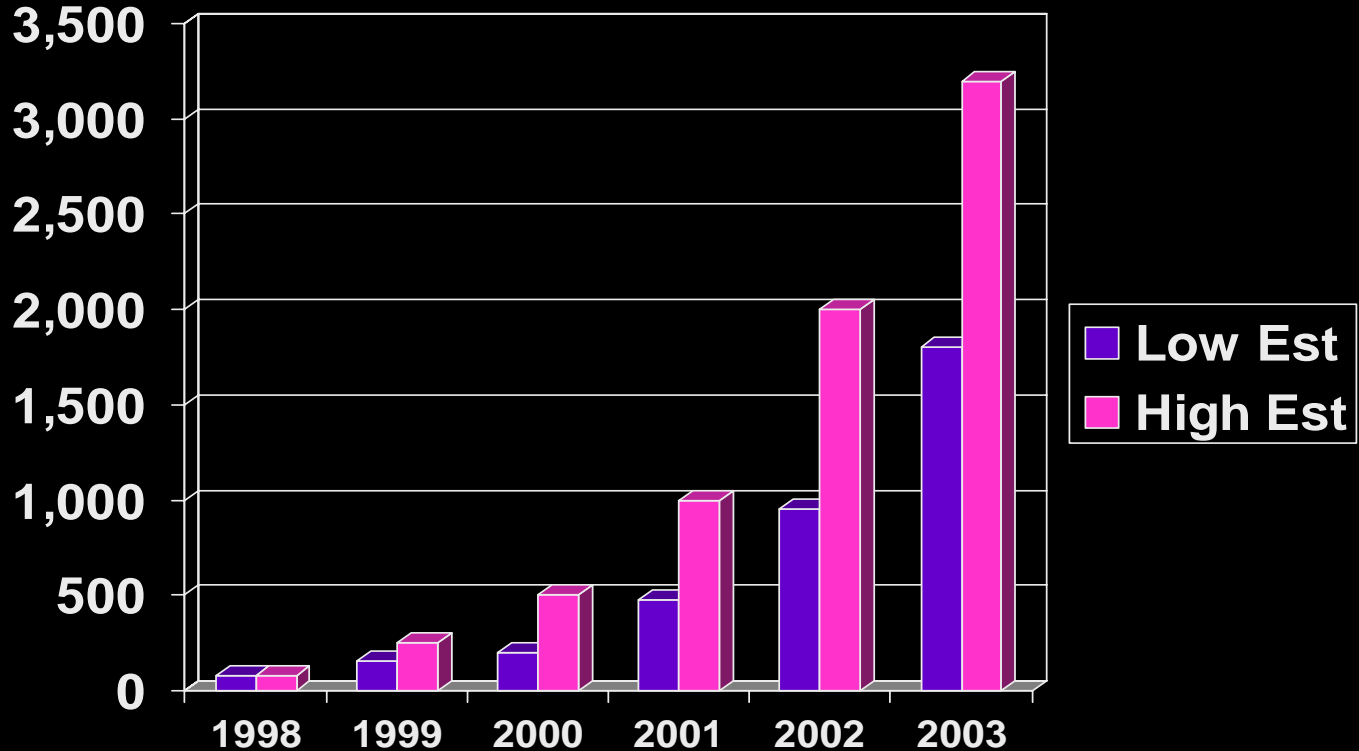


Internet e-volution

- ❖ **Net, Net, Net - - It's Everywhere**
- ❖ **Most Fundamental Restructuring of Business since Industrial Revolution**
- ❖ **Get Onboard !!**

eCommerce Growth Projections

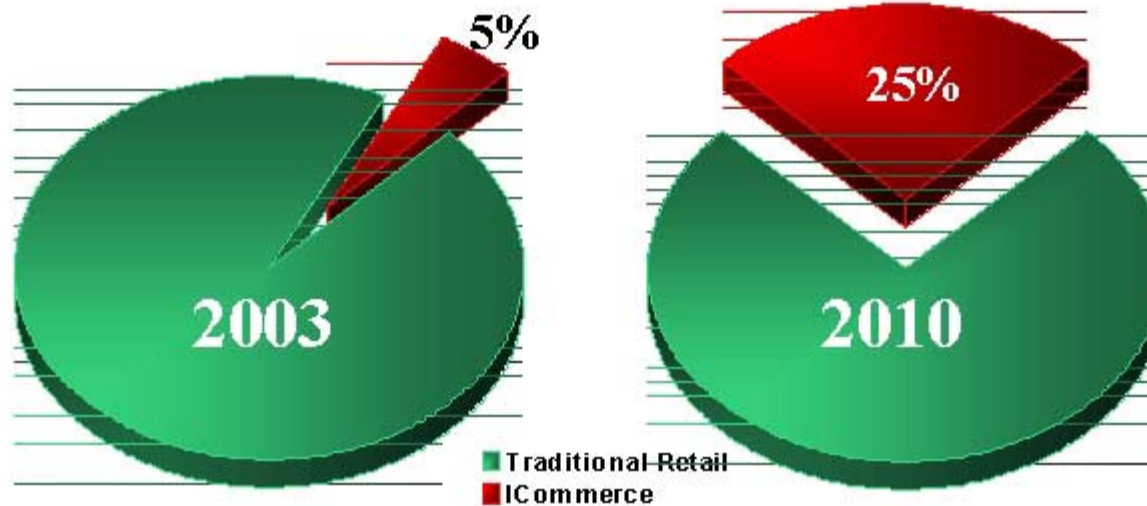
eCommerce
(\$ in Billions)



Source: Forrester
Research June 1999

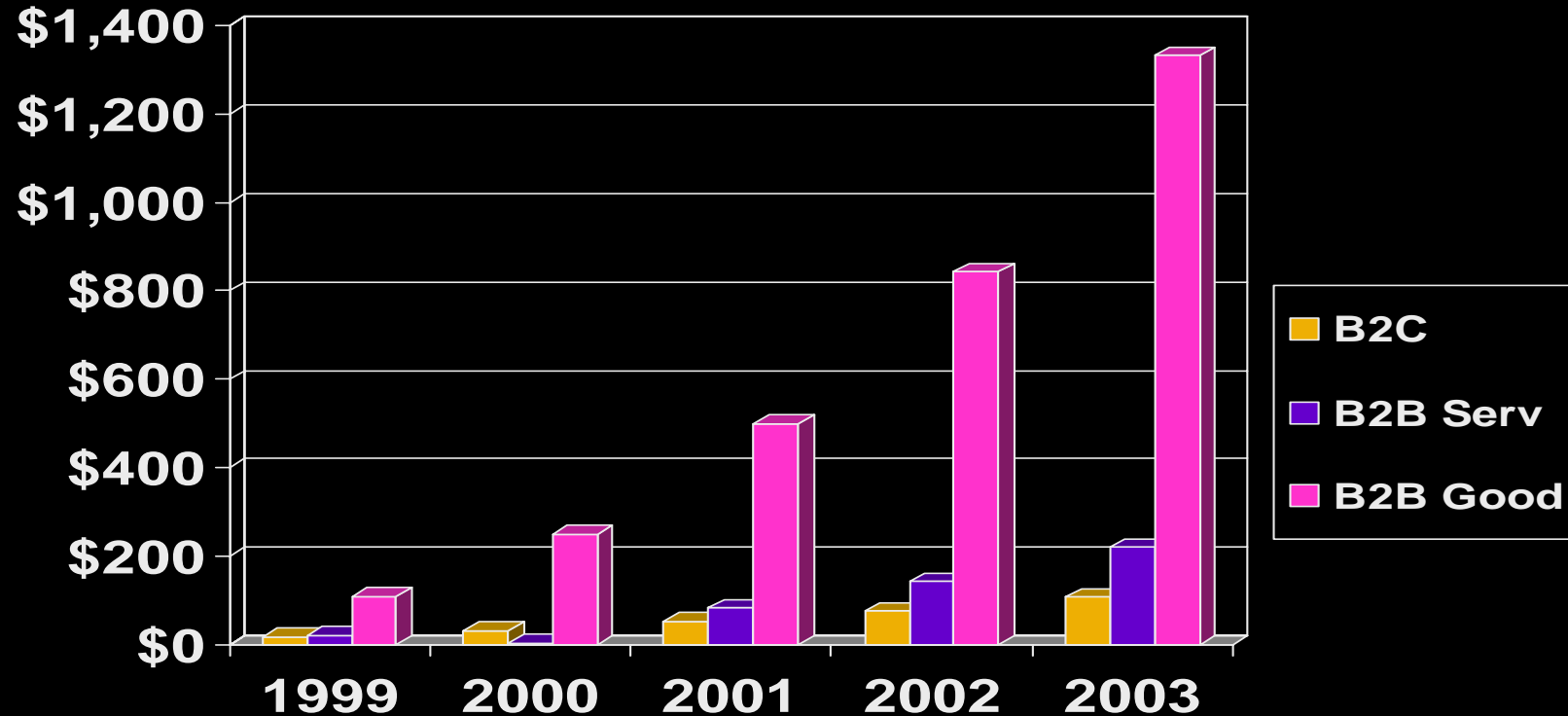
Internet Gaining on Traditional Channels

Global Internet Commerce



B2B Driving eCommerce

e-Commerce
(\$ in Billions)



Source: Forrester
Research June 1999



Brokerage Leads Financial Industry

Online Brokerage Accounts

Charles Schwab	2,200,000
Fidelity	2,000,000
E*Trade	675,000
DLJ Direct	520,000
Waterhouse Securities	500,000
Ameritrade	307,000
Green Line (Canada)	200,000
Quick & Reilly	135,000

PC and Internet, February 1999
Source: Company Reports

Bankers are Getting There

Online Banking Customers

Bank of America/NationsBank	1,000,000
Wells Fargo	800,000
Citibank	350,000
Bank Boston	343,000
Chase	300,000
CIBC	270,000
Toronto-Dominion	170,000
Royal Bank of Canada	150,000

PC and Internet, February 1999

Source: Faulkner & Gray's Directory of Home Banking and Online Financial Services

Internet Presenting Bankers New Challenges

Changing Demographics

	Under Age 40	Median House-hold Income	Four-year College Education	Investable Assets >\$250K
Inter net Banking	55%	\$63,900	56%	21%
Inter net Broker age	+50%	\$75,200	71%	34%
USA	45%	\$42,000	35%	N/A

Source: Forrester: Consumer & Technographics - August 1998

Major eCommerce Issues

Consumer

- ❖ Ease of use
- ❖ Speed
- ❖ Reliability
- ❖ Privacy
- ❖ Security

Business

- ❖ Trust
- ❖ Scalability
- ❖ Market Share
- ❖ Non-repudiation
- ❖ Security

Security

- ❖ Integrity
- ❖ Ease of Use
- ❖ Authentication
- ❖ Authorization
- ❖ Audit



What about Security?



Major Internet Security Issues

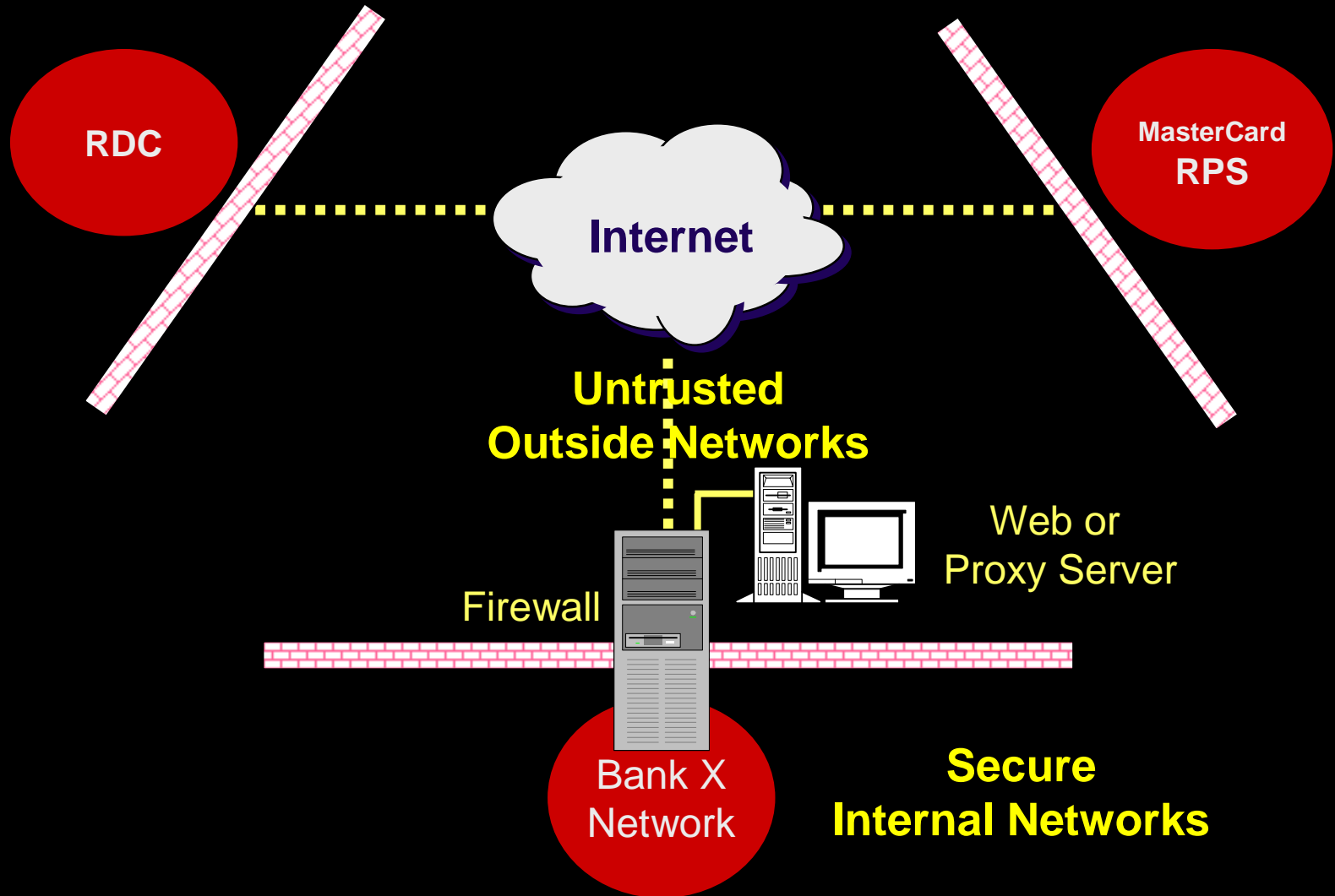
- ❖ Privacy
- ❖ Trust
- ❖ Message Integrity
- ❖ Authentication /Authorization
- ❖ Non-Repudiation



PRIVACY

- ❖ Evaluate Key Security and Risk Control Areas
- ❖ Encryption Technologies
- ❖ Firewalls and Routers
- ❖ Network Design and Security Monitoring

Securing Your Network





PRIVACY - Key Security & Risk Areas

- ❖ Website
- ❖ Browser (Client)
- ❖ Database
- ❖ Communications
- ❖ Host (Server)



PRIVACY - Key Security Risk Areas

- ❖ Your Network
- ❖ Your Vendor's Network
- ❖ Your Partner's Network
- ❖ Your Vendors Partners Network
- ❖ Your Partners' Partners Network

TRUST

- ❖ Policies
- ❖ Brand
- ❖ Logos and Privacy
- ❖ Equality - Level Playing Field

TRUST ??

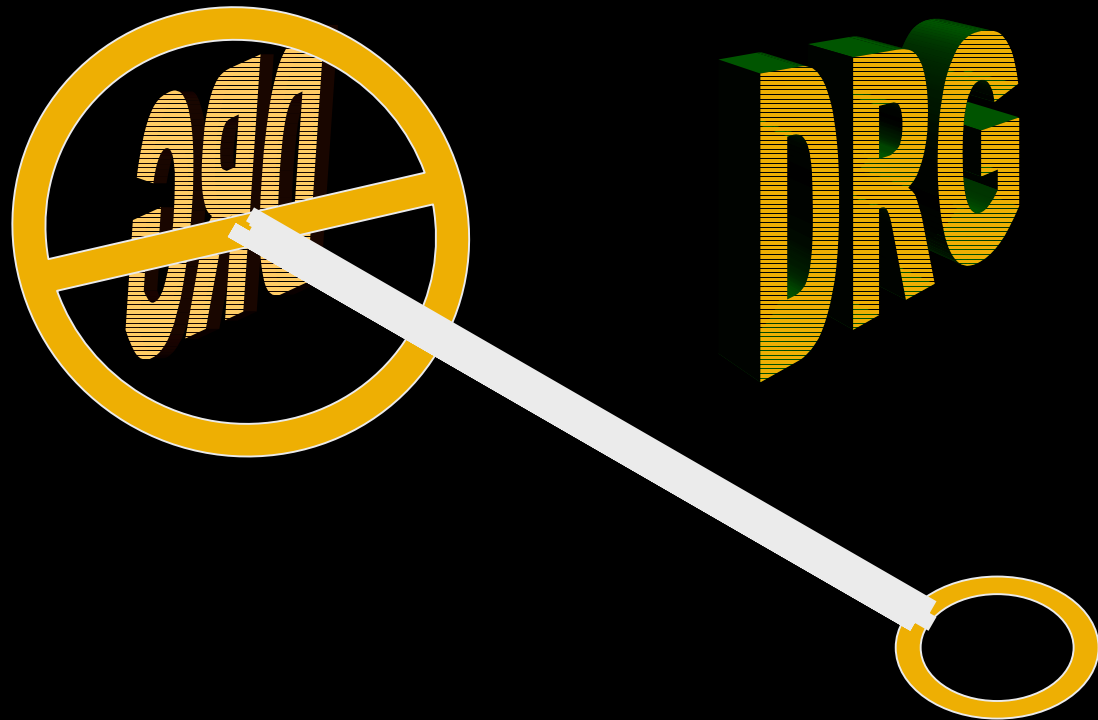


"On the Internet, nobody knows you're a dog."

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BRAND is still Powerful on the Net



Building Brand and eCommerce Trust



WELLS FARGO

Charles Schwab

UNITED

Bank of America

Fidelity Investments

we are citigroup

BANK ONE

WING

CHASE

Security Logos are Becoming Less Valuable !





Trust Is Key to ...

ALL TYPES OF INTERNET USERS

- Business to Business
- Business to Consumer
- Consumer to Consumer

ALL TYPES OF INTERNET ACTIVITIES

- Content Delivery (Newspapers, Information Exchange)
- Communications (Email, Contracts, etc.)
- Internet Commerce

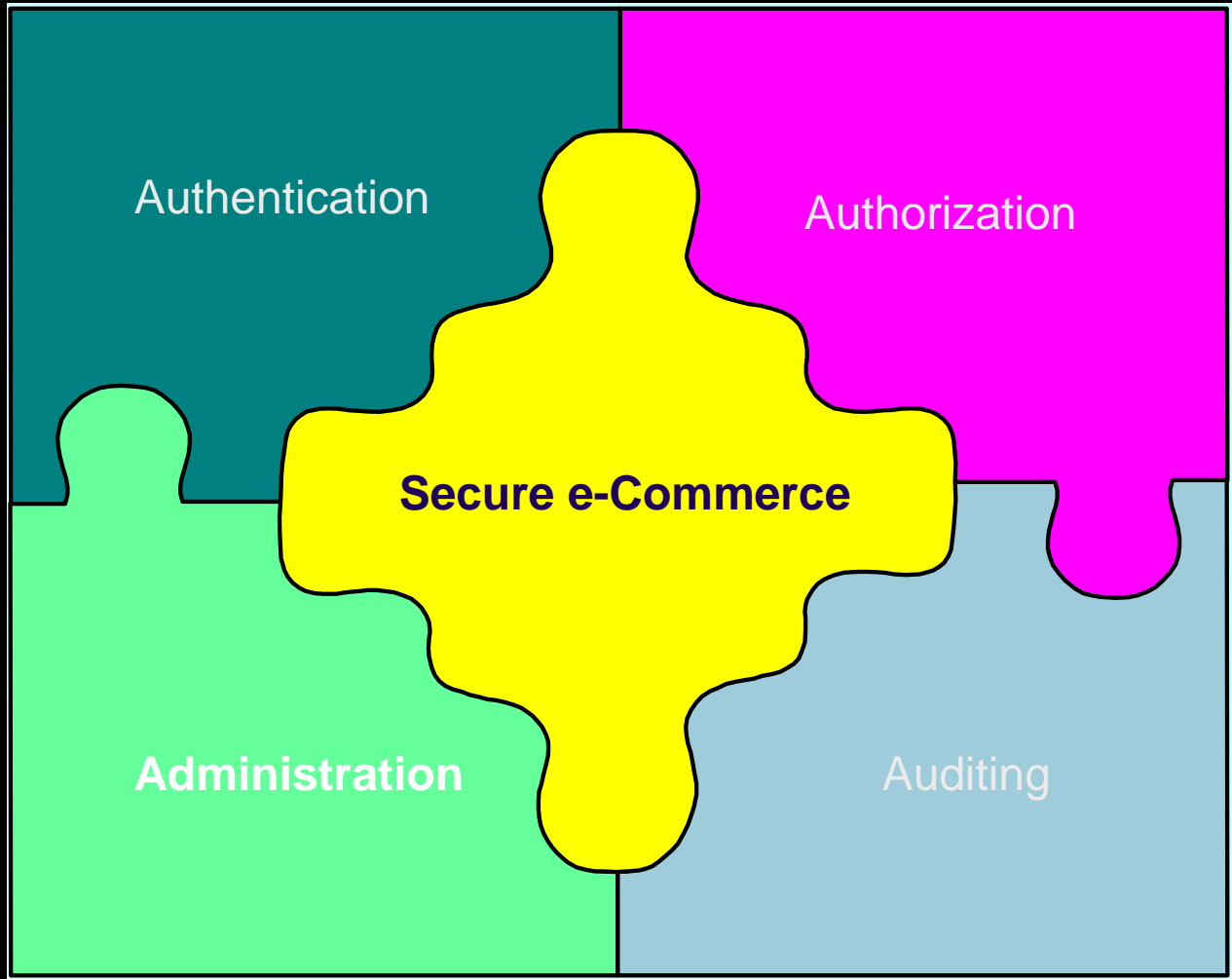


Message Integrity

DATA INTEGRITY: How You Know Your Message Has Not Been Tampered With?

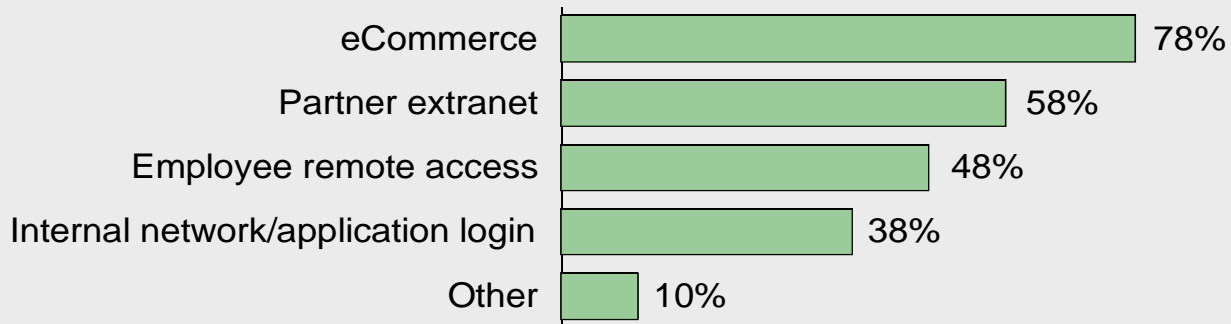
- Hashing Algorithms (SHA-x)
- Message Digests (MD-x)
- Digital Signing Messages

Authentication and Authorization



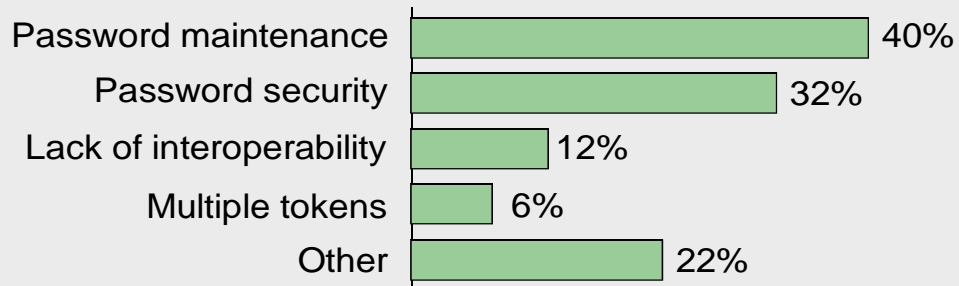
e-Valuating Your eCommerce Corporate Authentication Strategy

“What applications are causing you to re-evaluate your authentication strategy?”



Percent of 40 Global 2,500 companies interviewed who are re-evaluating authentication (multiple responses accepted)

“What are the most significant authentication issues you face today?”



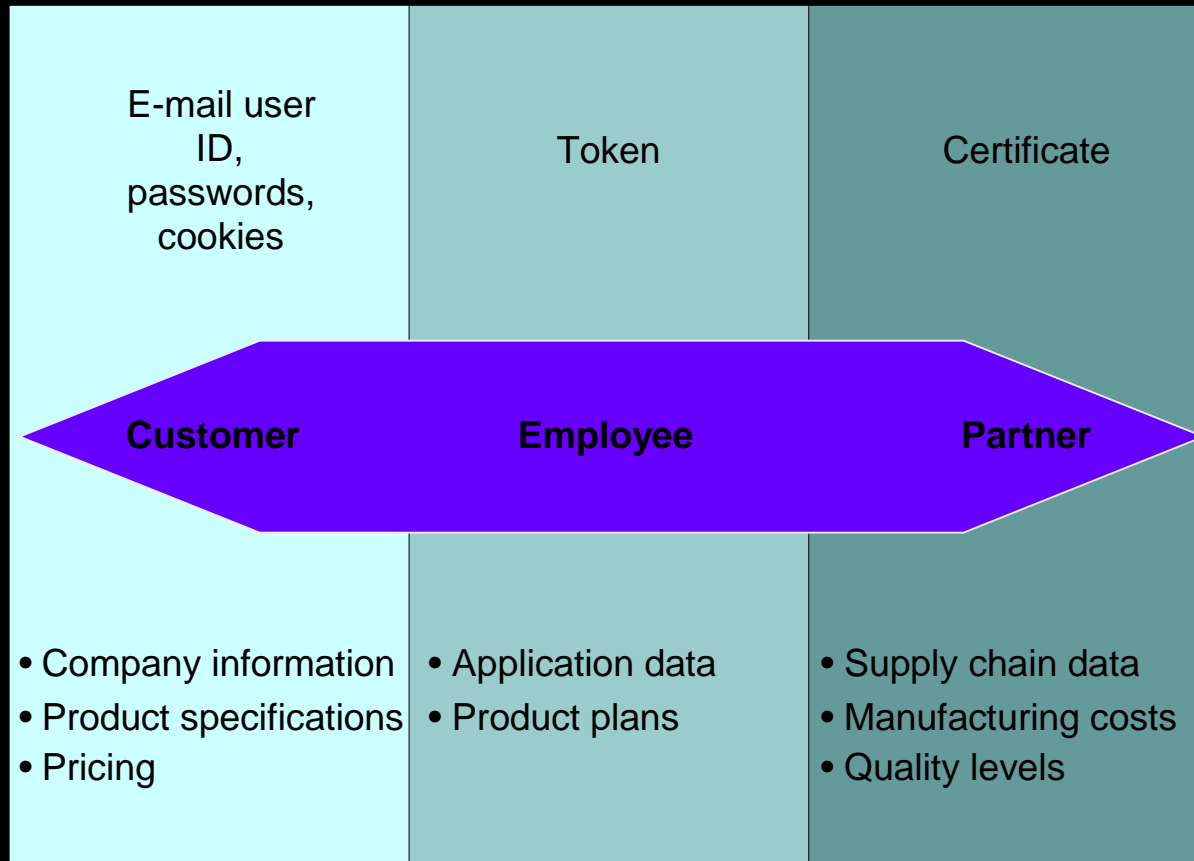
Percent of 50 Global 2,500 companies interviewed (multiple responses accepted)

Source: Forrester June 1999

Selecting the Best Authentication Options

	Method	Strengths	Weaknesses	Comments
Something you know	ID and password	<ul style="list-style-type: none"> • Widely supported 	<ul style="list-style-type: none"> • Cumbersome • Limited security 	<ul style="list-style-type: none"> • Poor accountability when users share passwords • Unsuitable for high-value transactions
	Random number token	<ul style="list-style-type: none"> • Proven security • Broad applications support 	<ul style="list-style-type: none"> • Difficult to use • Expensive 	<ul style="list-style-type: none"> • Too cumbersome to force on partners
Something you have	Digital certificate	<ul style="list-style-type: none"> • Flexible 	<ul style="list-style-type: none"> • Immature 	<ul style="list-style-type: none"> • Poor interoperability • Limited application support
	Smart card	<ul style="list-style-type: none"> • Ease-of-use 	<ul style="list-style-type: none"> • Expensive • Immature 	<ul style="list-style-type: none"> • Expensive readers • Limited application support
Something you are	Biometric	<ul style="list-style-type: none"> • Highly secure 	<ul style="list-style-type: none"> • Cost • Privacy concerns 	<ul style="list-style-type: none"> • Biometric (e.g.: fingerprint) can't leave the reader -- impossible to replace if compromised

Authentication Spectrum



Administration

Desktop

- User profile (apps, mail, hours of use, etc.)
- Authentication
- Icon Management
- Security (screen locking, encryption)

Server

- User IDs and passwords
- File system privileges
- System configuration

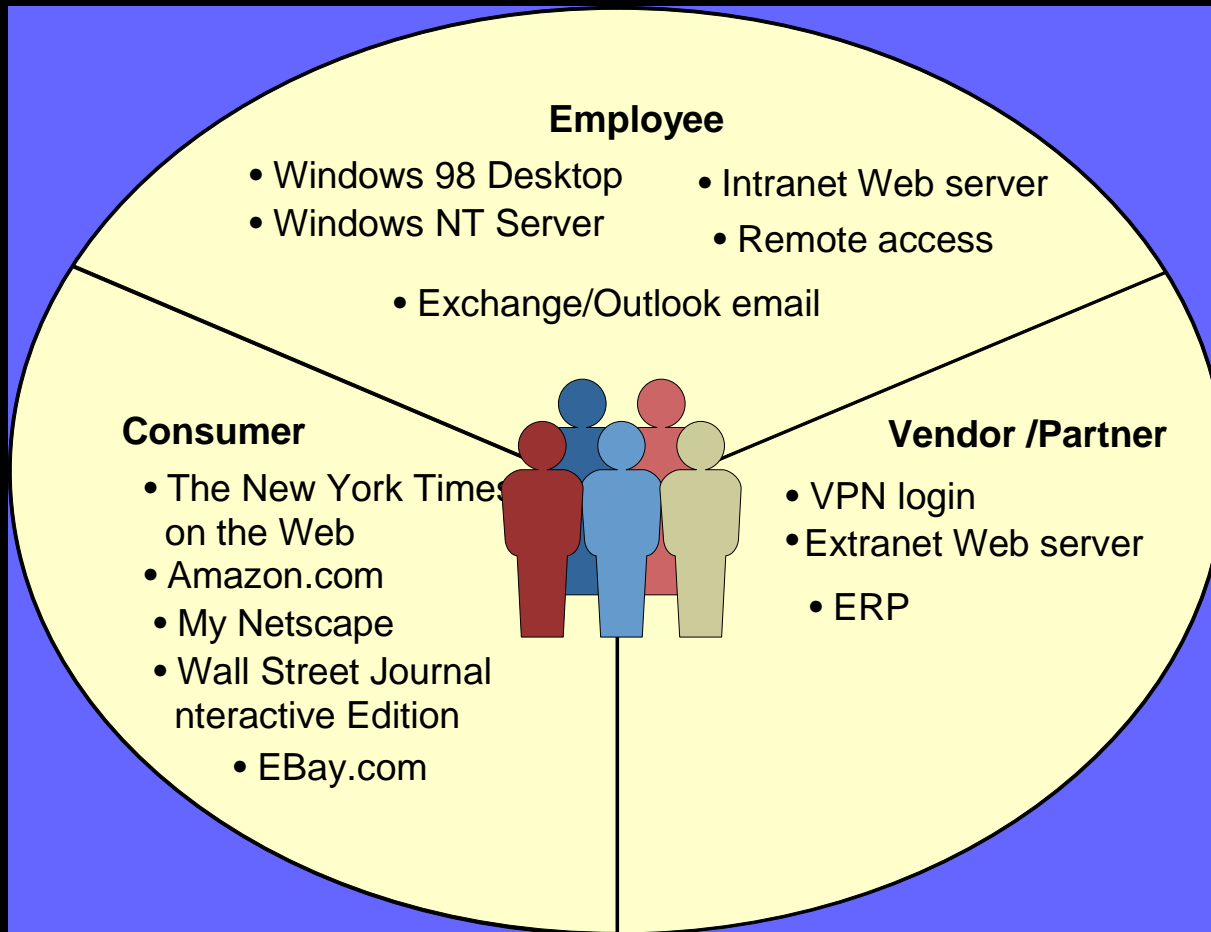
Administration

- Enterprise administration
- Subordinate administration (role or business unit)
- Consolidated Audit management

Devices

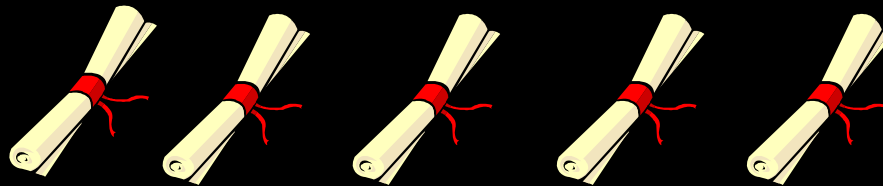
- Firewall configuration
- Router configuration
- Audit and network monitoring

Password Administration is Become a Major Security Hurdle



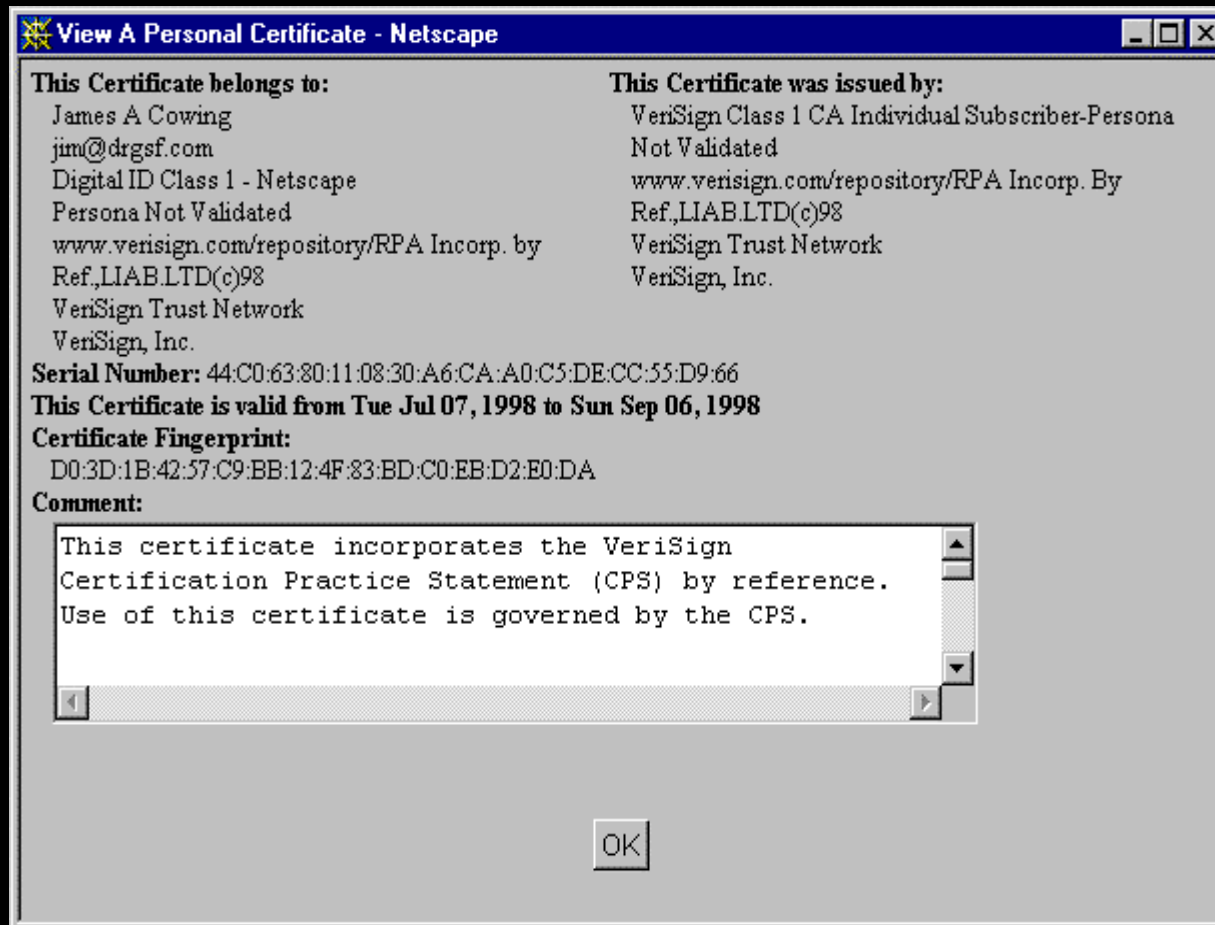
13 distinct ID 's and passwords a typical employee has to remember

Digital Certificates



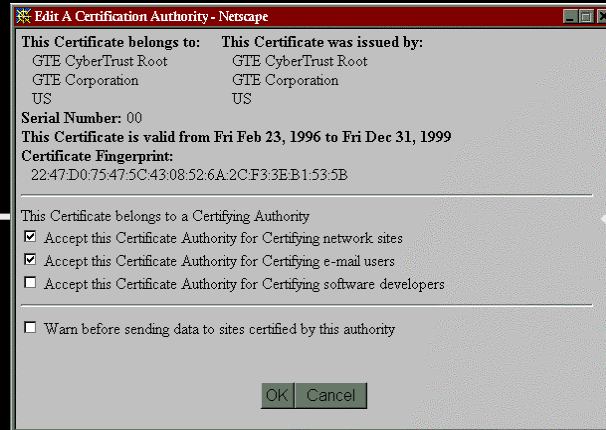
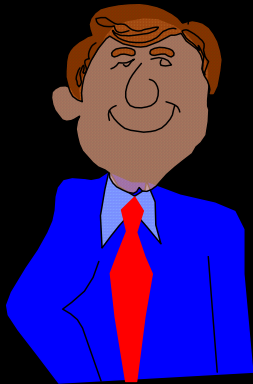
Digital Certificates

Future Solution ?



Multi-application Use /Single Sign-On

Employee



Remote Access

Intranet

Email

HR Records

Internet

Mainframes

Potential cost savings

VPN

Virtual Private Networks: Using the Ubiquity of the Internet and the Security of Private Comm Lines thru Certificates and Always Available Connections.

- Still Interoperability Issues
- Cheaper
- Replacing Frame Relay and T-1s

Security Focus is Shifting

Yesterday

Internal focus

Access is granted to employees only

Centralized assets

Applications and data are centralized in fortified IT bunkers

Prevent losses

The goal of security is to protect against confidentiality breaches

IT control

Security manager decides who gets access

Today

External focus

Suppliers, customers, and prospects all need some form of access

Distributed assets

Applications and data are distributed across servers, locations, and business units

Generate revenue

The goal of security is to enable eCommerce

Business control

Business units want the authority to grant access

Source: Forrester Research, Inc.



Strategic Security Solutions

Finding the Right Security Solutions

- ❖ **Clearly Identify Business Goals**
- ❖ **Evaluate Security Risks and Requirements**
- ❖ **Consider Entire Infrastructure, including your Extranet / Partners where applicable**
- ❖ **Standards-based (reduced time to market, less coding and re-work later)**
- ❖ **Define Solutions by Corporate Fit (Cost vs. Benefit)**
- ❖ **Leverage Your Security Investment (reusable, integrated, enterprise-wide)**

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