



# 1997 RSA Data Security Conference

## Enterprise Security and Firewall Technology Trends

Shlomo Kramer  
Executive Vice President and Co-  
Founder  
Check Point Software Technologies Ltd.

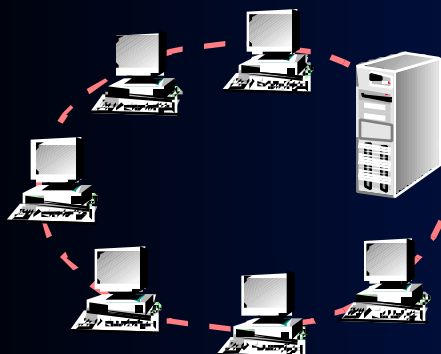


# Agenda

- Trends in Internet/Intranet Adoption
- Changing Uses: Evolving Security Requirements
- Firewall and Security Technology Evolution
- Defining an Effective Security Policy

# Global Connectivity Explosion

**Growth in Client/server Computing**



**Widespread Adoption of Internet**



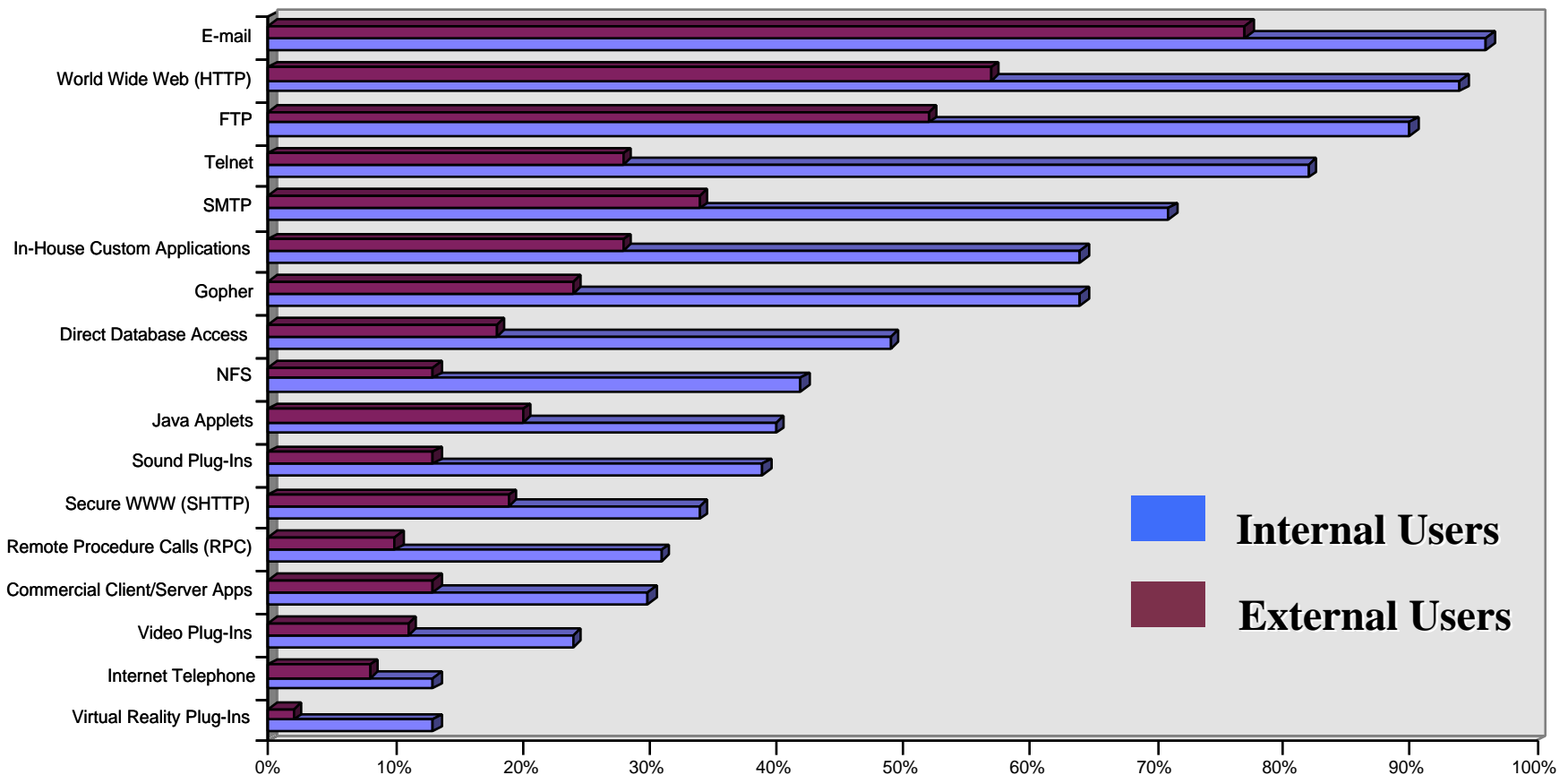
## Increased Need for Secure Enterprise Networking

# Internet/Intranet Global Information Access



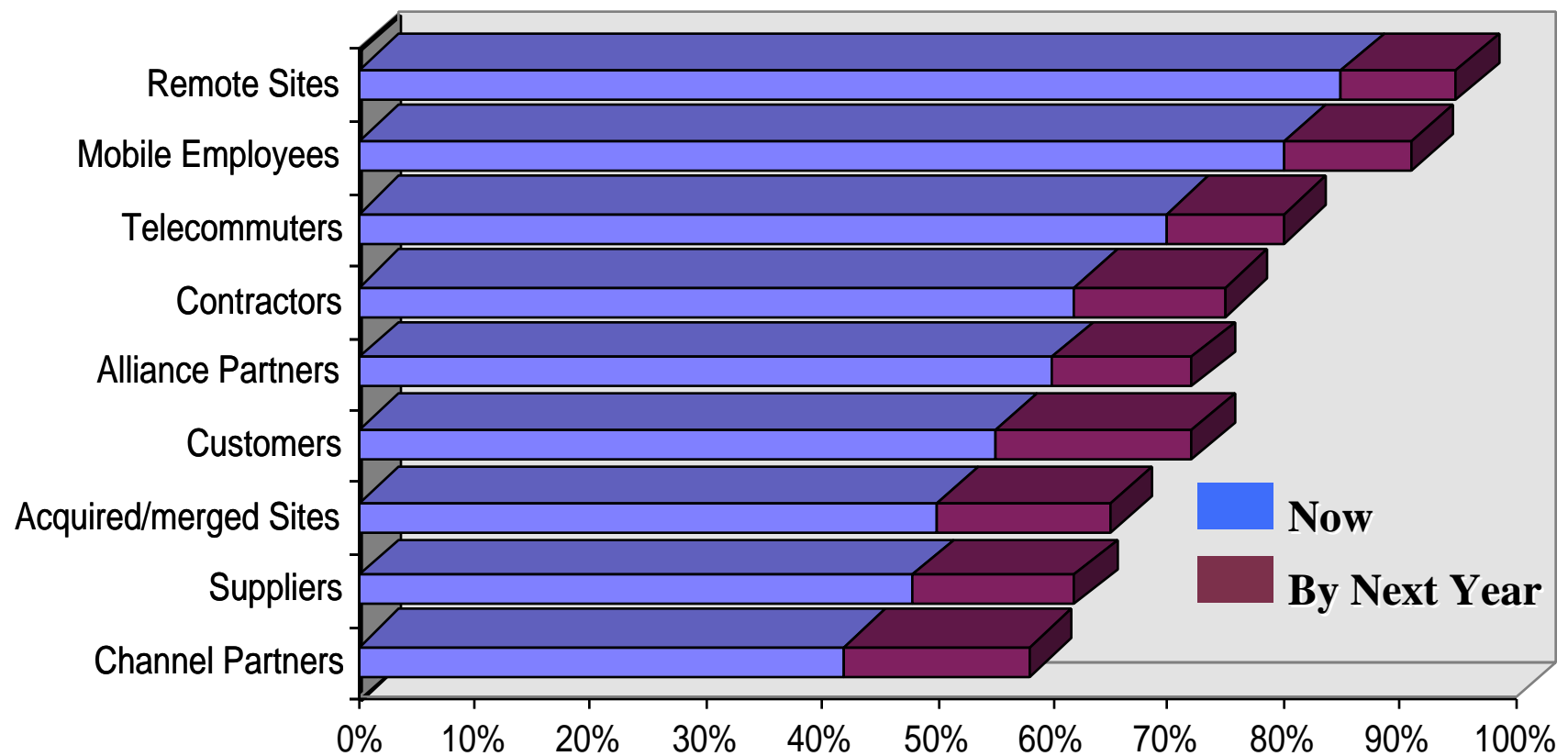
- Internet/Intranet information access, essential business functions:
  - Email
  - File transfer
  - Remote computer terminal access
  - Research and information gathering
  - Information distribution to partners, client and customers
  - Electronic commerce

# Application Access



Source: IDC, 1996

# Sites Requiring Internet Access to Sensitive Information



Source: IDC, 1996

# Changing Uses: Evolving Security Requirements



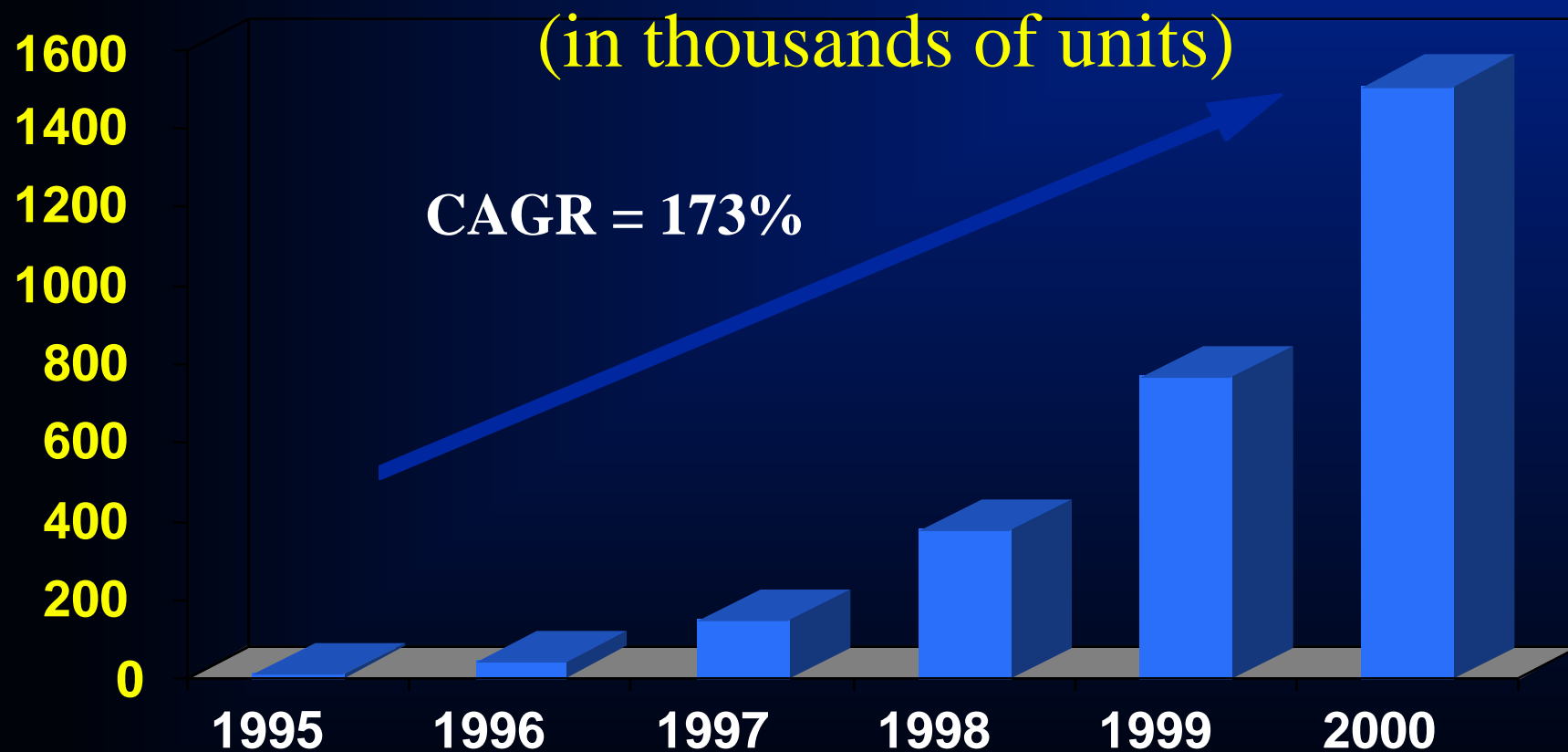
- Global network connectivity opens Internet sites to attack from virtually anyone, anywhere
- Internet-connected sites generally lack or have a vague understanding of security and proper security strategies
- Internet hackers are armed with sophisticated tools and strategies
- Many Internet connected systems still contain known software bugs that can be exploited by methodical attackers

# Statistics on Security Breaches

- **78%** of IS chiefs reported their company had suffered a loss related to information security and computer viruses in the past 2 years (Information Week/Ernst & Young)
  - Over 25% reported losses up to \$250,000
  - 30% cited malicious acts by company insiders; 17% reported external breaches
- In 1988, the Computer Emergency Response Team (CERT) at Carnegie Mellon University reported **6** security breach incidents. In 1995, there were **2,412** reported incidents
  - Majority of incidents (83%) go unreported due to fear of bad publicity
- U.S. corporate security **budgets increased 25%** during 1995 (Yankee Group/InfoSecurity News)

# Security Market Growth

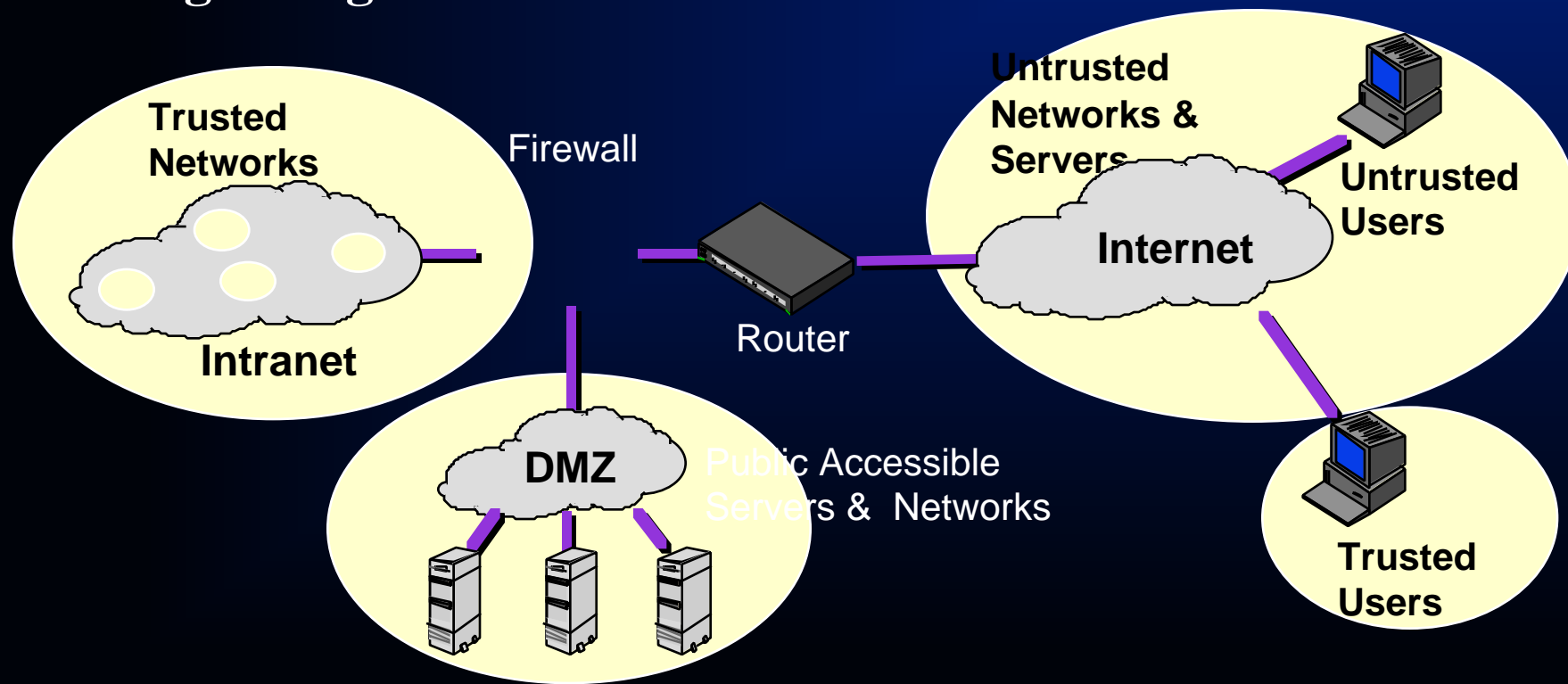
## Worldwide Firewall Market



Source: International Data Corp., February 1996

# What is a Firewall?

- Device that separates networks (internal/external; varying levels of trust)
- Used to Implement and Enforce a Security Policy Regarding Communication Between Networks

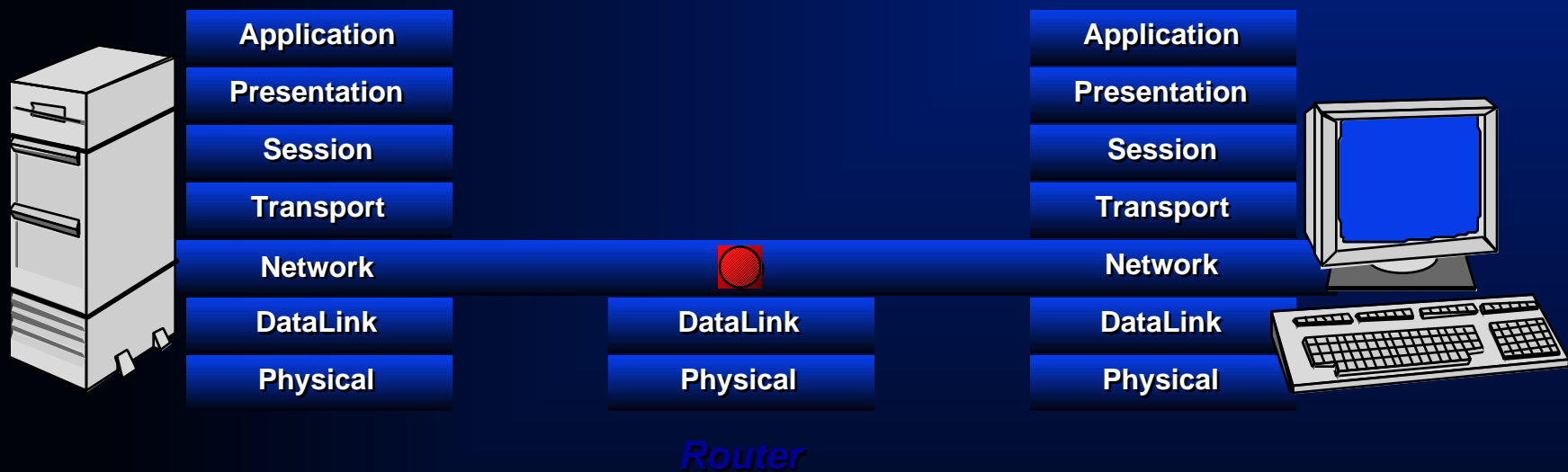


# Firewall Evolution





# Packet Filters



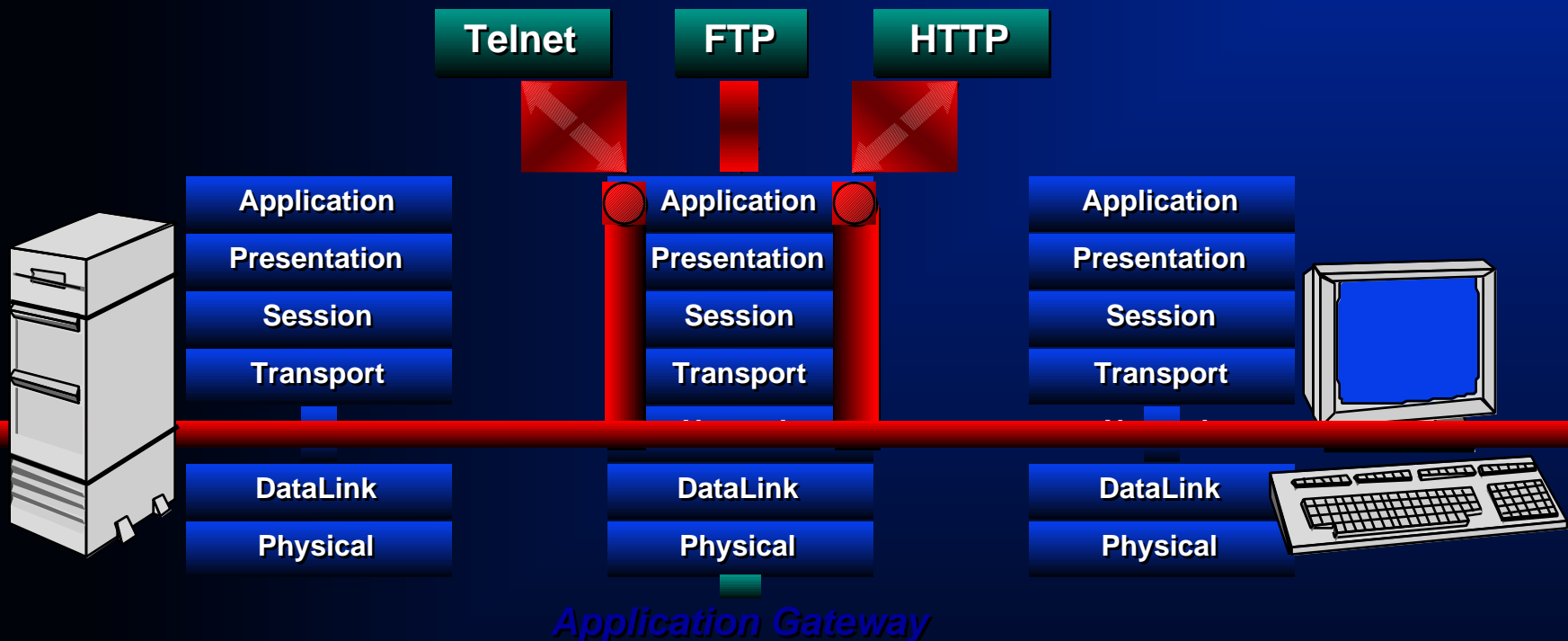
## PROS

- Application Independence
- High Performance
- Scalability

## CONS

- Low Security
- No Screening Above the Network Layer (No “State” or Application-Context Information)

# Application-Layer Gateway (Proxy-Servers)



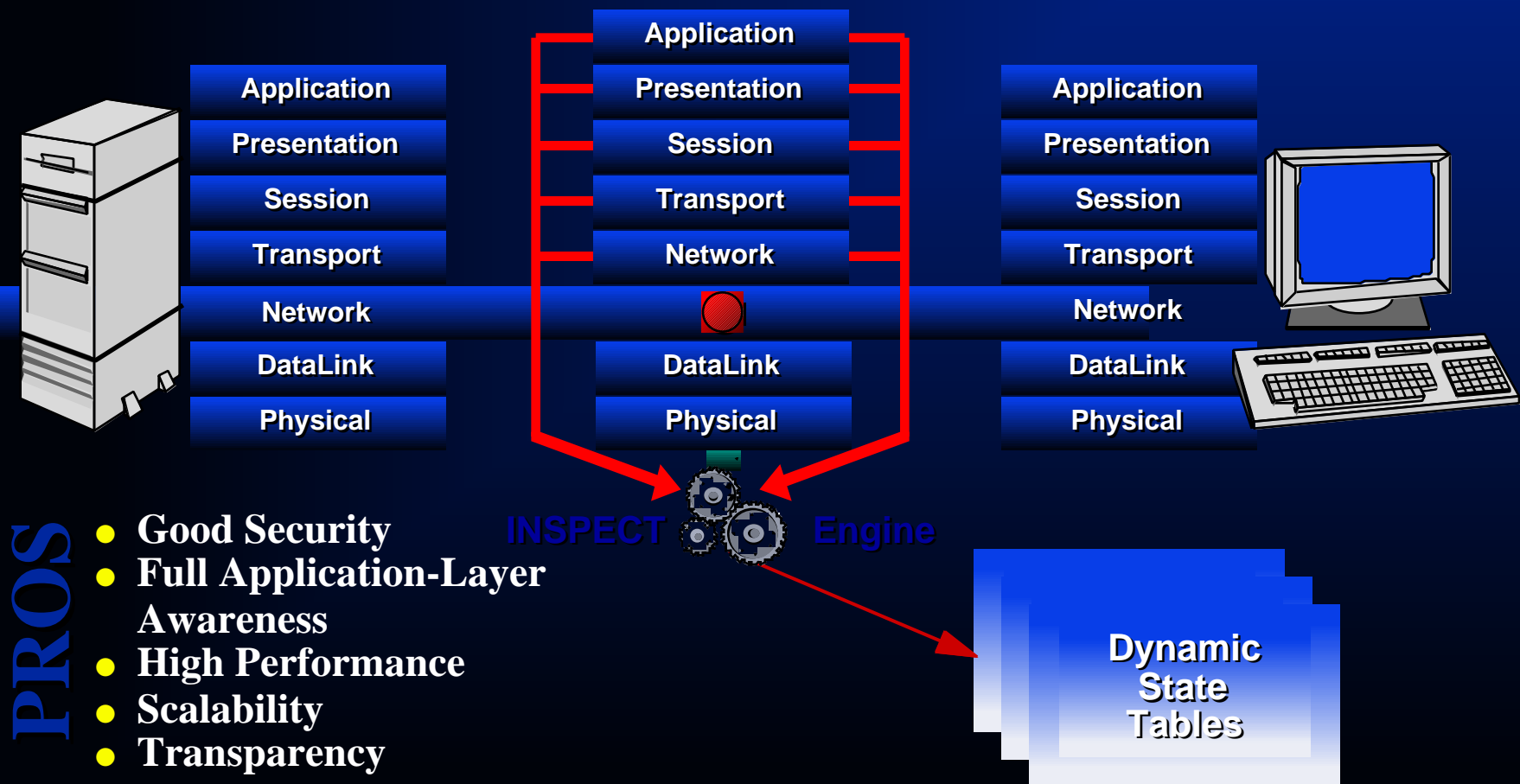
## PROS

- Good Security
- Full Application-Layer Awareness

## CONS

- Poor Performance
- Limited Application Support
- Poor Scalability  
(Breaks the Client/Server Model)

# Stateful Inspection



# Security Technology Spectrum

**Network Security**

Access Control  
Authentication  
Encryption  
NAT  
Content Security

High Availability  
Load Balancing  
Performance  
Enhancements

**Secure  
Connectivity  
Management**

**Firewalls**

**Next  
Generation**

Security Policy Management  
Router Security Management  
User Management  
Bandwidth Management  
Billing and Accounting

**Active Network Management**