

E-Business Strategy

**”Internet Payment & Banking, Security Issues in EC”
MBA/USQ**

Lecture 3

(August 24, 2000)

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University of Leeds

Outline



- ✓ Quick Review on Lecture 2
- ✓ Email Feedback
- ✓ Pre-M6: Cryptography 101
 - Introduction
 - Encryption: What and Why
 - Four Enablements of Cryptography
 - Private/Secret Key Cryptography
 - Public Key Cryptography
- ✓ M6: Internet Payment & Banking
 - Internet Payment Systems
 - 1. Credit Card-based System
 - 2. Digital Cash System
 - 3. Digital Cheque System
 - 4. Smart Card System
- ✓ M6: Internet Payment & Banking (cont)
 - History & Functions
 - Transaction Costs
 - 4 Phases – Services & Benefits
 - Disadvantages
- ✓ M7: Security Issues in Electronic Commerce
- ✓ Class Activity 1: Assignment 2 Discussion
- ✓ Class Activity 2: Reading
- ✓ Class Activity 3: Case Studies – 3x
- ✓ Additional Handouts for L3
- ✓ What's in Store for Lecture 4

Quick Review on Lecture 2



✓ M4: Strategies for Database Marketing

- o Introduction to Direct Marketing
- o Direct Marketing: Traditional Means vs Multi-media
- o Introduction to Database Marketing
- o Database Marketing: Benefits & Usage
- o Business Intelligence & Data Mining*
- o Data & Text Mining Applications*
- o Business Intelligence Video* (from IBM)

✓ M5: Business-to-Business

- o Introduction (revisit)
- o Module Scope (limited)
- o Simplified e-Business Process Model

✓ M5: Business-to-Business (cont)

- o Supply Chain Management
- o Traditional vs e-Business Supply Chain
- o Enterprise Resource Planning*
- o Customer Relationship Management*
- o Electronic Data Interchange
- o EDI: Costs and Benefits
- o Internet EDI*
- o From EDI to the Internet*

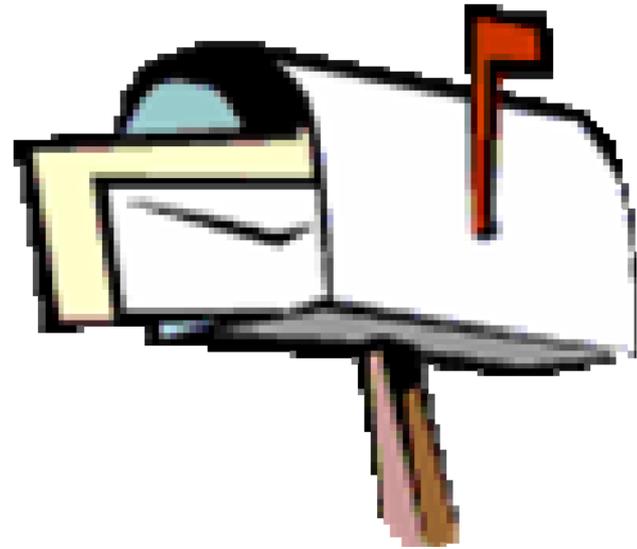
✓ Class Activity 1: Assignment 1 Discussion

✓ Class Activity 2: Reading

✓ Class Activity 3: Case Studies – 4x

Email Feedback

- ✓ Email discussions /
feedback from
10 Jul - 24 Aug 2000



Pre-M6: Cryptography 101

Introduction



- ✓ Cryptography is the science of **information security**.
- ✓ Cryptography includes techniques such as microdots, merging words with images, text in audio, and other ways to **hide information in storage or transit**.
- ✓ However, in today's computer-centric world, cryptography is most often associated with **scrambling plaintext** (ordinary text) into ciphertext (a process called **encryption**), then back again (known as **decryption**).

Pre-M6: Cryptography 101

Encryption: What and Why



- ✓ What is Encryption?
 - ✓ Conversion of a message into an intermediate form in which information is **present but hidden**.
 - ✓ Encryption enables a sender to transmit a private message to a recipient **free of the risk** of the message being read by **unintended parties**.

- ✓ Why Encryption?
 - ✓ The Internet is a **public network**.
 - ✓ It's very much like sending the data on a post card. Anyone with access to the packet (post card) can read the contents (and potentially alter it).

Pre-M6: Cryptography 101

Four Enablements of Cryptography



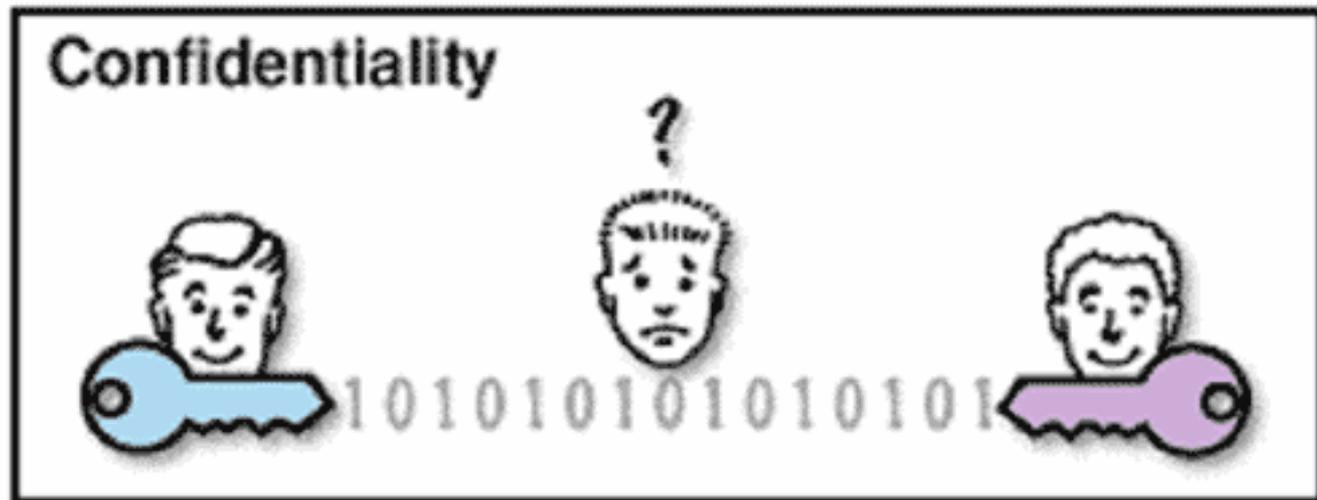
- ✓ 1) **Confidentiality**: The information **cannot be understood** by anyone for whom it was **unintended**.
- ✓ 2) **Integrity**: The information **cannot be altered** in storage or transit between sender and intended receiver **without the alteration being detected**.
- ✓ 3) **Non-repudiation**: The creator/sender of the information **cannot deny** at a later stage his or her intentions in the creation or transmission of the information.
- ✓ 4) **Authentication**: The sender and receiver can **confirm each other's identity** and the **origin/destination** of the information.

Pre-M6: Cryptography 101

Four Enablements of Cryptography: Confidentiality



- ✓ **Confidentiality: Preventing unauthorized eyes from seeing information.** If a CEO, for example, wanted to send a confidential e-mail message, she could encrypt that message so that only company officers possessing secret keys could decode it. Anyone else intercepting the message would see only gibberish.

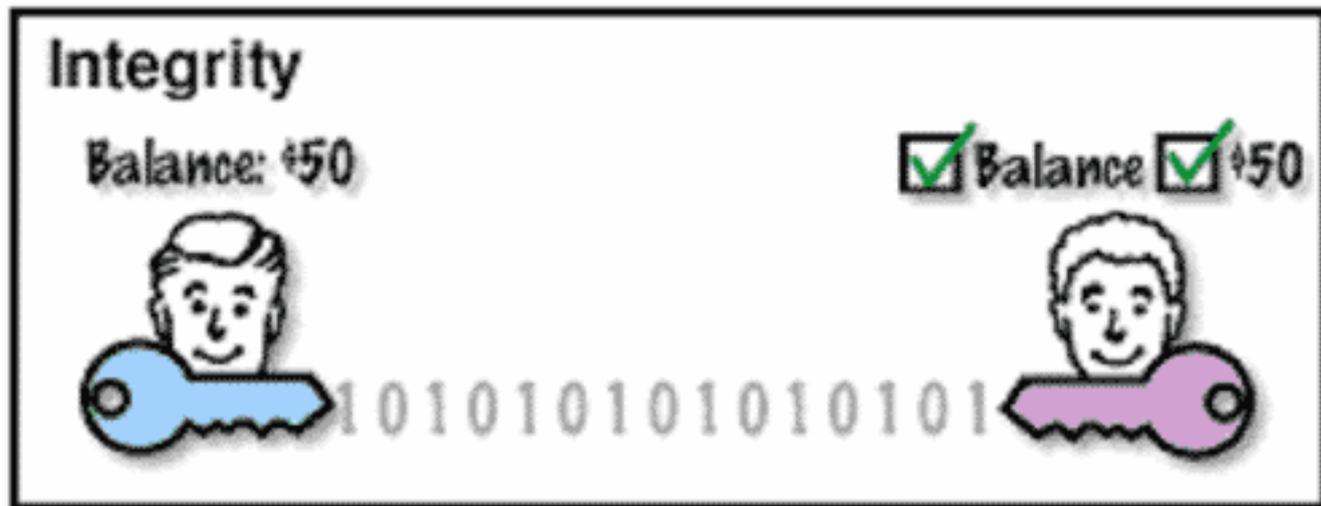


Pre-M6: Cryptography 101

Four Enablements of Cryptography: Integrity



- ✓ **Integrity:** Guaranteeing that **information** is **not changed** during transit, i.e., that it arrives in the same form in which it left.

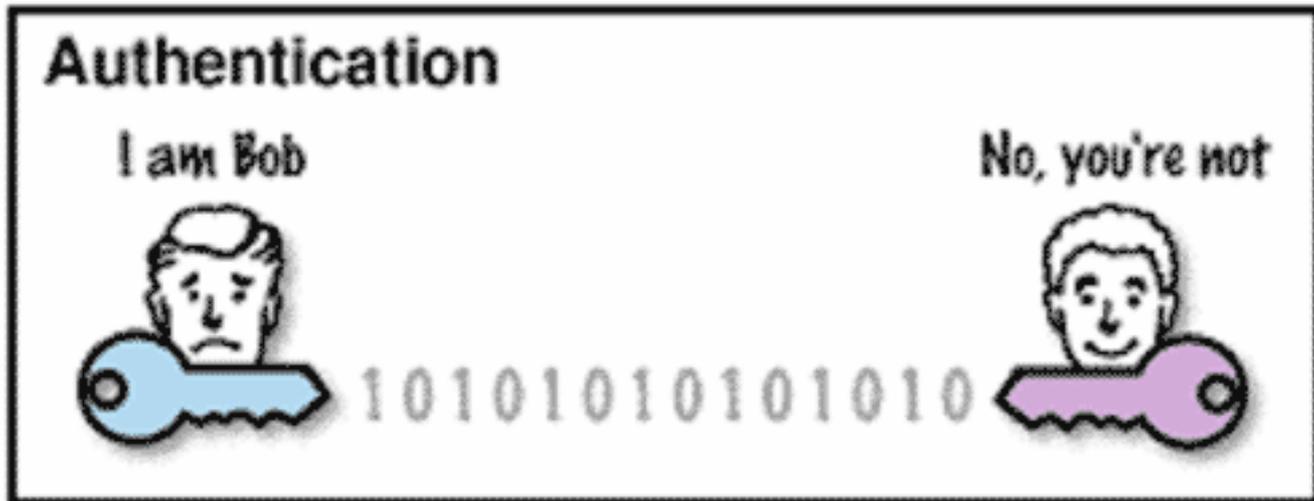


Pre-M6: Cryptography 101

Four Enablements of Cryptography: Authentication



- ✓ **Authentication: Verification** of the identity of a user and the user's eligibility to access and use information.

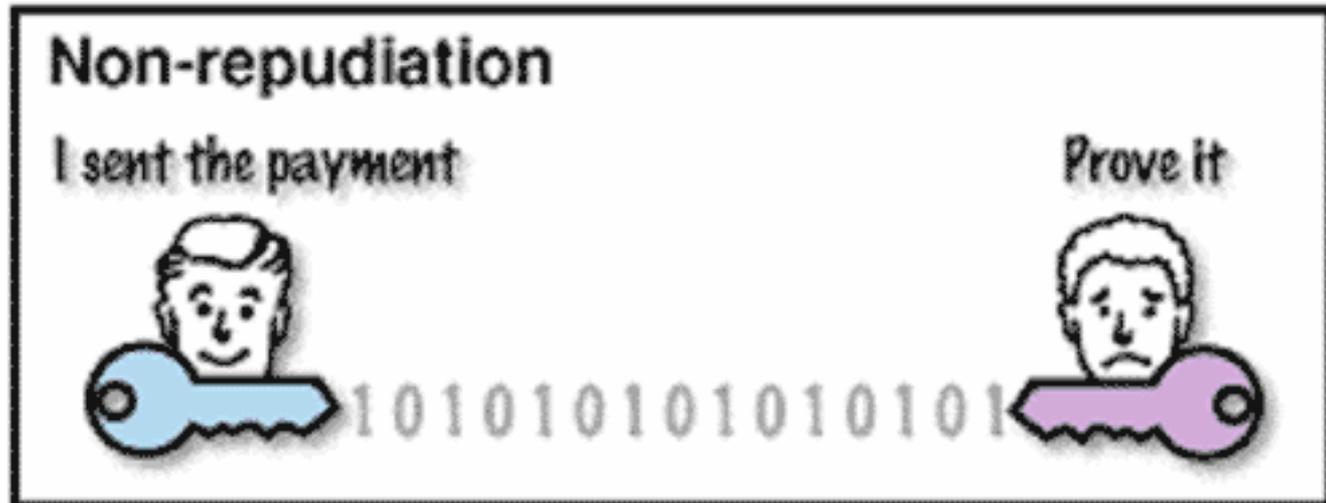


Pre-M6: Cryptography 101

Four Enablements of Cryptography: Non-repudiation



- ✓ **Non-repudiation: Proof** with authority of the origin, delivery, submission or transmission of information. Cryptography can be used to provide undeniable proof that, say, a certain customer actually placed an order several weeks back.



Pre-M6: Cryptography 101

Private/Secret Key Cryptography



- ✓ **Key** (or single password) **known only** to the party or parties that exchange secret messages.
- ✓ **Examples** of private key software – Winzip, PKZip

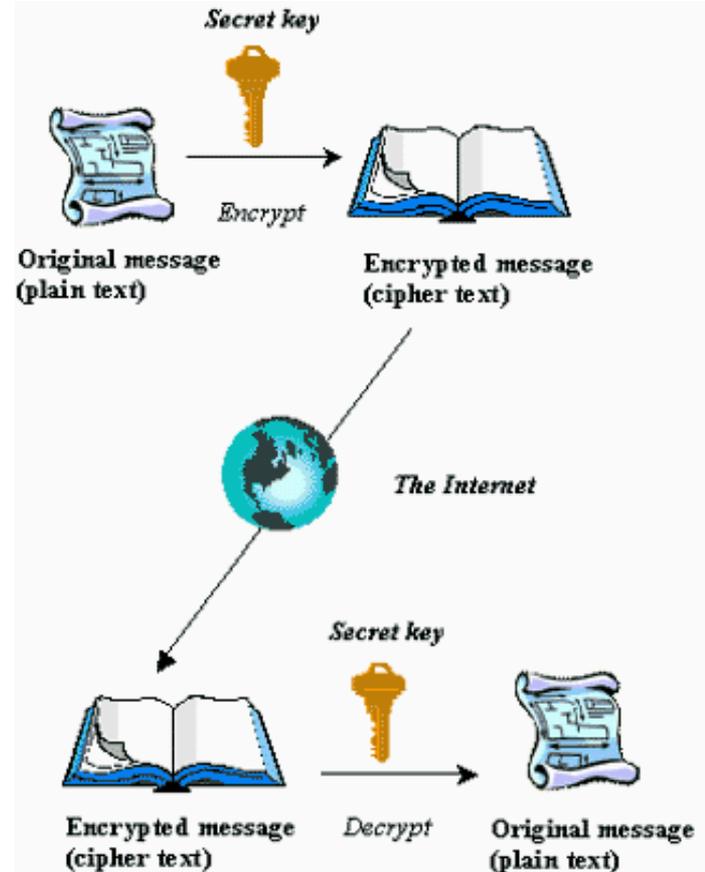


Figure Symmetric Encryption uses a single secret key to encrypt and decrypt messages

Pre-M6: Cryptography 101

Public Key Cryptography



- ✓ A public key is a value provided by some designated authority as a key that, **combined** with a **private key** derived from the **public key**, can be used to effectively encryption messages and digital signature.
- ✓ A system for using public keys is called a **public key infrastructure (PKI)**.
- ✓ An example of a public key cryptography software – PGP.

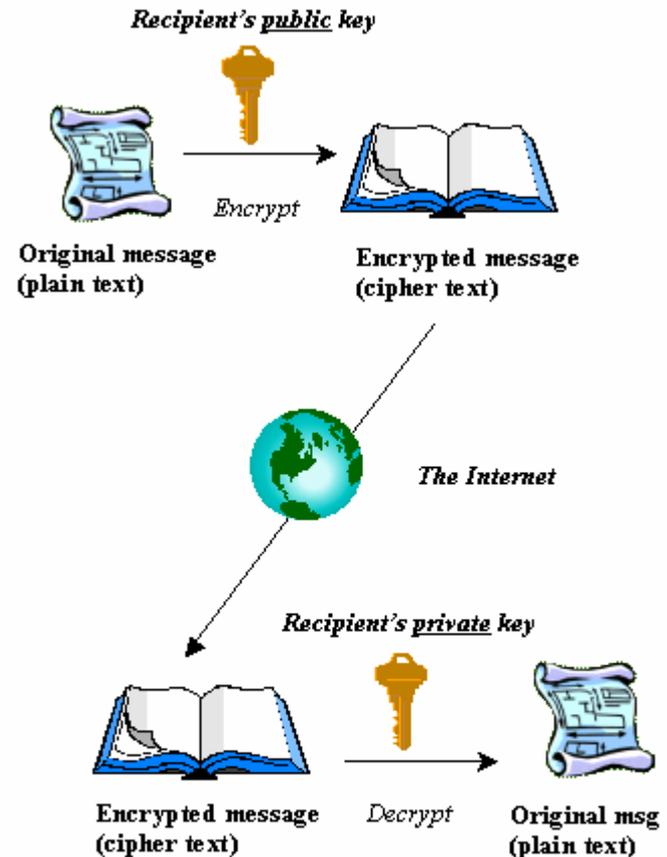


Figure Using a pair of keys to encrypt and decrypt a message

Pre-M6: Cryptography 101

Public Key Cryptography: Digital Signature



- ✓ A **digital signature** is an **electronic** rather than a written **signature** that can be used by someone to **authenticate** the identity of the sender of a message or of the signer of a document.
- ✓ It can also be **used to ensure** that the **original content** of the message or document that has been conveyed is **unchanged**.
- ✓ Actual process is much more complex involving message digest (not shown here).

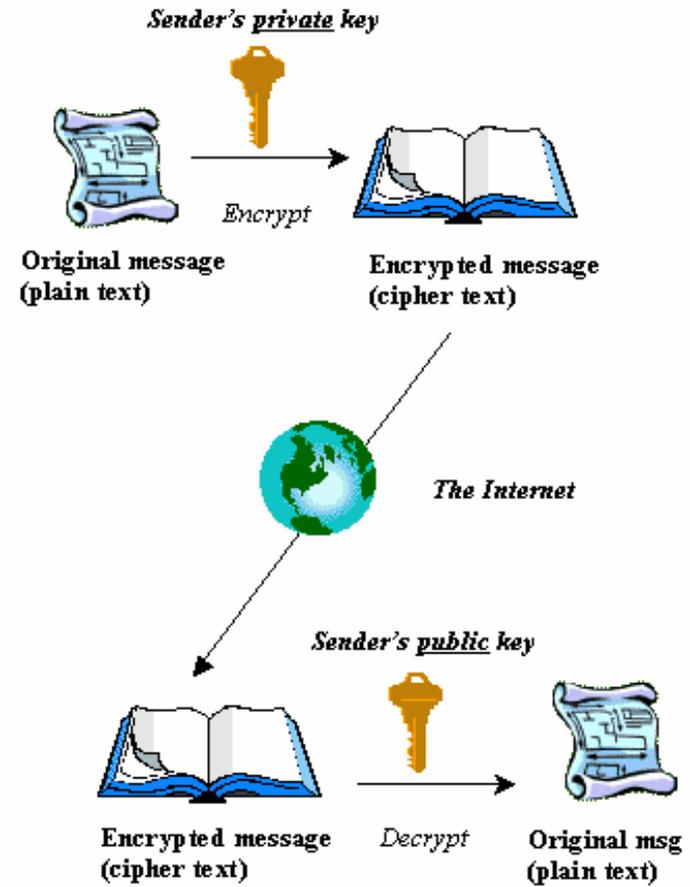


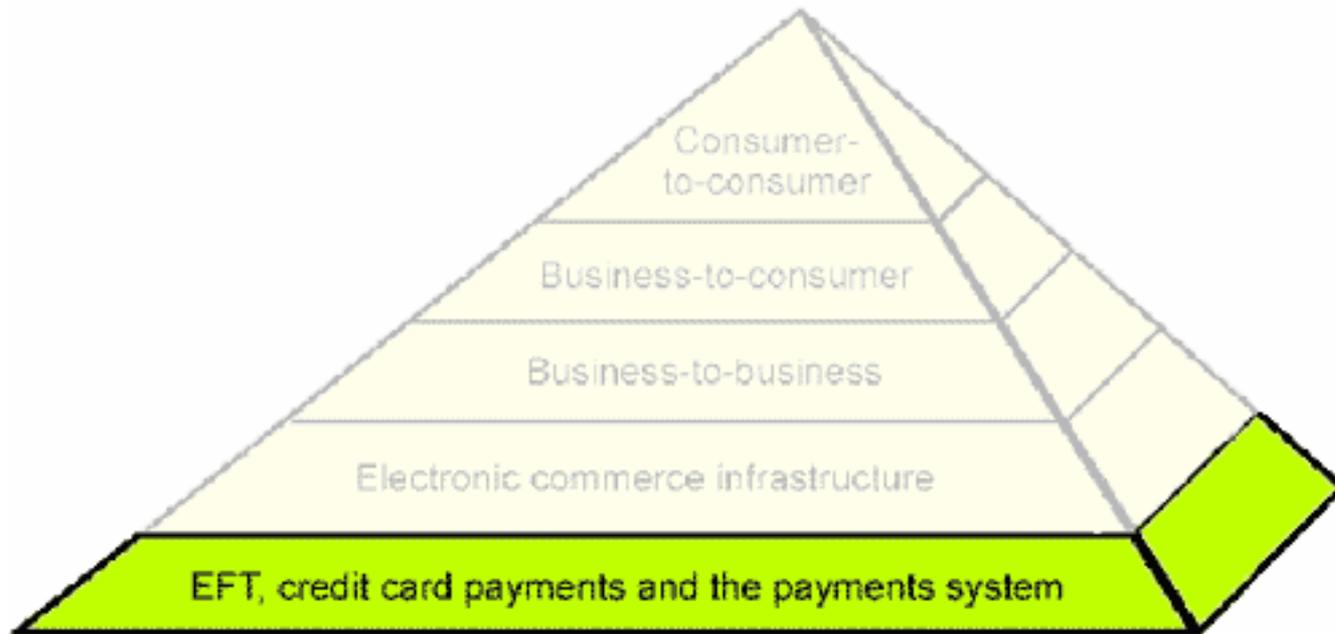
Figure Using a 'opposite' pair of keys to encrypt and decrypt a message

M6: Internet Payment & Banking

Internet Payment Systems



- ✓ **Electronic payment** is the **foundation** of systems for electronic commerce.



OECD 1997b, *Measuring E-commerce*, Committee for Information, Computer and Communications Policy, Paris, OCDE/GD(97)185, p. 19.

M6: Internet Payment & Banking

Internet Payment Systems (cont)



- ✓ Broadly speaking, electronic payment is a **financial exchange** that takes place **online** between **buyer** and **sellers**.
- ✓ The content of this exchange is usually some form of **digital financial instrument** (eg. credit cards, digital cash, or electronic cheques) that is backed by a bank or an intermediary.
- ✓ Four payment systems within the syllabus:
 - o Credit Card-based System
 - o Digital Cash System
 - o Electronic Cheque System
 - o Smart Card System

M6: Internet Payment & Banking

1. Credit Card-based System



✓ The Players

✓ **Cardholder**

✓ **Merchant** (seller)

✓ **Issuer** (your bank)

✓ **Acquirer** (merchant's financial institution, acquires the sales slips)

✓ **Brand** (VISA, Master Card)



M6: Internet Payment & Banking



1. Credit Card-based System: Offline Usage Process

A **cardholder** requests the issuance of a card brand (like Visa and MasterCard) to an issuer bank in which the cardholder may have an account.

A plastic card is physically delivered to the **customer's address** by mail.

The **cardholder** shows the card to a merchant to pay a requested amount. Then the merchant asks for approval from the brand company.

The **acquirer bank** requests the issuer bank to pay for the credit amount.

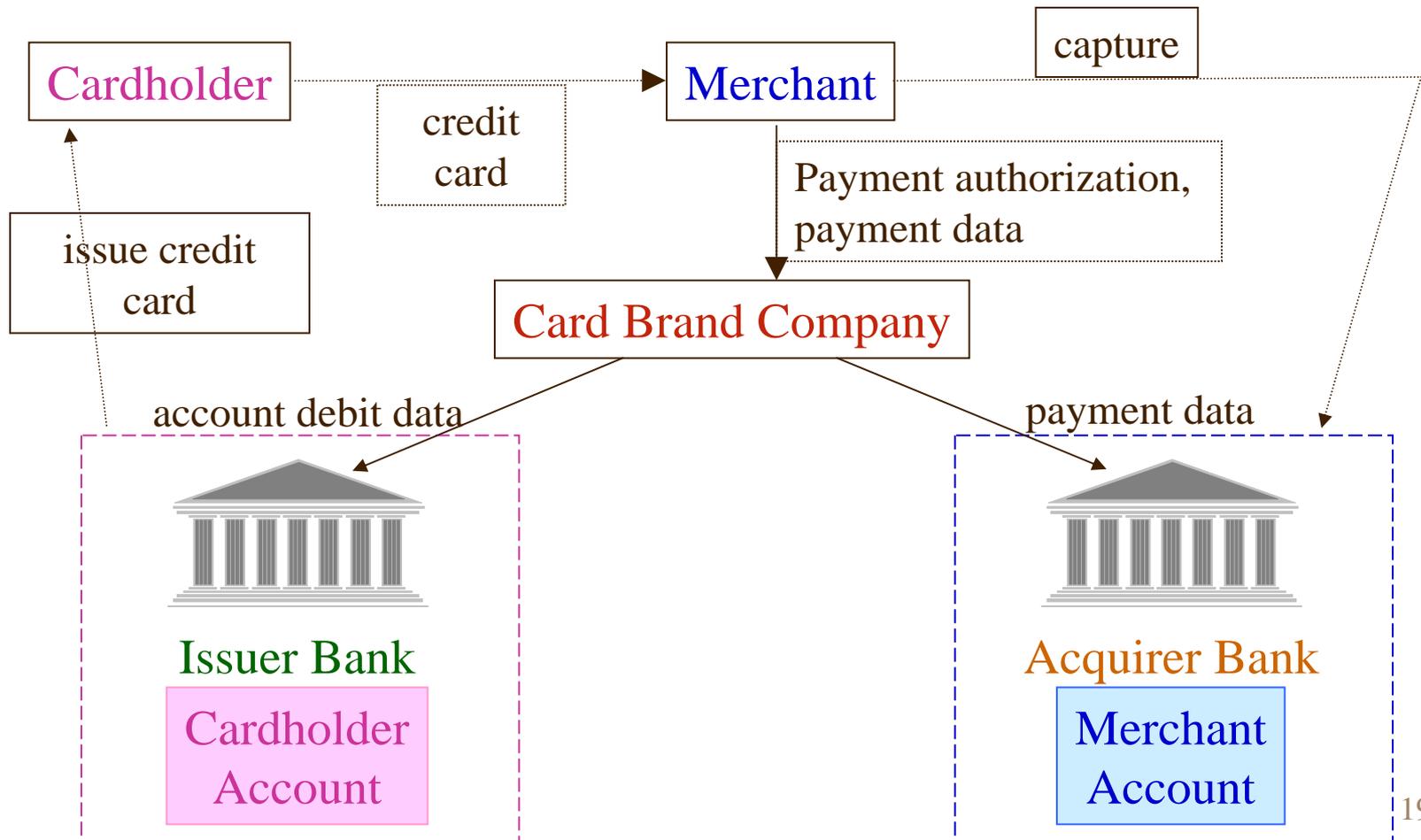
The authorization of card issuance by the **issuer bank**, or its designated brand company, may require customer's physical visit to an office.

The card can be in effect as the **cardholder** calls the bank for initiation and signs on the back of the card.

Upon the approval, the **merchant** requests payment to the merchant's acquirer bank, and pays fee for the service. This process is called a "capturing process"

M6: Internet Payment & Banking

1. Credit Card-based System: Offline & Online Procedure



M6: Internet Payment & Banking

STT, SEPP, SET



- ✓ Originally two major protocols were developed..
- ✓ **SEPP**: Mastercard, IBM and Netscape joined to develop the Secure Electronic Payment Protocol (SEPP). **STT**: Visa and Microsoft worked together to establish the Secure Transaction Technology (STT). In early 1996, these two groups agreed to establish a single payment system which became SET.
- ✓ In other words, SET is the superset of the earlier proposed payment systems STT and SEPP.
- ✓ **SET** (Secure Electronic Transaction) protocol is an Internet standard designed to provide a high level of security and anti-fraud assurances for payment card transactions over the Internet.
- ✓ SET makes use of Netscape's Secure Sockets Layer (SSL (Secure Sockets Layer)), Microsoft's Secure Transaction Technology (STT), and Terisa System's Secure Hypertext Transfer Protocol (S-HTTP).

M6: Internet Payment & Banking

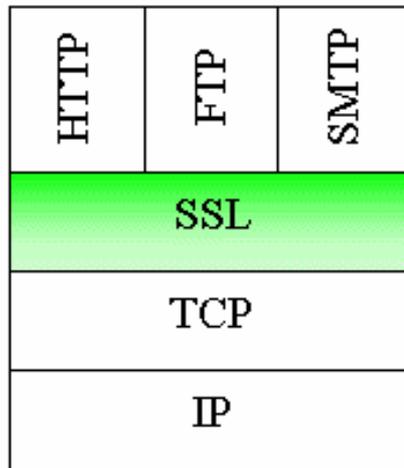
SSL, HTTPS, S-HTTP



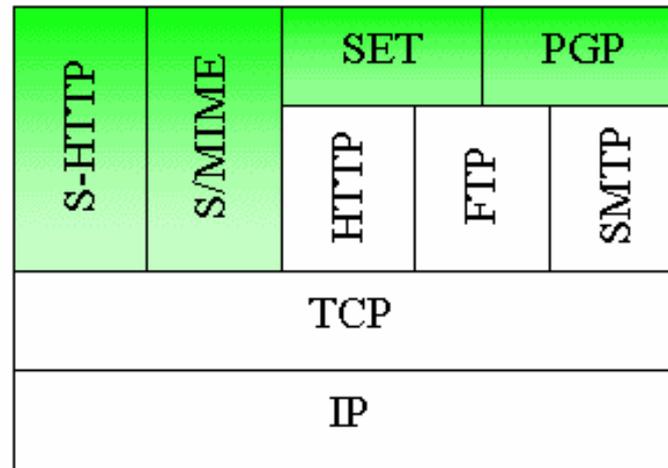
- ✓ Secure Sockets Layer, a protocol developed by Netscape for **transmitting private documents via the Internet**. SSL works by using a **private key** to encrypt data that's transferred over the SSL connection.
- ✓ Both Internet Explorer and Netscape Navigator/Comm ( ) support SSL, and many Web sites use the protocol to obtain confidential user information, such as credit card numbers. By convention, Web pages that require an SSL connection start with https instead of http
<https://vs01.tvsecure.com/~vs01000/manual/manual3.html>
- ✓ S-HTTP is an **extension to the HTTP** protocol to support **sending data securely** over the World Wide Web.
- ✓ S-HTTP was developed by Enterprise Integration Technologies (EIT), which was acquired by Verifone, Inc. in 1995.
- ✓ **S-HTTP secures data, while SSL secures the communications channel.**

M6: Internet Payment & Banking

Security with SSL vs S-HTTP/S-MIME/SET/PGP



Security with SSL



Security with S-HTTP,S/MIME,SET,PGP

Application layer

Session layer

Transport layer

Network layer

M6: Internet Payment & Banking



2. Digital Cash System

- ✓ A system that allows a person to pay for goods or services by transmitting a **number** from one computer to another.
- ✓ Like the serial numbers on real dollar bills, the **digital cash numbers are unique**. Each one is **issued by a bank** and represents a specified sum of **real money**.
- ✓ One of the key features of digital cash is that, like real cash, it is **anonymous** and **reusable**. That is, when a digital cash amount is sent from a buyer to a vendor, there is **no way to obtain information about the buyer**. This is one of the key differences between digital cash and credit card systems.

M6: Internet Payment & Banking



2. Digital Cash System: eCash Demo

- ✓ The **demonstration** shows what shopping experience will be like when pay with eCash currency.
 1. Will first see a Web page for the demo merchant Planet Coffee. This page looks like a typical online Web store.
 2. Click one of the Buy Me Now buttons to see how easy it is to buy coffee or a French press using eCash.
 3. Will then see a payment screen that shows the product selected, the total cost, and a variety of payment options.
 4. Select the payment option, and then click the Submit Payment button.
 5. Will be asked if agree to the payment. After clicking Yes, will receive the order confirmation.

M6: Internet Payment & Banking

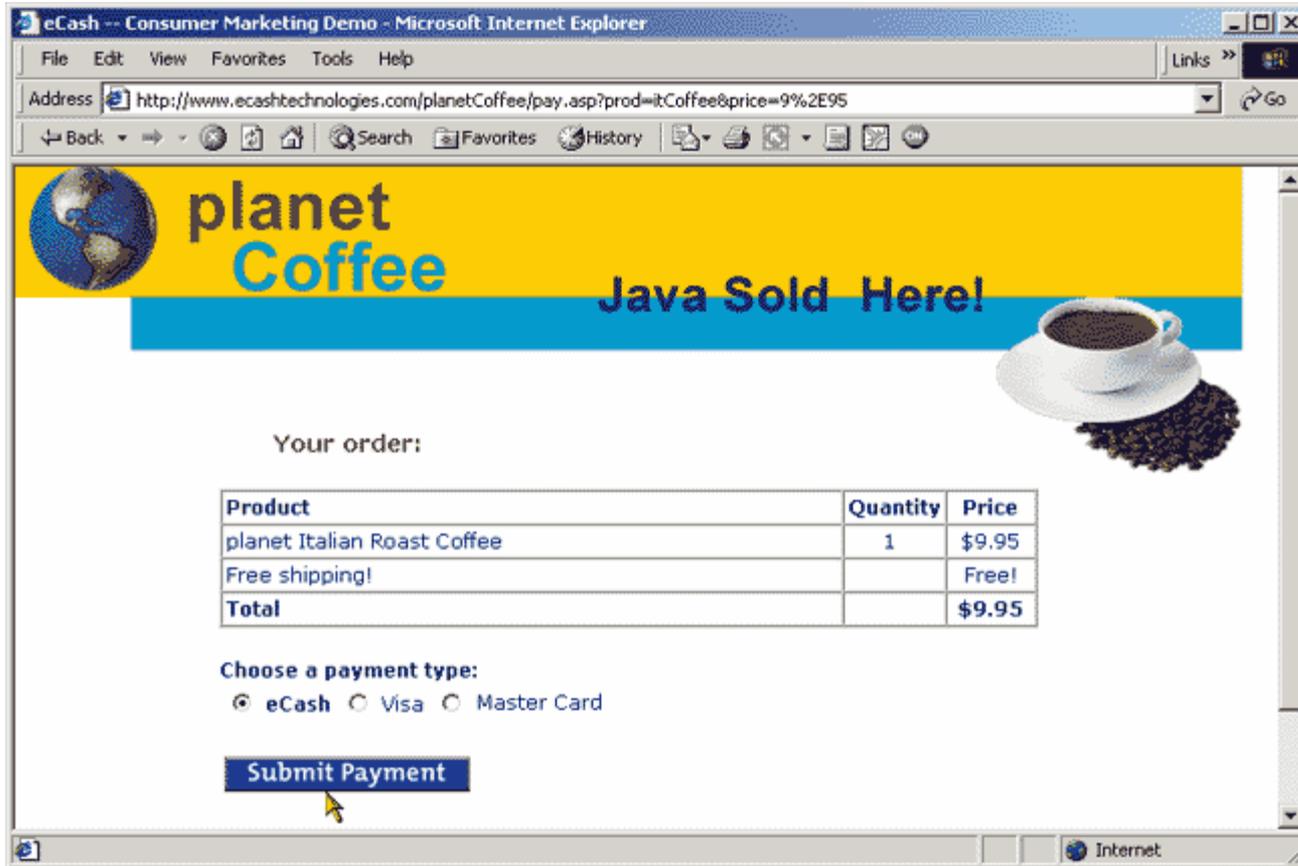
2. Digital Cash System: eCash Demo (cont)



1. Will first see a Web page for the demo merchant Planet Coffee. This page looks like a typical online Web store.
2. Click one of the Buy Me Now buttons to see how easy it is to buy coffee or a French press using eCash.

M6: Internet Payment & Banking

2. Digital Cash System: eCash Demo (cont)



3. Will then see a payment screen that shows the product selected, the total cost, and a variety of payment options.
4. Select the payment option, and then click the Submit Payment button.

M6: Internet Payment & Banking

2. Digital Cash System: eCash Demo (cont)



eCash@ Payment request

Send payment to: planetCoffee.com 

Amount: \$9.95

Description: Purchase from planet
Coffee Time: Sunday,
August 13,
2000 3:41:56 AM

Agree to this payment?

eCash -- Consumer Marketing Demo - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www.ecashtech.com/planetCoffee/confirm.asp?prod=planet+Italian+Roast+Coffe> Go

Back Forward Stop Home Search Favorites History

 **planet
Coffee** **Java Sold Here!**

Order Confirmation

Thank you.
Your order for 1 planet Italian Roast Coffee, \$9.95, is being processed by our shipping department. It will be shipped to the current address on file. Please allow 3 to 5 days for your order to arrive.

Note: You have just completed the eCash demo. We hope we were able to demonstrate how easy it is to use eCash. Please send us an e-mail message at news@ecashtech.com if you would like to sign up for our eCash news e-mail list. You can also let us know if you would like to be contacted as soon as a financial institution offers eCash products and services in your area. Please include your city, state.

Internet

5. Will be asked if agree to the payment. After clicking Yes, will receive the order confirmation.

M6: Internet Payment & Banking

3. Digital Cheque System



- ✓ A **digital check** has many of the same features as a paper check. It functions as a message to the sender's bank to transfer funds, is given to a receive, and the receiver presents it to the bank to obtain funds.
- ✓ However, with electronic checks, **senders can protect against fraud by encoding their account number with the bank's public encryption key**, so the number is not revealed to the merchant.
- ✓ **Digital certificates (DC)** can be used to authenticate the payer, bank, and bank account. DC is an **attachment to an electronic message** used for **security purposes**. The most common use of a digital certificate is to **verify that a user sending a message is who he or she claims to be**, and to provide the receiver with the means to encode a reply.
- ✓ CheckFree Demo: <http://www.checkfree.com/>

M6: Internet Payment & Banking

3. Digital Cheque System: Checkfree Demo



Pay any bill - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

The demo will run automatically or you can control it here: [play] [stop] [next]

Home E-Bills **Write a Check** Quick Pay Payment History Repeating Payments Payee Setup My Profile Help

Joanie Cunningham Contact Us Log Off

Write a Check ?

Enter the payment information below, then click **Pay Now** to send your E-Check.

Joanie Cunningham
1234 Happy Days Drive
Small Town, CA 12345

Payment Date*: 03/08/2000

Pay to the order of: Richie Cunningham - Brother Amount: \$ 30.00

From Bank Account: My Checking 123456-7

Pay Now

*The Payment Date is the date you can expect your payee to receive this payment.

Copyright © 2000, CheckFree Corporation. All rights reserved.

1/6: Writing a Digital Check

2/6: Click to "Pay Now"

Pay any bill - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

The demo will run automatically or you can control it here: [play] [stop] [next]

Home E-Bills **Write a Check** Quick Pay Payment History Repeating Payments Payee Setup My Profile Help

Joanie Cunningham Contact Us Log Off

Write a Check ?

Enter the payment information below, then click **Pay Now** to send the payment.

Joanie Cunningham
1234 Happy Days Drive
Small Town, CA 12345

Payment Date*: 03/08/2000

Pay to the order of: Richie Cunningham - Brother Amount: \$ 30.00

From Bank Account: My Checking 123456-7

Pay Now Click "Pay Now" to send your E-Check.

*The Payment Date is the date you can expect your payee to receive this payment.

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M6: Internet Payment & Banking

3. Digital Cheque System: Checkfree Demo (cont)



Get bills - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

The demo will run automatically or you can control it here: [play] [stop] [back] [forward]

Home E-Bills Write a Check Quick Pay Payment History Repeating Payments Payees & E-Billers Setup My Profile Help

Contact Us Log Off

| Unpaid E-Bills | Paid E-Bills | Joanie Cunningham

Unpaid E-Bills You have 2 new unpaid E-Bills.

In addition to paying your bills electronically, you'll be able to receive them that way, too.

E-Biller	Account Balance	View	Pay	Mark As Paid	Delete
BELLSOUTH BellSouth Save 10% on this bill now.	\$228.40	View	Pay	Mark As Paid	Delete
CUNA MUTUAL GROUP Cuna Mutual Group	\$225.00	View	Pay	Mark As Paid	Delete
FLORIDA POWER & LIGHT Florida Power & Light	\$25.35	View	Pay	Mark As Paid	Delete
COUNTRYWIDE Countrywide	\$112,293.83	View	Pay	Mark As Paid	Delete
AMOCO Amoco	\$262.07	View	Pay	Mark As Paid	Delete
COLUMBIA GAS OF OHIO Columbia Gas of Ohio Save \$5 - read your meter...	\$75.75	View	Pay	Mark As Paid	Delete

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3/6: List of Bills

4/6: List of Bills

Get bills - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

The demo will run automatically or you can control it here: [play] [stop] [back] [forward]

Home E-Bills Write a Check Quick Pay Payment History Repeating Payments Payees & E-Billers Setup My Profile Help

Contact Us Log Off

| Unpaid E-Bills | Paid E-Bills | Joanie Cunningham

Unpaid E-Bills You have 2 new unpaid E-Bills.

View all your unpaid e-bills, including payment due dates, amounts due and account balances, in one place.

E-Biller	Account Balance	View	Pay	Mark As Paid	Delete
BELLSOUTH BellSouth Save 10% on this bill now.	\$228.40	View	Pay	Mark As Paid	Delete
CUNA MUTUAL GROUP Cuna Mutual Group	\$225.00	View	Pay	Mark As Paid	Delete
FLORIDA POWER & LIGHT Florida Power & Light	\$25.35	View	Pay	Mark As Paid	Delete
COUNTRYWIDE Countrywide	\$112,293.83	View	Pay	Mark As Paid	Delete
AMOCO Amoco	\$262.07	View	Pay	Mark As Paid	Delete
COLUMBIA GAS OF OHIO Columbia Gas of Ohio Save \$5 - read your meter...	\$75.75	View	Pay	Mark As Paid	Delete

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M6: Internet Payment & Banking

3. Digital Cheque System: Checkfree Demo (cont)



Who got paid - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

The demo will run automatically or you can control it here: [Play] [Pause] [Stop]

Home | E-Bills | Write a Check | Quick Pay | **Payment History** | Repeating Payments | Payees & E-Bills Setup | My Profile | Help

| All Payments | Scheduled | Processed | Stopped & Failed | Joanie Cunningham | Contact Us | Log Off

Payment History - Processed

The following list of payments represents all payments

Payees	Description	Amount	Date	Account	Status	View	Inquire
BellSouth	Phone	\$98.50			Processed	View	Inquire
Amoco	Credit Card	\$70.00	02/07/1999	My Checking 123456-7	Processed	View	Inquire
Columbia Gas of Ohio	Gas	\$68.40	02/07/1999	My Checking 123456-7	Processed	View	Inquire
Cuna Mutual Group	Insurance	\$225.00	02/07/1999	My Checking 123456-7	Processed	View	Inquire
Florida Power & Light	Electric	\$38.30	02/07/1999	My Checking 123456-7	Processed	View	Inquire
Countrywide	Mortgage	\$1,104.00	02/07/1999	My Checking 123456-7	Processed	View	Inquire

Copyright © 1999, CheckFree Corporation. All rights reserved.

5/6: Status of Payment

6/6: Electronic view of actual bill

Get bills - Microsoft Internet Explorer

CheckFree Pay everyone you pay now Get bills that do more Find out who got paid and when exit the demo back to main

Forward: [Play] [Pause] [Stop]

Countrywide Customer Center Home Loan Statement

Main | Customer Center | Site Map | Contact Us

Loan Number: 1700169

Home Loan Details As of 01/15/99

Monthly payment breakdown as of 01/15/99

Principal and interest	\$779.49
Escrow payment amount	\$324.51
Total monthly home loan payment	\$1,104.00

Loan type and term

Loan type 30 Yr. Conv ARM w/PMI
Contractual remaining term 28 years, 1 month
Current interest rate 7.125%

Home loan activity since your last statement

Date	Description	Principal	Interest	Reduction	Escrow	Total
01/15/99	January pmt.	\$111.49	\$668.00	\$0.00	\$324.51	\$1,104.00

M6: Internet Payment & Banking

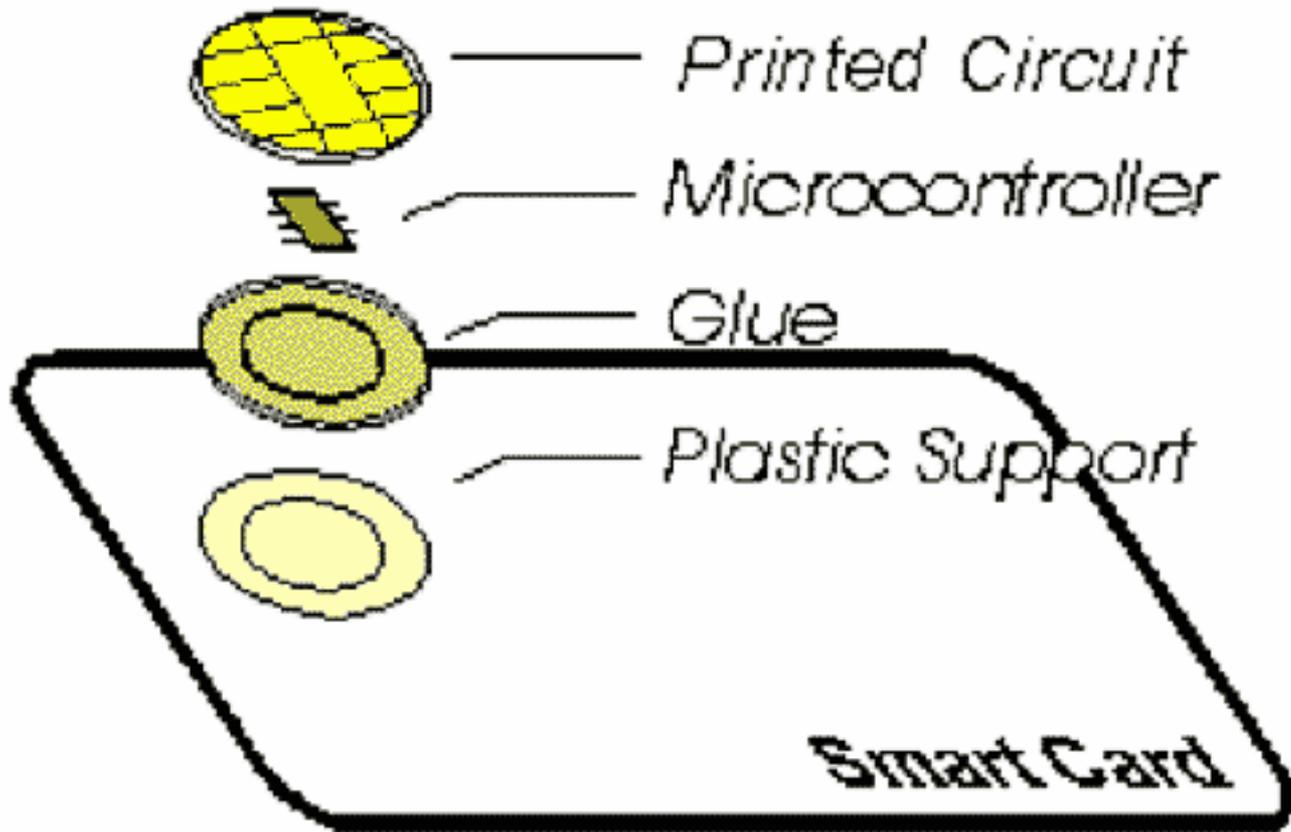


4. Smart Card System

- ✓ A **smart card** is a credit card-sized device that has an embedded **microprocessor**, a **small amount of memory**, and an **interface** that allows it to communicate with a workstation or network.
- ✓ Smart Cards provide **several capabilities**:
 - ✓ **Portable Storage** – card carried by owner and therefore can be used anywhere and the owner is not confined to a single computer.
 - ✓ **Secure Storage** – passwords, money value etc. can be stored without being easily tampered with.
 - ✓ **Trusted Execution Environment** – smart cards are not vulnerable to viruses and intrusion risks, and can therefore be given a greater degree of trust.

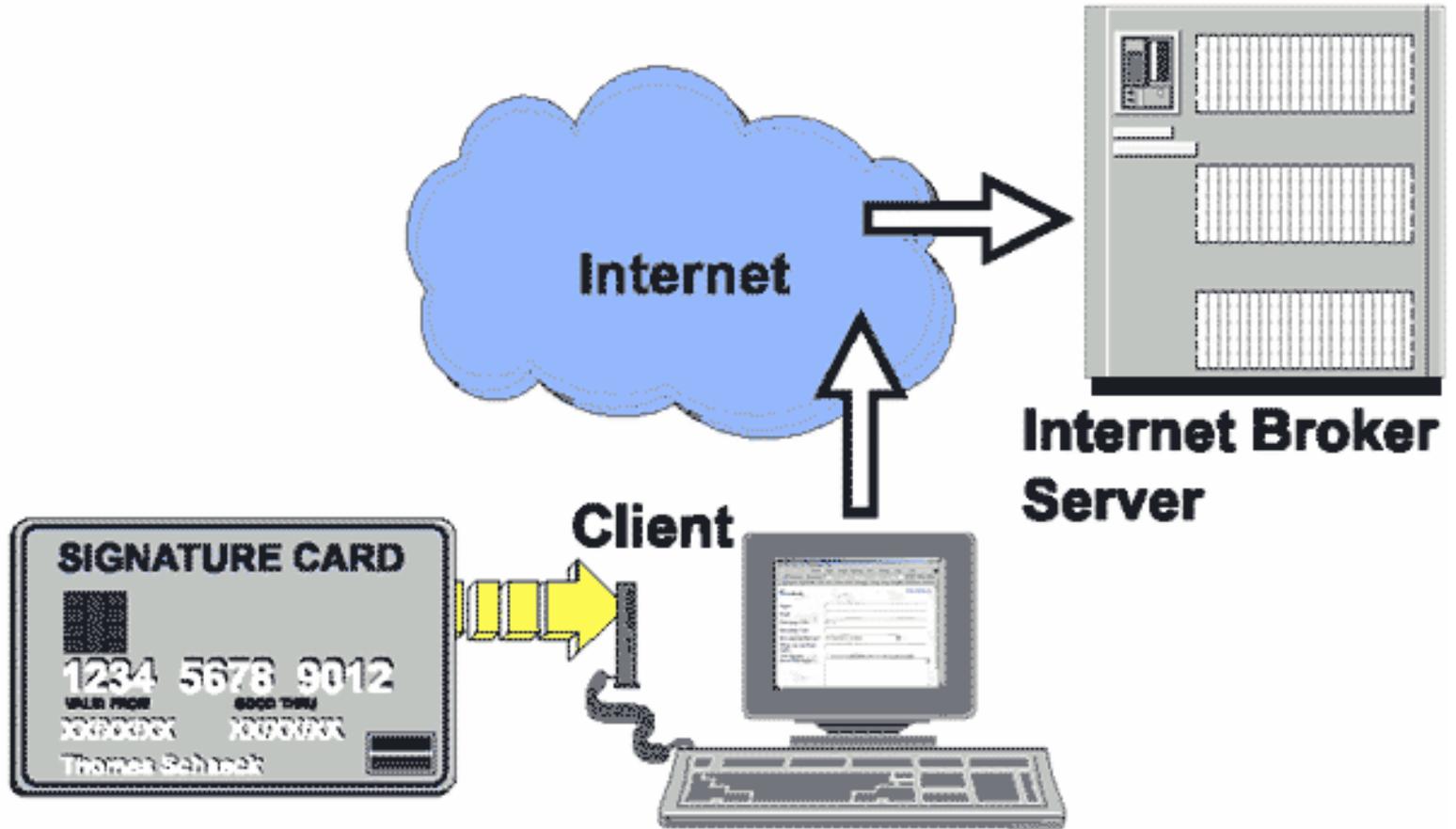
M6: Internet Payment & Banking

4. Smart Card System: Components



M6: Internet Payment & Banking

4. Smart Card System: Usage over the Web



M6: Internet Payment & Banking

4. Smart Card System: Mondex



- ✓ Mondex is an **innovative electronic cash system** that combines the best features of **traditional cash** with the **convenience of electronic payment**.
- ✓ Mondex electronic cash is **digitally stored** on a reloadable and highly secure **microprocessor computer chip**. The chip is embedded in a plastic card that looks and feels similar to a debit or credit card. (See Right →)
- ✓ Mondex will **enable retailers to receive Mondex cash immediately** at the time of transaction, without settlement or clearing. And, with its distinct flexibility and state-of-the-art security, Mondex is equally at home in the physical world of the corner store or the virtual world of electronic commerce.



M6: Internet Payment & Banking

Internet Banking: History & Functions



- ✓ **Historical Banking Industry**
 - o Physical Banking Offices & Buildings
 - o Paper Based Documents and Processes

- ✓ **1980's Banking**
 - o Telephone Banking
 - o Account Balances, Funds Transfer, Electronic Bill Payment
 - o ATM: Automated Teller Machines

- ✓ **Mid-Late 1990's Banking**
 - o Electronic Banking
 - o Web-Based Presence
 - o Competitive Pressure

- ✓ **Functions** provided by Banks:
 1. Handle Cash
 2. Investments
 - o Savings
 - o Securities
 3. Loans / Credit
 4. Bill Payments
 - o Paper Based (checking)
 - o Electronic
 5. Insurance

M6: Internet Payment & Banking

Internet Banking: Transaction Costs



Banking Transaction Costs

	<i>Average Cost / Transaction</i>	
Full Service Branch	\$	1.07
Telephone	\$	0.54
ATM	\$	0.27
PC Banking	\$	0.02
Internet	\$	0.01

[Source: Booz Allen & Hamilton Banking Survey; July , 1996]

M6: Internet Payment & Banking

Internet Banking: 4 Phases – Services & Benefits



	<i>Phase One: Marketing and Promotion</i>	<i>Phase Two: Light Interactivity</i>	<i>Phase Three: Full Transactions and Services</i>	<i>Phase Four: Strategic Usage</i>
Focus	<i>Marketing Web site</i>	<i>Customer acquisition</i>	<i>Banking functionality</i>	<i>Strategic change</i>
Primary Services	<ul style="list-style-type: none"> ● Published information on bank services ● Branch / ATM map ● Customer service e-mail 	<ul style="list-style-type: none"> ● Loan calculators ● Credit card applications ● Savings, checking account applications ● Financial Planning articles, advice 	<ul style="list-style-type: none"> ● Account look-up, balances, transfers ● Bill payment ● Car loans, credit cards, mortgages ● Statement review ● Cleared check presentment 	<ul style="list-style-type: none"> ● Sophisticated cross-selling of new services ● Customer profitability analysis ● Bill presentment & payments
Primary Benefit	<ul style="list-style-type: none"> ● Provide information to customers and prospective customers 	<ul style="list-style-type: none"> ● Reducing paperwork ● Low-cost ways to attract and impress customers 	<ul style="list-style-type: none"> ● Retention of existing customers ● Attracting high-value customers ● Reduction in service costs 	<ul style="list-style-type: none"> ● Increased service offerings ● New revenue opportunities ● Increased margins

M6: Internet Payment & Banking

Internet Banking: Disadvantages



- ✓ **New developing technology:** Internet Banking is a developing technology supporting self-service delivery channel. Developing technologies such as Internet Banking, though, run the **risk of getting too far of ahead** of the banks; therefore, the banking industry will not be able to sell to the customer.
- ✓ **Unknown Strategy:** The banking industry's biggest challenge is in establishing an electronic banking strategy and fully understanding its options and implications. The Internet is a **new alternative delivery channel**, which **requires new thinking and marketing efforts**.
- ✓ **Investment Cost:** The **initial cost** investment of Internet Banking technology is **higher** than the other forms of alternative delivery systems. Due to inexperience, banks that attempted to establish Web home pages run up against major problems.

M6: Internet Payment & Banking

Internet Banking: Disadvantages (cont)



- ✓ **Security:** The Internet is a security **nightmare** because of its characteristics: public, open, network of peer to peer networks, flat and mesh topology, connectionless datagram routing, no central authority, protocols based on mutual trust, and naïve users. Banks need to **establish an infrastructure** that incorporates both **security policies** and **management staff to support information security**.
- ✓ **User Knowledge Barrier:** **Not everybody** has the **expertise** needed in order to access to home banking in the way it is today. A **minimum knowledge on PC's an Internet is needed** and this suppose a barrier of access for many users.

M6: Internet Payment & Banking

Internet Banking: HSBC Demo



DEMO! - Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER PAY BILLS MAIL & SERVICES

Internet Banking From HSBC Bank USA SIGN UP

LOG IN - INTERNET BANKING

Enter your Customer ID and Password and click Enter.

CUSTOMER ID:

PASSWORD:

Forgot your password? Problems logging in?
Call us at 1-800-975-HSBC (1-800-975-4722).

First Time User: [Register Now](#)

Don't have an account?
Open one today by calling 1-800-975-HSBC (1-800-975-4722) or visit one of our [branches](#).

LOG IN

Enter your Customer ID and password in the boxes provided, then select "Enter." (During the registration process, you chose your own unique Customer ID and password.) If you forget your password, you can call us at 1-800-975-HSBC (4722).

1/8: Login Screen

DEMO! - Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER PAY BILLS MAIL & SERVICES

Internet Banking From HSBC Bank USA SIGN UP

HSBC Bank USA Internet Banking

site: <https://www.banking.us.hsbc.com>

HSBC

HSBC Bank USA

- View Accounts
 - Account Summary
 - Account Detail
 - Transaction Search
 - Download a File
- Transfers
- Pay Bills
- E-mail

VIEW ACCOUNTS - ACCOUNT SUMMARY

Hello, Lee B. Customer

The "Help" and "Glossary" sections contain useful information and terms.

LOG IN

Once you log in, your navigation options appear in the gray column on the left, and your Account Summary appears on the right. You can also access more information by clicking on the red underlined text on the screen. If you have any questions on Internet Banking, use the "Help" and "Glossary" sections or call us at 1-800-975-HSBC (4722).

EXIT

2/8: View Account

M6: Internet Payment & Banking

Internet Banking: HSBC Demo (cont)



3/8: Account Summary

VIEW ACCOUNTS

The Account Summary lists all the HSBC Bank USA accounts you have enabled for Internet Banking. The balances are in real time... if you withdraw funds during lunch, your account will reflect the new balance when you return! Deposit accounts are listed under the black tab and credit/loan accounts are listed under the red tab. Investment balances are available under the green tab.

Your account summary below lists balances for the accounts you have enabled for Internet Banking. Click on the Product Name/nickname to view account details. You would like to customize your account names by creating nicknames of up to 15 characters. You can sort your accounts by clicking on any column heading. The Account of Interest is highlighted in red.

Account	Product Name/Nickname	To-Click
Certificate of Deposit Account 001491326	1.2 YEAR CD	To-Click
Checking Account 001312464	EXTRAVANTAGE	
Savings Account 001522361		
Checking Account 005363055	EXTRAVANTAGE	

Click on the Product Name/Nickname to view details of your account.



4/8: Transfer between accounts

TRANSFER

You can easily transfer money from your deposit accounts, your credit card, your home equity line. You can also make quick payments to your HSBC credit card, loan, or mortgage account by transferring funds into those accounts at any time! Transfers can be scheduled to occur automatically at regular intervals.

Transfer funds from one account to another by selecting the accounts and entering the transfer amount. Click Enter to complete transfer, or Clear to reset.

Transfer From Account: [EXTRAVANTAGE, 001312464]

Transfer To Account: [EXTRAVANTAGE, 001312464]

Amount: []

*How Often: [One-Time]

*Total Number of Transfers: []

*Example: If you select 4 transfers, this transfer will occur on the Transfer Date.

Transfer Date: [06/05/2000] [Pickup Calendar](#)

[Enter] [Clear]

[Go to Top](#)

EXIT

Make quick payments by transferring money into your HSBC credit card, loan or mortgage account.

M6: Internet Payment & Banking

Internet Banking: HSBC Demo (cont)



DEMO!-Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER **PAY BILLS** MAIL & SERVICES

Internet Banking From HSBC Bank USA → SIGN UP

PAY BILLS - ADD A PAYEE

To add a Payee, complete the following information, then click Enter. If you don't have an account number with a Payee, enter N/A.

Payee:

Address:

City:

State: Zip:

Phone Number: () -

Your Account Number with Payee:

Payee Nickname:

PAY BILLS

Enjoy the ease of paying your bills online! No need to buy stamps or write checks. When you make a payment, your balance is automatically reconciled, so you know your balance at all times. You can pay anyone from a friend to your phone bill! To add a new payee, just fill in the payee name, address and account number information.

DEMO

5/8: Adding a payee

DEMO!-Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER **PAY BILLS** MAIL & SERVICES

Internet Banking From HSBC Bank USA → SIGN UP

PAY BILLS - ONE-TIME PAYMENTS

To schedule a one-time payment(s), select the Pay from Account, complete the following information and click Enter. Please select a process date that is at least five (5) business days prior to your payment due date to avoid any late charges.

Pay from Account:

Payee	Process Date (mm/dd/yyyy)	Payment Amount
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

PAY BILLS

To make a payment, select an account to pay from, and a payee on your list. Then choose a date for the payment to be processed. Be sure to schedule your payments at least five business days before the due date to allow enough time for the payment to reach the payee.

DEMO

6/8: Making payment

To pay a bill, click on the payee name, choose a date and an amount.

Use the pop-up calendar to help you select a date.

EXIT

M6: Internet Payment & Banking

Internet Banking: HSBC Demo (cont)



DEMO! Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER PAY BILLS MAIL & SERVICES

Internet Banking From HSBC Bank USA SIGN UP

E-MAIL - READ MAIL

Read or reply to an e-mail by clicking on the Subject. Delete a message by checking the "Delete Message" box, then click **Delete**. To create and send new messages click **E-Mail HSBC** below.

Subject: TRANSFER NOT AL... Date: 05/02/01

All your e-mail exchanges within Internet Banking are secure.

E-Mail HSBC

Go to Top

OTHER SERVICES

The "E-mail" section allows you to send and receive e-mail with the Bank or even dispute a credit card transaction. The "Customer Service" section allows you to order a copy of a statement or check or update your contact information. To add Bill Pay use the "Change Profile" menu option, and then click on "Add Bill Pay Service".

7/8: Read mail

8/8: Customer Information

DEMO! Internet Banking from HSBC Bank USA - Microsoft Internet Explorer

SECURITY LOG IN VIEW ACCOUNTS TRANSFER PAY BILLS MAIL & SERVICES

Internet Banking From HSBC Bank USA SIGN UP

CUSTOMER SERVICE - CHANGE PERSONAL INFO

To access an account, select an item listed below

- [Change Contact Information](#)
- [Change Customer ID](#)
- [Change Password](#)
- [Change Account Nickname*](#)

CUSTOMER SERVICE

You can change your preferences for how you'd like Internet Banking set up. Select the "Change Personal Info" link to change your password, change a nickname on an account, or change your contact information.

if you need to change your password or Customer ID, you can do so at any time.

EXIT

M7 Security Issues in Electronic Commerce

Paper on "An Overview of Security Issues for Electronic Commerce and Electronic Service Delivery"



An Overview of Security Issues for Electronic Commerce and Electronic Service Delivery

Prepared as background information for the federal/provincial/territorial videoconference on information technology security
by M. Harrop,
AEPOS Technologies Corporation

March 12, 1998

Introduction

Effective security is a pre-requisite to the widespread use and acceptance of electronic commerce and electronic service delivery. As administrations and businesses seek to replace paper processes and transactions by their electronic equivalents, it will be necessary to establish broad agreement not only with respect to the transactions themselves and the way they are processed, but also with respect to the protective techniques used.

This background paper introduces some of the important general concepts and terminology of information technology (IT) security and then describes some of the specific techniques that have particular relevance to electronic service delivery and electronic commerce. The need for harmonization of techniques and processes to achieve wide-scale interoperability is also discussed.

A glossary of terms and a short bibliography are included.

Assets and Vulnerabilities

Class Activity 1: Assignment 2 Discussion

Weighting: 30%, Due: 25 September 2000



1. Choose one Web site from the different categories shown below:

- o Online Retail
- o Online Publishing
- o Health Care Industry Online
- o Travel and Transportation
- o RealEstate
- o Stock Market
- o Online Entertainment
- o Online Procurement
- o Online Professional Services
- o Financial Services Online

1.1 Describe the **specific benefits** that you think flow to this enterprise from **enabling this enterprise for e-Business**. These must be specific benefits which may vary from enterprise to enterprise.

1.2 With which **model** of e-Business does this enterprise comply? With which model should it comply?

1.3 Examine and comment on its **effectiveness** from the viewpoint of **Internet Marketing**. Your answer must be presented in the form of an essay.

Class Activity 1: Assignment 2 Discussion

Weighting: 30%, Due: 25 September 2000 (cont)



2. Choose an organization with which you are familiar but which has **no Web presence**. For example it could be your own enterprise or another enterprise that you know reasonably well.

2.1 Write a report to management which proposes **specific strategies** that should be adopted **to implement an e-business solution** to this organisation. Your report should produce **recommendations** along with **specific actions** that could then be used by Web developers to develop a Web site for the chosen organisation.

Class Activity 2: Reading

“Business Models on the Web”



BUSINESS MODELS ON THE WEB

Michael Rappa

Business models are perhaps the most discussed and least understood aspect of the web. There is so much talk about how the web changes traditional business models. But there is little clear-cut evidence of exactly what this means.

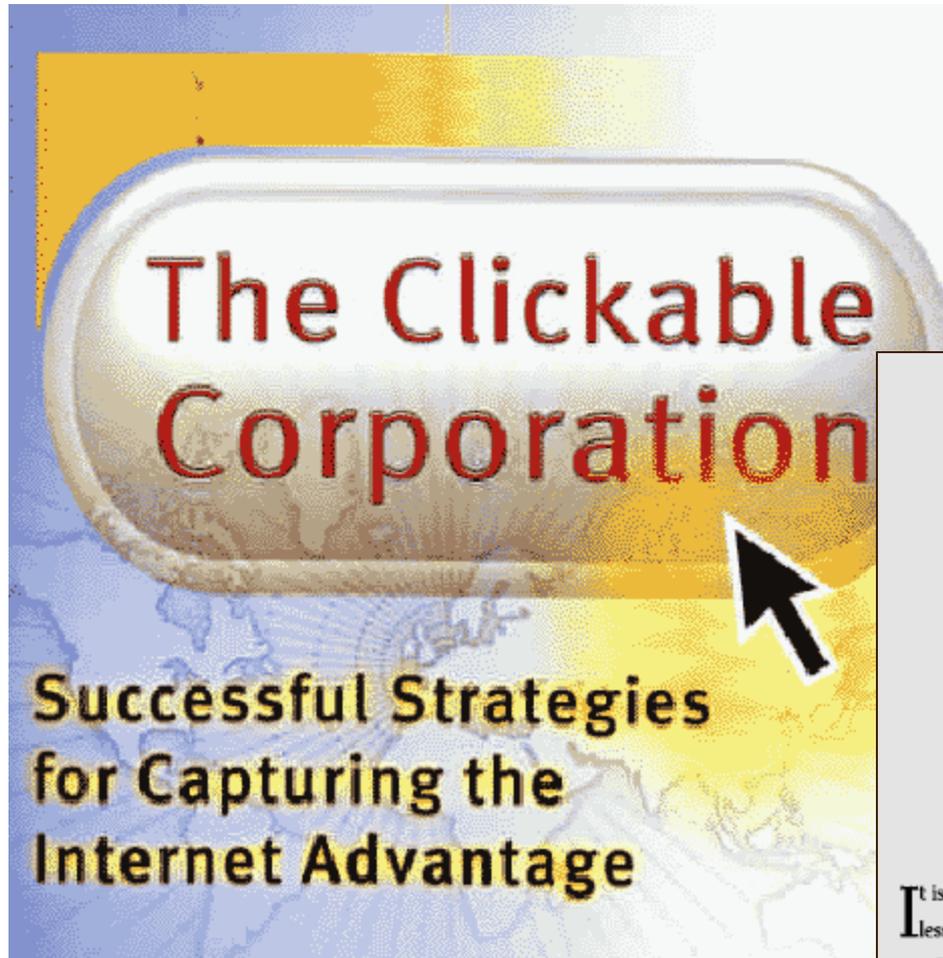
In the most basic sense, a business model is the method of doing business by which a company can sustain itself -- that is, generate revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain.

Some models are quite simple. A company produces a good or service and sells it to customers. If all goes well, the revenues from sales exceed the cost of operation and the

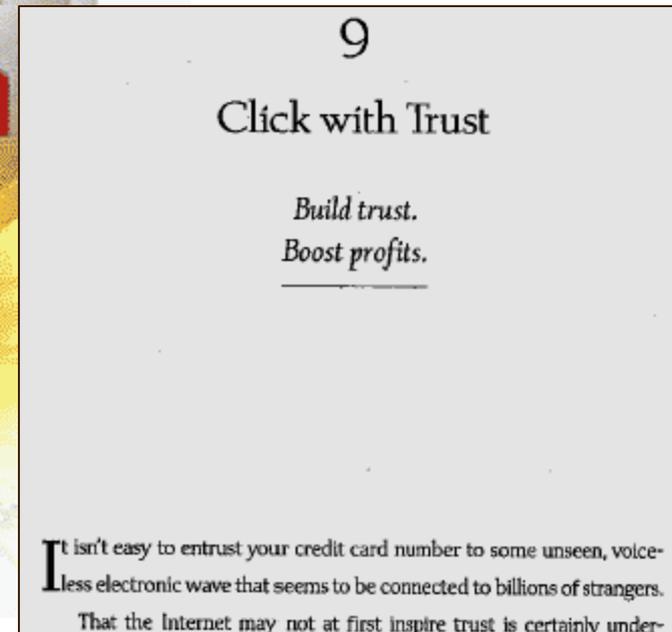


Class Activity 3: Case Studies (3x)

“Clickable Corporation”, Chp 9 – Click with Trust



- ✓ MetLife
- ✓ Wells Fargo
- ✓ Charles Schwabs



Additional Handouts for Lecture 3

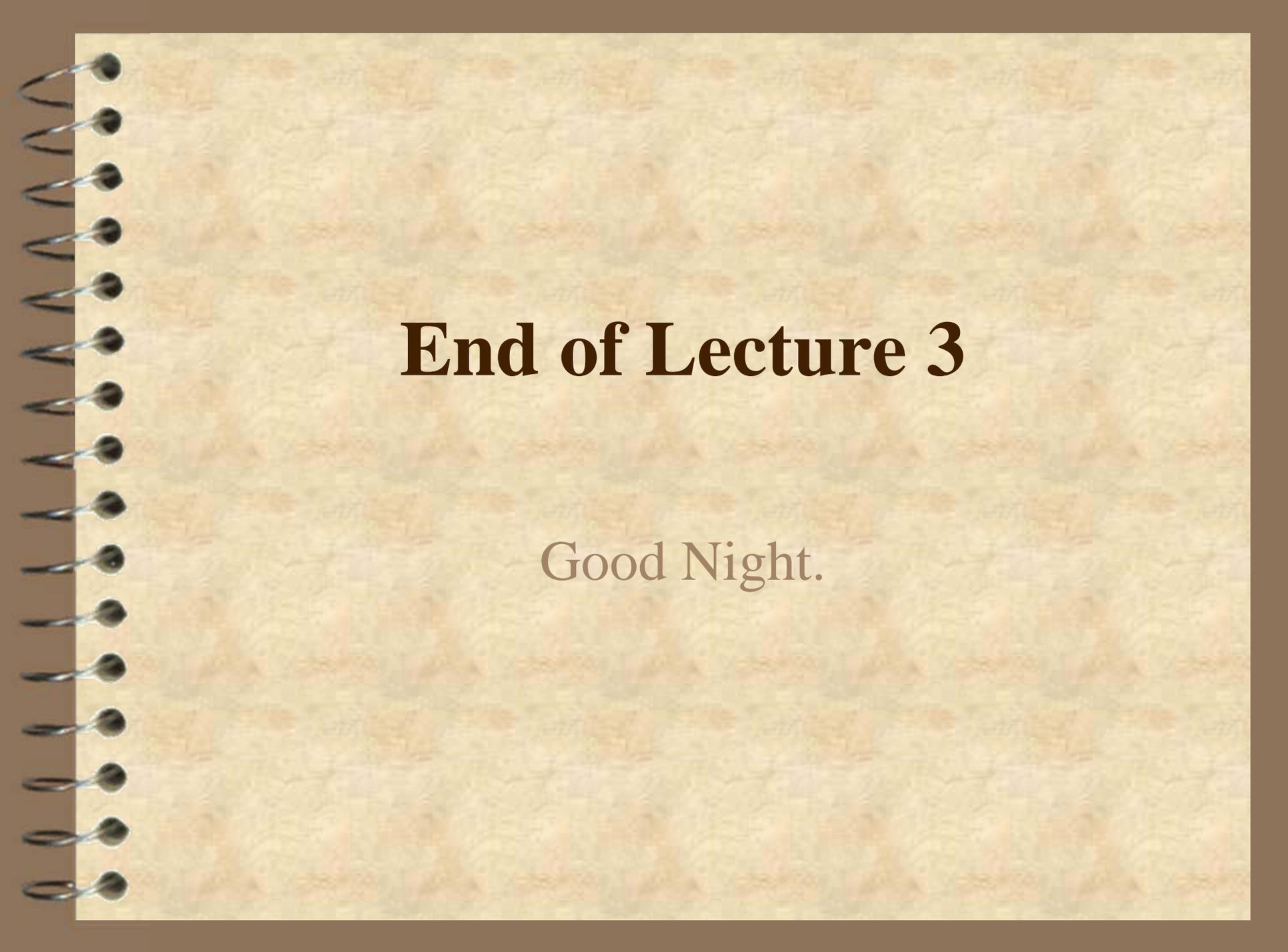


- ✓ 1. "An Overview of Security Issues for Electronic Commerce and Electronic Service Delivery"
- ✓ 2. Business Models on the Web
- ✓ 3. "Clickable Corporation", Chp 9 – Click with Trust

What's in Store for Lecture 4



- ✓ Module 8. Legal & Ethical Issues
- ✓ Module 9. Tax & Electronic Commerce
- ✓ Module 10. Government Policies
- ✓ Future Trends
- ✓ Case Studies, Discussion

A spiral-bound notebook with a light beige, textured cover. The spiral binding is on the left side. The text is centered on the page.

End of Lecture 3

Good Night.