The Challenges of Secure Knowledge Management

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Challenges

- Trust
- Mobility
- Privacy
- Governance

The Human Factor is Critical
Developing a Secure “Trust” Model

I just don’t trust that guy.
Basic Security Requirements

- Identity
- Access Control
- Mutual Authentication
- Data Encryption
- Non-repudiation
Establishing Cyber-Trust

Authorized Users

Secure Connection 100% control

SmartGate VPN Server

Firewall
- Windows 2000, 2003, NT
- Sun Solaris
- Linux RedHat

End-to-End Security:

- **Encryption** - AES or Triple DES, NIST FIPS Certified
- **Strong Authentication** - Two Factor, Mutual, NIST FIPS Certified
- **Access Control** - Fully Integrated, Central or Distributed Management
- **Audit Logging** - Logs all user activity
Knowledge Management for a Mobile Workforce
Remote Field Personnel

Application

Smart VPN client

PayLoad  TCP header  IP header

Addressing information for destination (obtained from decrypted payload)

Forward to destination

VPN Client

• Encrypt
• Package

Receive packet

Payload  TCP header  IP header

• Unpackage
• Decrypt (payload)
• Validate

Data  Communication Info

Addressing information for VPN server

Transmit packet

Data  Communication Info

VPN Client

• Encrypt
• Package

Addressing information for destination

(Trusted Environment)

Secure End-to-End Connectivity
ORI’s Motor Carrier HAZMAT System

1. Alert Notification via Pager
2. View Crash and HAZMAT Details on Secure Web Pages

National Message Center
Fleet Manager Database
Waybill File
Communication Center Server

Alert message with vehicle ID, location, and crash information

Gypsum Express Truck with Qualcomm System and ACN Device

So that first responders are NOT the “first victims”
Real-Time Information Flow for Bomb Squads

Accredited Bomb Squad Personnel

Smart VPN client

CoBRA
(Chemical Biological Response Aid)

FBI LEO
(Law Enforcement Online)

Public or Private, IP Networks (LANs, WANs, Internet, etc.)

VPN Server

Access to Critical Information:
- Effects
- Protective Gear
- Response Measures
- Defusing an Explosive
- Closest Safe Detonation Site
- Decontamination Procedures
Privacy Challenges
Protecting Privacy is Fundamental

- Information privacy is a basic right
- Government privacy regulations must be observed
- Security technology can help to enable privacy protections that allow only authorized users to access specific data
  - Extend protected information access
  - Maintain system control by unique data owners
  - Provide ability to securely add new users on demand
  - Control risk of inappropriate access

Security technology is necessary to maximize information value
Ensure data is put in the hands of those who should appropriately act on the information.
Governance Issues
Governance Responsibilities

• Security policy for knowledge management
  – Focus on process
  – Serve the business goals
• Security “ROI” metrics
  – FUD (Fear, Uncertainty, Doubt)
  – Risk management and business continuity
  – Productivity - supply chain, mobility, cost savings
• Oversight responsibilities elevated to the boardroom
  – Sarbanes-Oxley
  – Cyberspace citizens

Your policy and technology choices must work together in practice!
Secure Knowledge Management Best Practices
Best Practices

Four important questions to ask when implementing secure knowledge management...

1. **How secure is secure enough?**
   - Establishing cyber-trust is critical
   - Sensitive information requires strong security

2. **Is security available “on-demand”?**
   - Choose self-provisioning solutions that support wide variety of user and operational environments, including mobile ones

3. **Will the security features be used?**
   - End-user transparency
   - Centralized policy management

4. **Can I leverage my IT investment?**
   - Gain advantages from agnostic solutions
   - Implement technology to support your business objectives
Thank You

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