

Firewalls and Beyond — The Future of Network Security

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Security for a Connected World™

The Network Security Market

- ◆ Closed Domain Systems
 - ◆ User access from anywhere in the world; Intranet, corporate environment
 - ◆ Users are known
- ◆ Open Domain Systems
 - ◆ Pay per view, credit card transactions (SET)
 - ◆ Users are unknown

The Network Security Market

(continued)

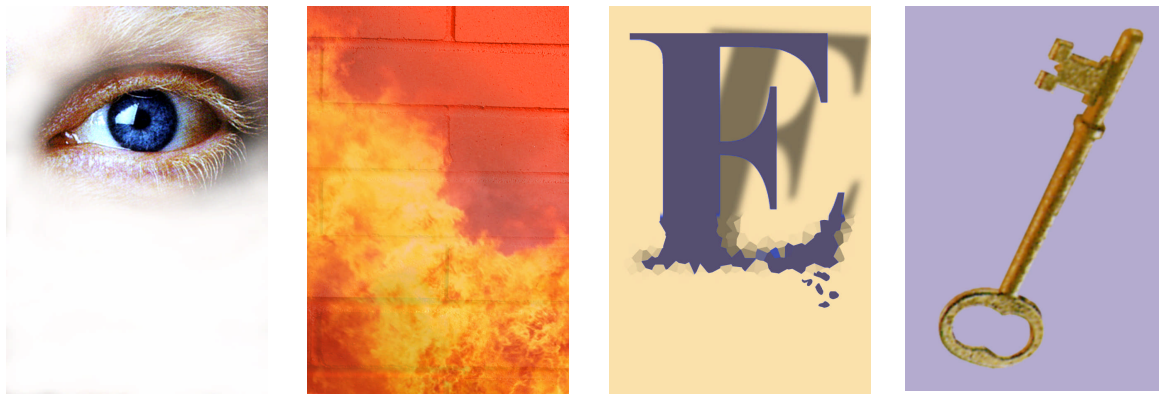
- ◆ Open to Closed
 - ◆ Banks, Brokerages, Financial Services, Information Subscriptions
 - ◆ New Users unknown, but become known
 - ◆ Established user base becomes part of Internet domain

Available Technologies

- ◆ VPN - layer 3
- ◆ SET - layer 7
- ◆ SSL - layer 4-5
- ◆ SmartGATE - layer 7

Available Technologies and Application Support

	WEB	TELNET	SMTP E-MAIL	X.400 E-MAIL	MS EXCHANGE	LOTUS NOTES	SQL	TN 3270	EDI
VPN	X	X	X						
SET	X								
SSL	X								
SmartGATE	X	X	X	X	X	X	X	X	X

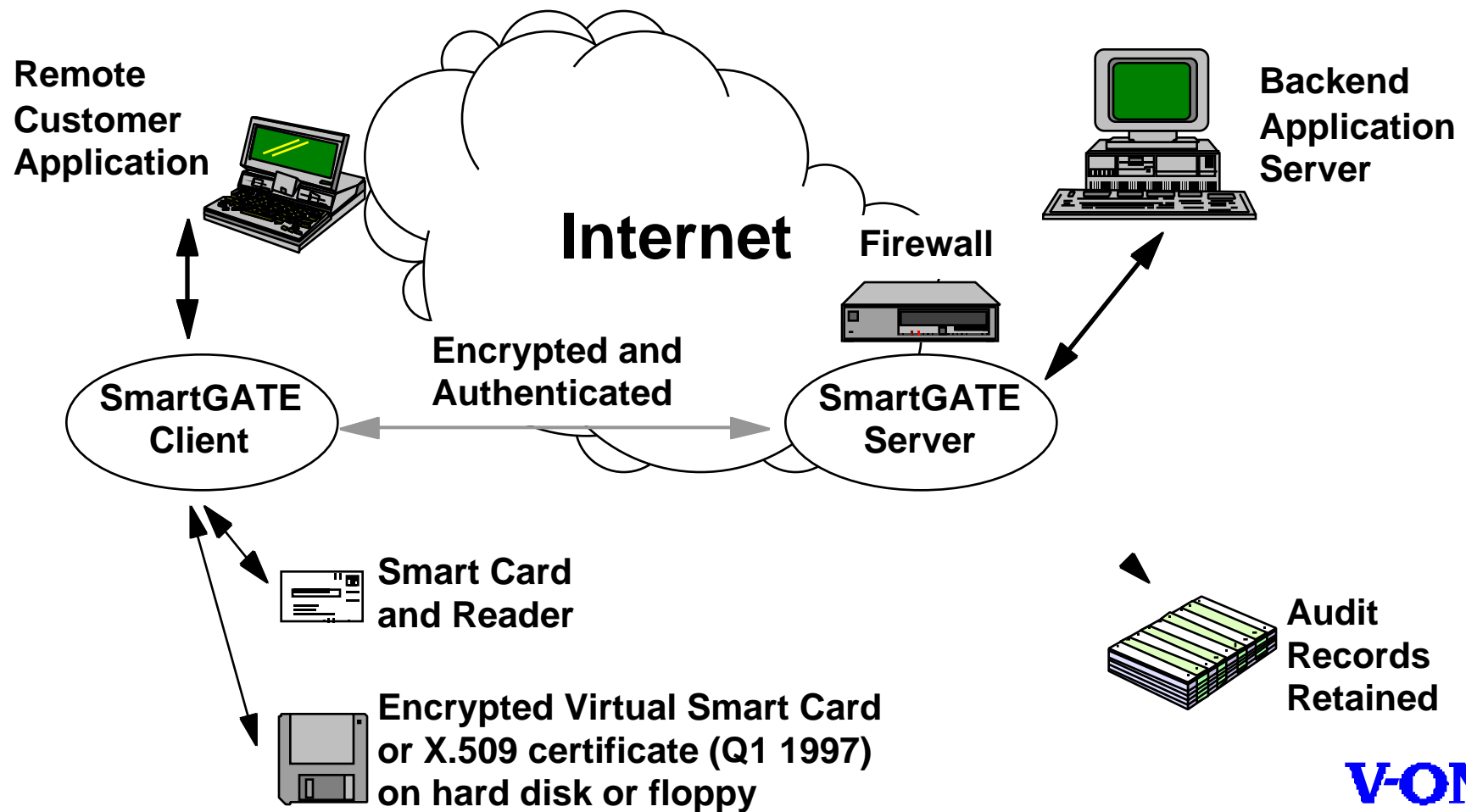


SmartGATE Solution

SmartGATE

- ◆ Application-to-Application security for selected applications
- ◆ End-to-End security between desktop and firewall
 - ◆ Works with legacy applications
 - ◆ Requires no re-coding of client or server software
 - ◆ Does not interfere with user's desktop

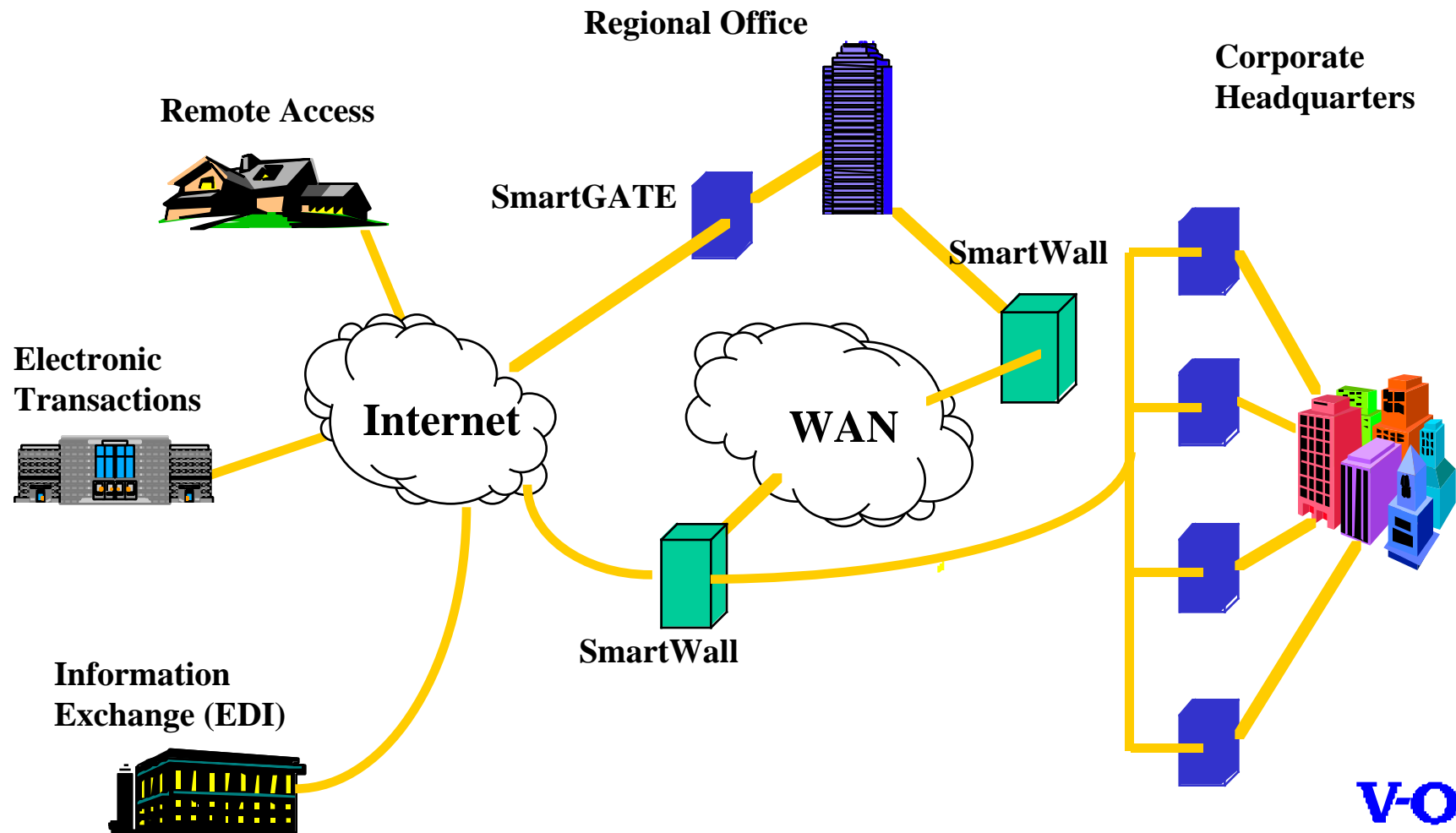
The SmartGATE System



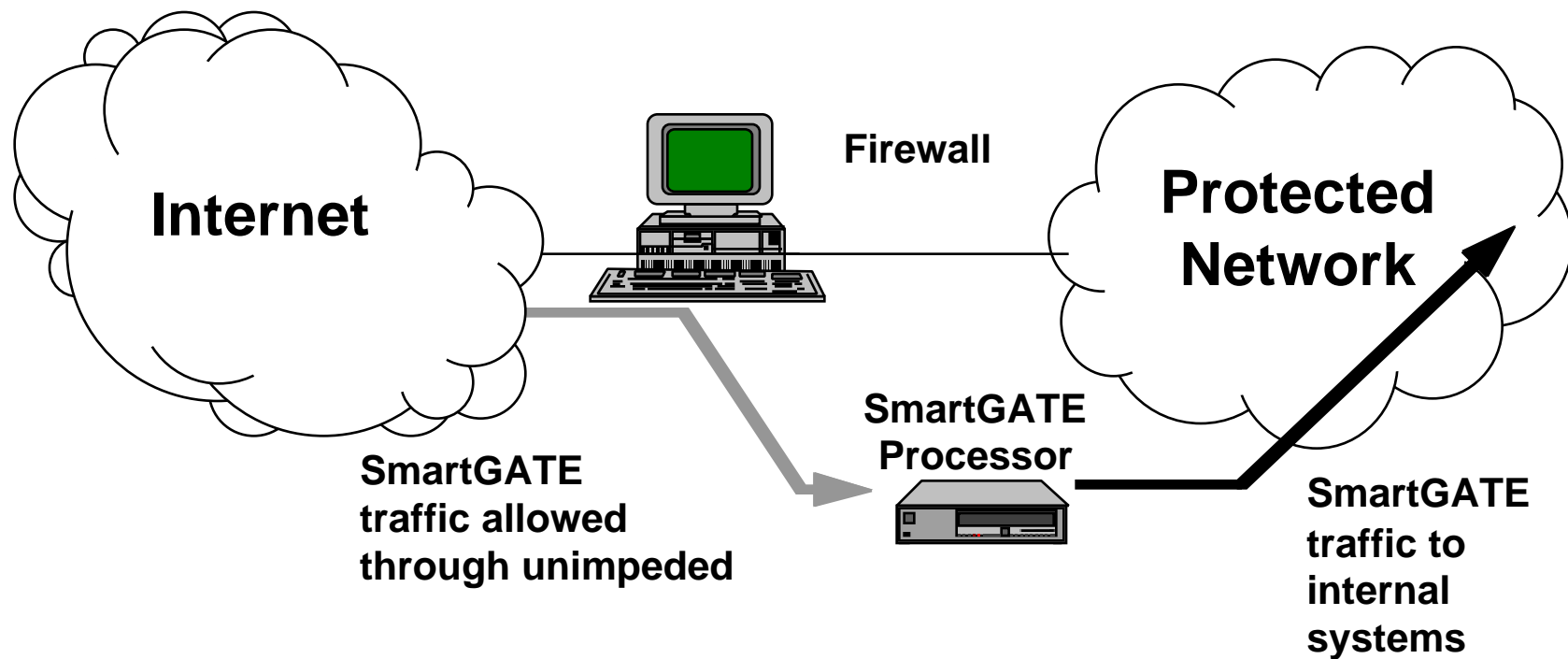
SmartGATE

- ◆ Transaction security system for *virtually all* network applications
- ◆ Compatible with existing and future applications
- ◆ Integrates authentication and encryption with easy to use application

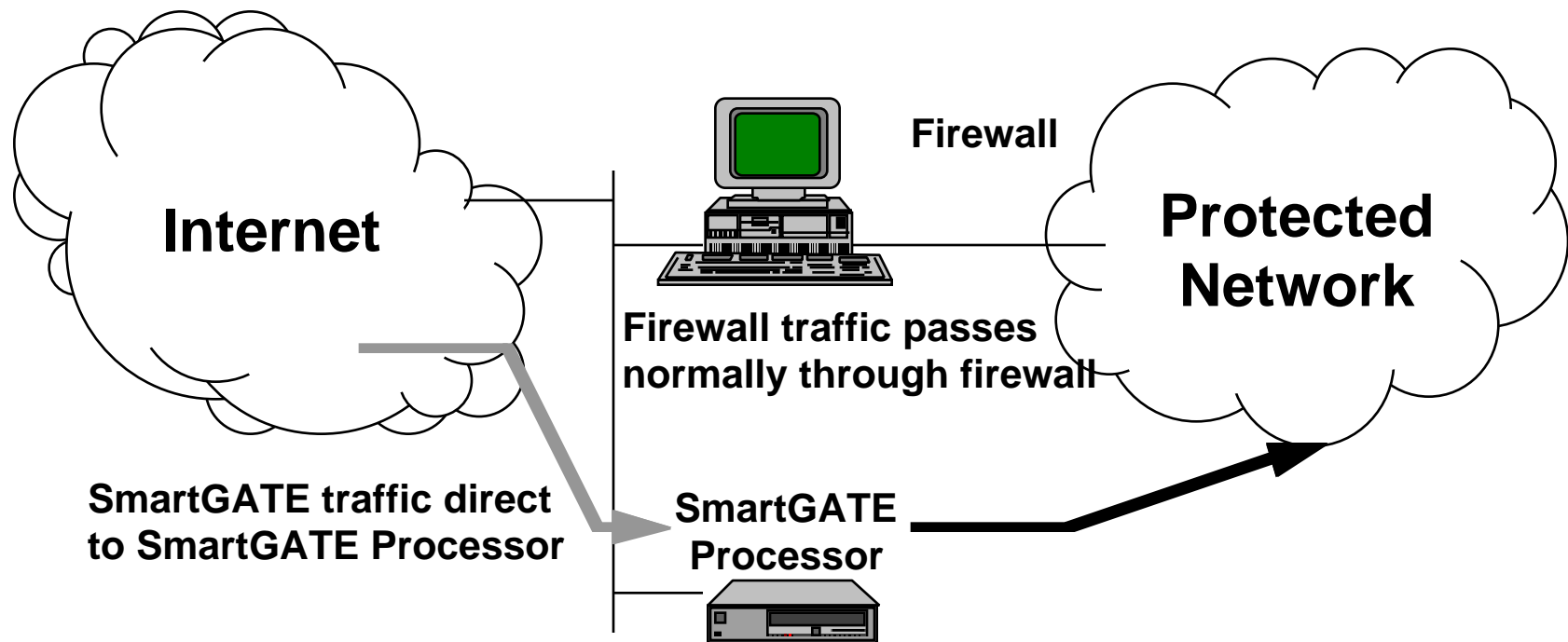
V-ONE Solution



SmartGATE Behind a Firewall



SmartGATE Parallel to a Firewall



SmartGATE with Firewalls

- ◆ SmartGATE will work with or through existing firewalls
 - ◆ In Parallel
 - ◆ Behind It
- ◆ SmartGATE is also available as integrated software on V-ONE Firewall product SmartWall

SmartGATE

- ◆ SmartGATE is the industry's only drop-in security solution that supports legacy applications with transparent smart card integration
- ◆ SmartGATE is high performance transaction security with access control
- ◆ SmartGATE low-cost architecture lends itself to many applications

SmartGATE Environment

- ◆ SmartGATE Client
 - ◆ Interacts with network on behalf of user
 - ◆ Performs authentication and accesses smart card or virtual smart card
 - ◆ Encrypts data transparently
- ◆ SmartGATE Server
 - ◆ Performs access control at firewall
 - ◆ Retains smart card and access database

End-to-End Encryption

- ◆ SmartGATE provides multiple algorithm *application-level* encryption
 - ◆ Fine-grained control over user activities
 - ◆ Authentication per connection
 - ◆ Higher performance than packet encryption
 - ◆ Does not interfere with other applications running on the system
 - ◆ Transparent to application

SmartGATE Server

- ◆ Server acts as authentication gateway and user registry
 - ◆ Performs authentication with remote SmartGATE client
 - ◆ Maintains access control database
 - ◆ Maintains audit trail
 - ◆ Decrypts traffic
 - ◆ Forwards traffic to backend service

SmartGATE Client

- ◆ SmartGATE client hides all the details from the user and provides security
 - ◆ Accepts connection from client application
 - ◆ Puts a pop-up for user to unlock authentication token
 - Can support multiple forms of authentication
 - ◆ Negotiates authentication with firewall
 - ◆ Performs application data encryption

Internal and External Use

- ◆ SmartGATE can be used to secure *Intranet and Internet* access for employees *and* customers
 - ◆ Can rely on same card database
 - ◆ Centralized control and management
 - ◆ Fine-grained access control restricts users or customers to only those services which they are authorized by administrator

Intranet SmartGATE

- ◆ Secure access to mission critical systems or networks can be provided using SmartGATE
 - ◆ Traffic encrypted within *Intranet* as well as Internet
 - ◆ Does not interfere with other application access
 - ◆ Use ubiquitous solution for Internet *and Intranet* security

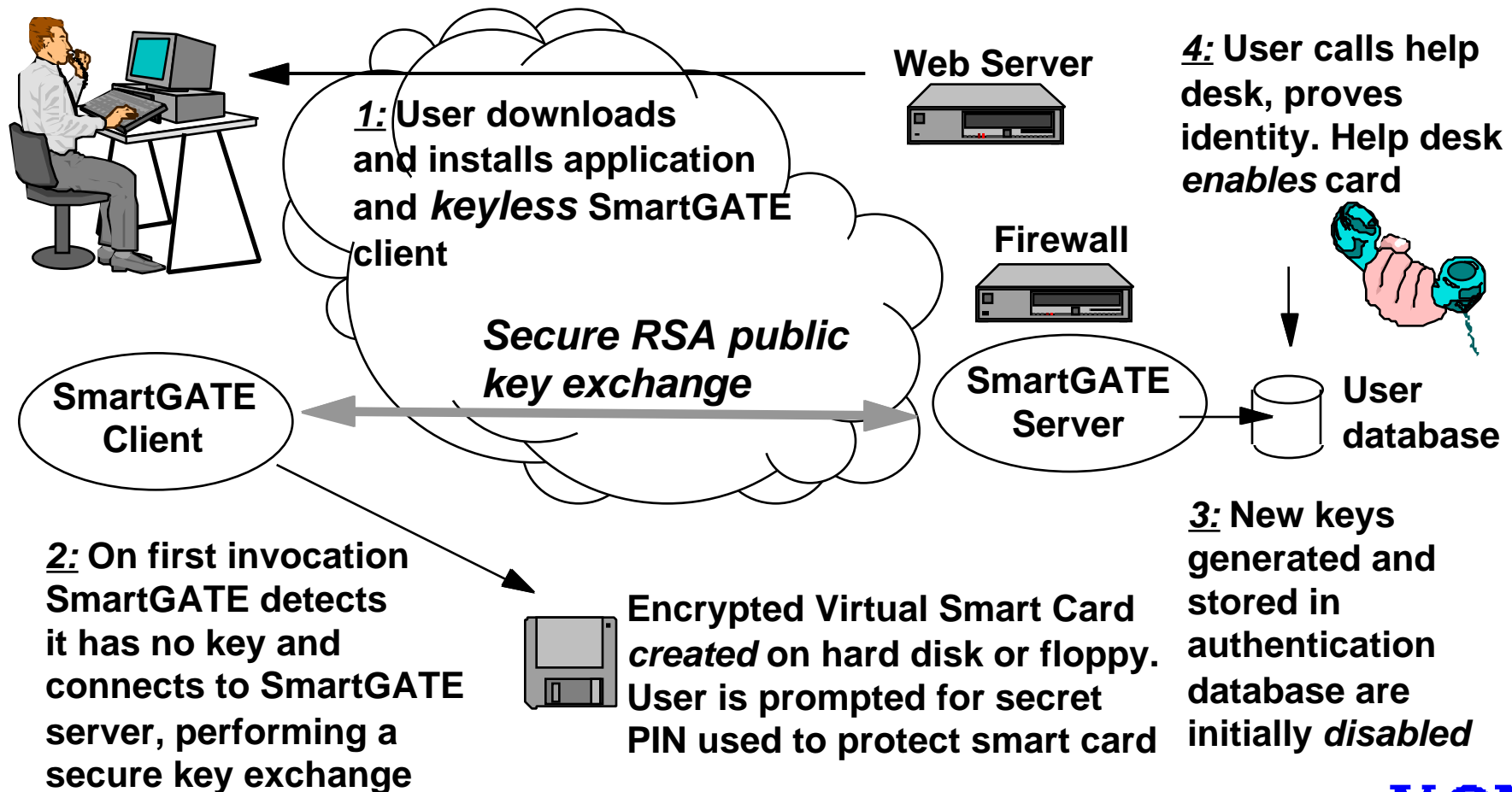
Registration-Based Networks

- ◆ SmartGATE only allows *registered users* of the system access to services on the protected network
 - ◆ Perfect for customer-oriented or electronic commerce applications
 - ◆ Excellent for vendor or employee remote access
 - ◆ Provides strong audit trail per user

On-Line Registration

- ◆ Registering hundreds of thousands of users represents a significant effort
 - ◆ On-Line Registration automatically handles key exchange using RSA public key
 - ◆ Secret keys stored in card for future
 - ◆ New card is initially disabled at server
 - ◆ User must identify themselves to service provider to get card enabled

On-Line Registration



SmartGATE Advantages

- ◆ Time to Market / Rapid Deployment
 - ◆ Use of existing applications means no recoding no additional software licenses
- ◆ Growth Path
 - ◆ Support for new authentication systems
 - ◆ Support for new protocols and algorithms
- ◆ Mix and Match Authentication
 - ◆ Mix smart cards, tokens and software

SmartGATE Advantages (Continued)

- ◆ Rapidly deploy to large user bases
 - ◆ Dynamic enrollment makes it easy to sign up customers, business partners, or employees
 - ◆ Key exchange and management is automated
- ◆ Migration path to smart cards
 - ◆ Future stored value and integrated credit card / E-cash capability



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