

The Development Story of Fin-tech, Cashless Society and Electronic Payment in Korea

**Presented in
Iran-Korea Forum
September, 2017**

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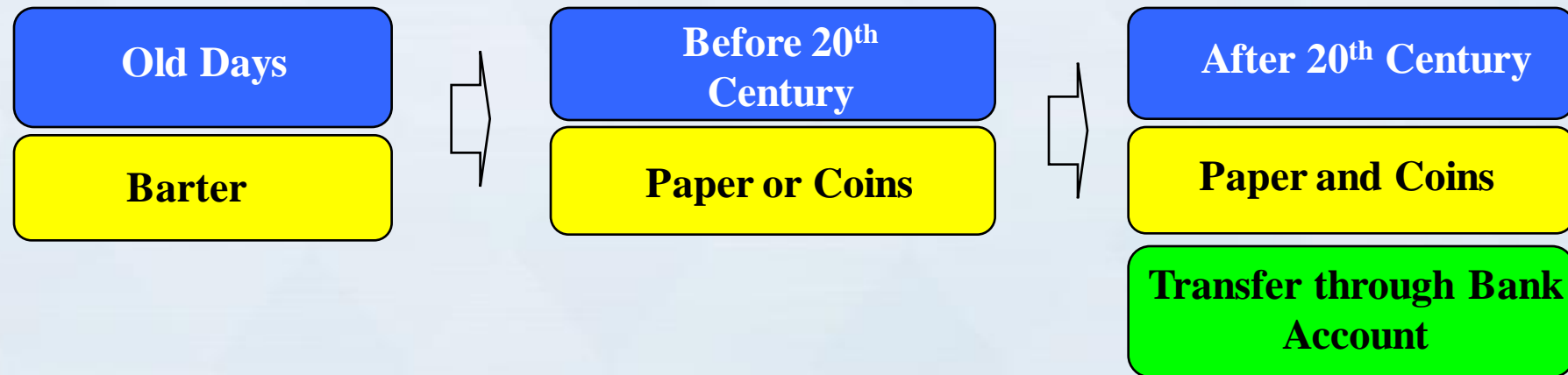
The Development Story of Fin-tech, Cashless Society and Electronic Payment in Korea

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1. What are Fin-tech and Electronic Payment? (1)

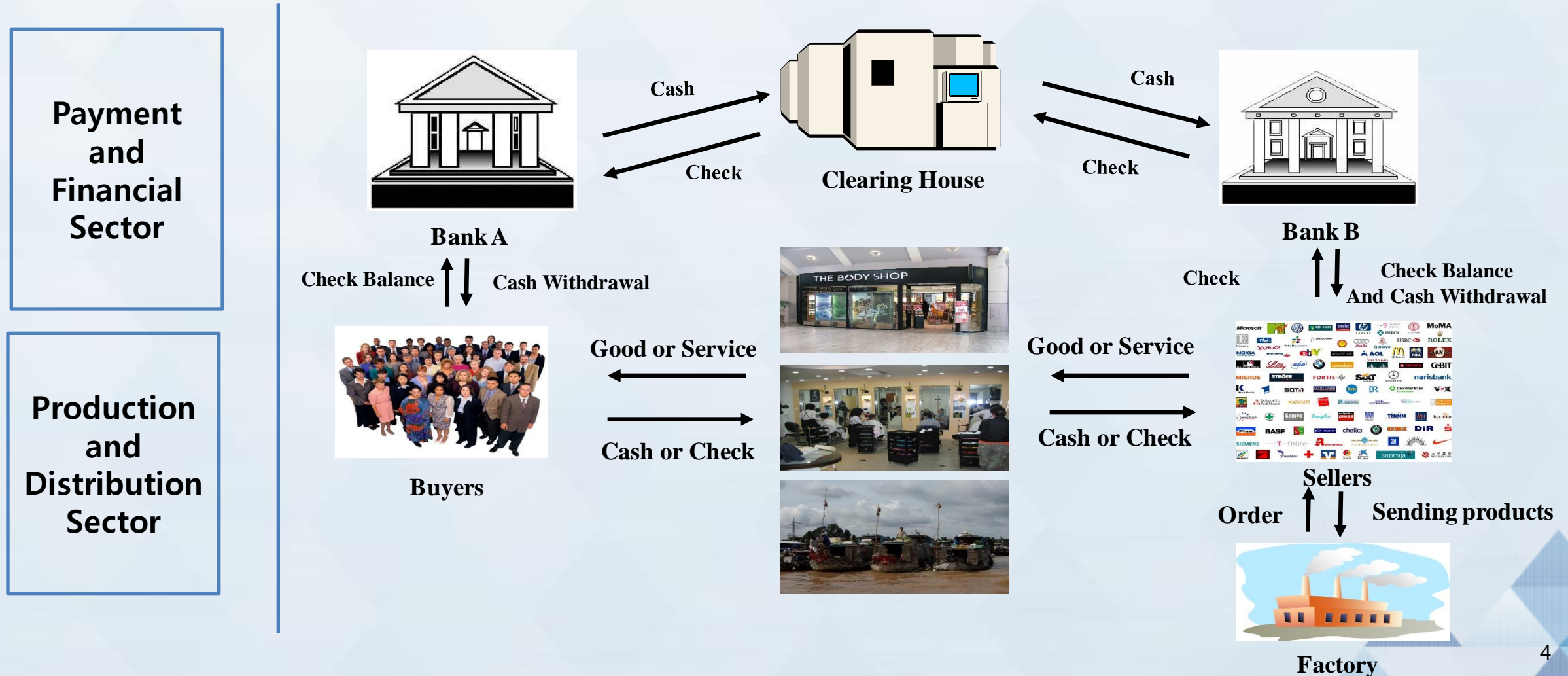
- Financial service includes two elements: financial intermediate service and payment service.
- Financial intermediate service: connecting savers and borrowers.
 - ✓ Credit risk has to be controlled appropriately.
- Payment service: Value transfer from one party to another in exchange for the provision of goods or services.



- Electronic Payment: payment is done by transferring computer file rather than by giving coin, cash or check.

I. What is cashless society and online payment? (2)

- Basic types of transaction in 20th century: Payment is done by transferring numbers through a bank account

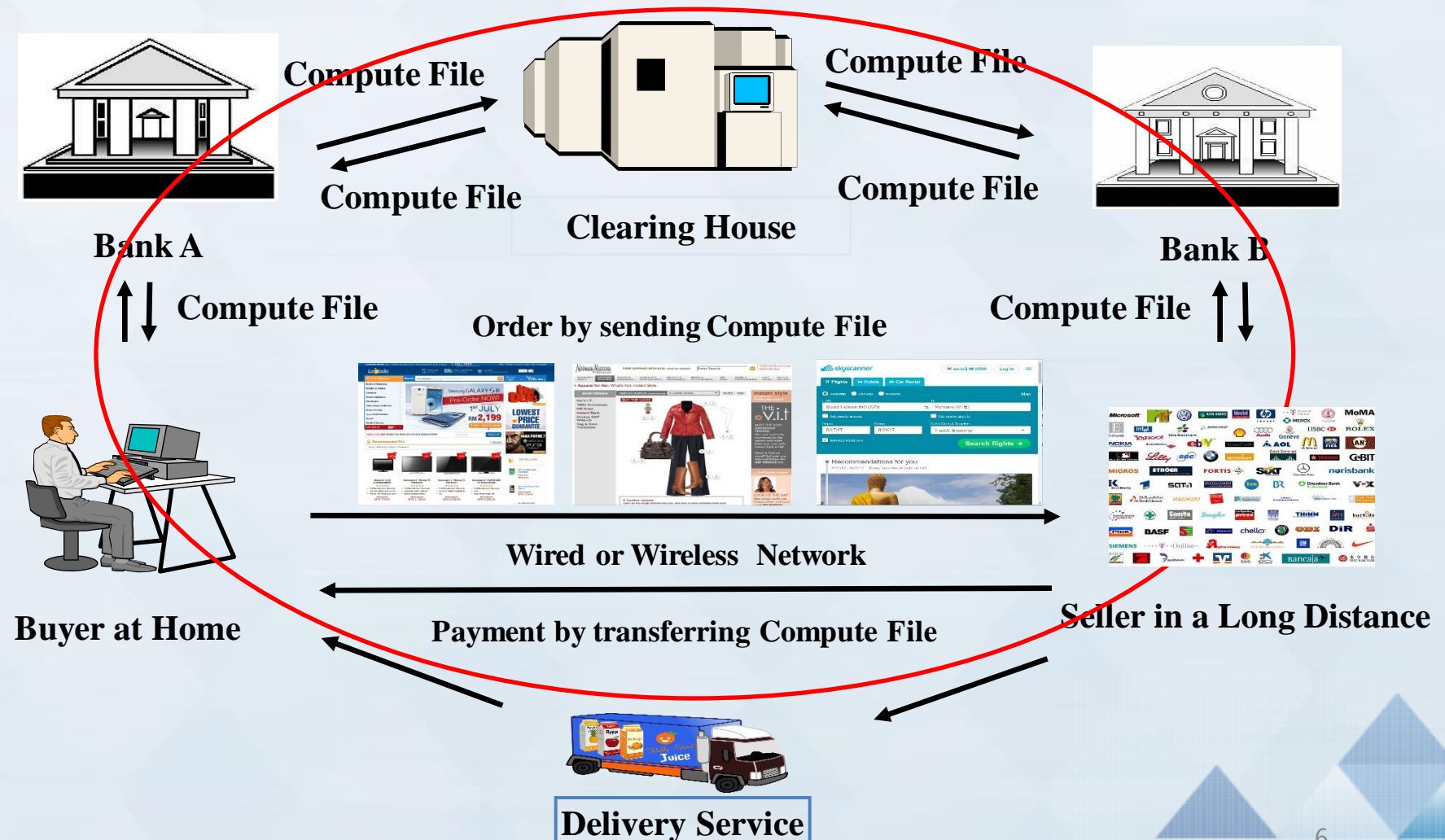


I. What is cashless society and online payment? (3)

- On-line payment system or e-payment system is a way of making transactions or paying for goods and services through an electronic medium without the use of check. Typically, this involves use of computer networks, the internet and digital stored value systems.
- It is applicable when transaction of commodity and service are done throughout the online shopping mall or other online shopping system.
 - ✓ Offline transaction is done by offline payment methods such as card payment system.
- It is used to send money to people far away.
 - ✓ International payment or remittance transfer are done by only line payment instruments.

I. What is cashless society and online payment? (4)

- Basic type of transactions with e-payment: Order and payment can be done by a simple transferring a certain computer file.



1. What are Fin-tech and Electronic Payment? (4)

- **Fin-tech: financial technology: newly developed financial service applying newly developed ICT technology.**
 - ✓ It improves the productivity of financial industry.
 - ✓ “Newly” means in 2010s.
- **Why fin-tech and electronic finance becomes such an important keyword in financial industry?.**
 - ✓ **Digital technology has been very useful in financial industry**
 - Account information are able to be expressed in digital data.
 - Financial transactions can be done by digital data transfer.
 - Credit risk may be reduced by analyzing data.
 - ✓ **“Recent revolutionary change of ICT” may change the way of business.**
 - Speed of computation and amount of data storage (big data) has improved for the past decade substantially.
 - Mobile network and its data transfer speed has rapidly increased.

1. What are Fin-tech and Electronic Payment? (5)

- **Fin-tech focuses on Mobile Payment: Seamless payment is possible**
 - ✓ Used for mobile shopping using smartphone and contactless offline payment.
 - ✓ Formerly, focused on wired payment.
 - ✓ More diverse mobile payment techniques are applied.(RF, NFC, MST, QR code etc.)
- **Fintech provided more convenient payment instruments.:**
 - ✓ Simple payment: only ID and PW are enough for the online payment.
 - PG or non-bank financial institutions such as internet portal or online shopping mall may save my financial account information and provide the payment service (Cacao-pay, Naver-pay, Alipay)
 - Previously, only financial institutions are allowed to do it but now IT companies are actively engaged in.
 - ✓ Electronic pulse is introduced.
 - ✓ They are relatively, more convenient and less complicated with more safety.
 - ✓ Block chain and Virtual money such as Bitcoin are introduced.

1. What are Fin-tech and Electronic Payment? (6)

■ Fintech introduces new intermediate services:

- ✓ Able to reduce credit risk by utilizing 'big data'.
- ✓ Providing a direct savers-loaner connecting service such as Crowd Funding or P2PL (Peer-to-Peer Lending) (ex, Lending Club)

■ Many unbanked people are benefited.

- ✓ People with low credit rating can get the credit.
- ✓ It is why Alipay was successfully introduced in China: To promote the transactions of Alibaba. In China, credit card were very limited issued.: COD - cash on delivery - was common.
- ✓ Many department store or large supermarket chains issues their own instruments.

1. What are Fin-tech and Electronic Payment? (7)

- **Cashless Society:** an economic state whereby financial transactions are not conducted with money in the form of physical banknotes or coins, but rather through the transfer of digital information (usually an electronic representation of money) between the transacting parties.
 - ✓ It can be done by development of electronic payment and finance or Fintech.
- **Two concepts: Cashless transactions vs Reduced cash**
 - ✓ Cashless transactions: final target
 - ✓ Reduced cash: more practical target
- **Major cashless payment instruments includes (1) Credit transfers (2) Cheques, (3) E-money payment (4) Card payments (Credit or Debit).**
 - ✓ Many different devices can be used for e-payment (Card, PC, Mobile phone(feature phone or smart phone etc))

2. Why e-payment and Cashless Society? (I)

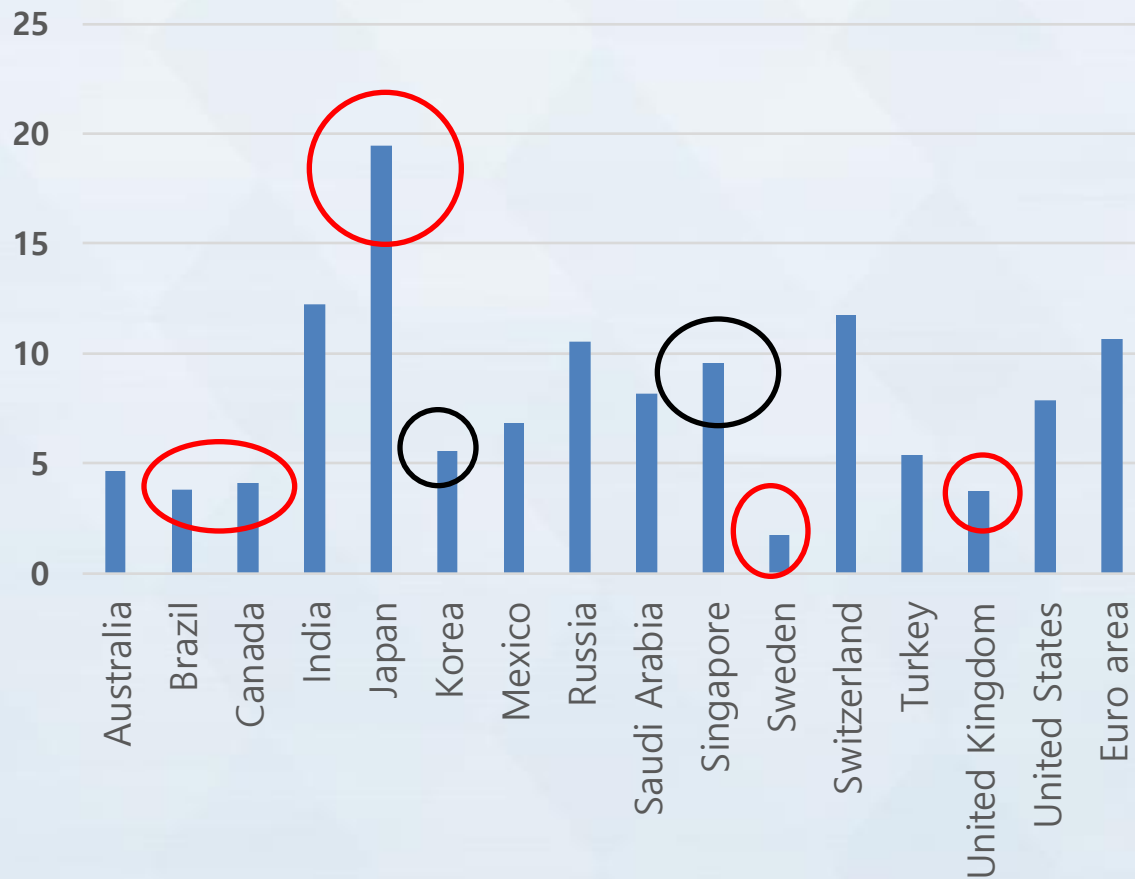
- Improvement of efficiency of payment system.
 - ✓ Reducing the payment cost and transactions costs
 - ✓ Decreasing the cost of cash management of individuals and financial institutions
 - ✓ Reducing risk of cash holding
- Raising the productivity of firms.
 - ✓ Decreasing the cash management cost of firms.
- Accelerating E-commerce
 - ✓ E-commerce cannot be done without efficient e-payment system.
 - ✓ Commodity and service delivery should be done with the payment service.
 - ✓ Can be used in international trade.
 - ✓ Currently COD (cash-on-delivery) is widely used.

2. Why e-payment and Cashless Society? (2)

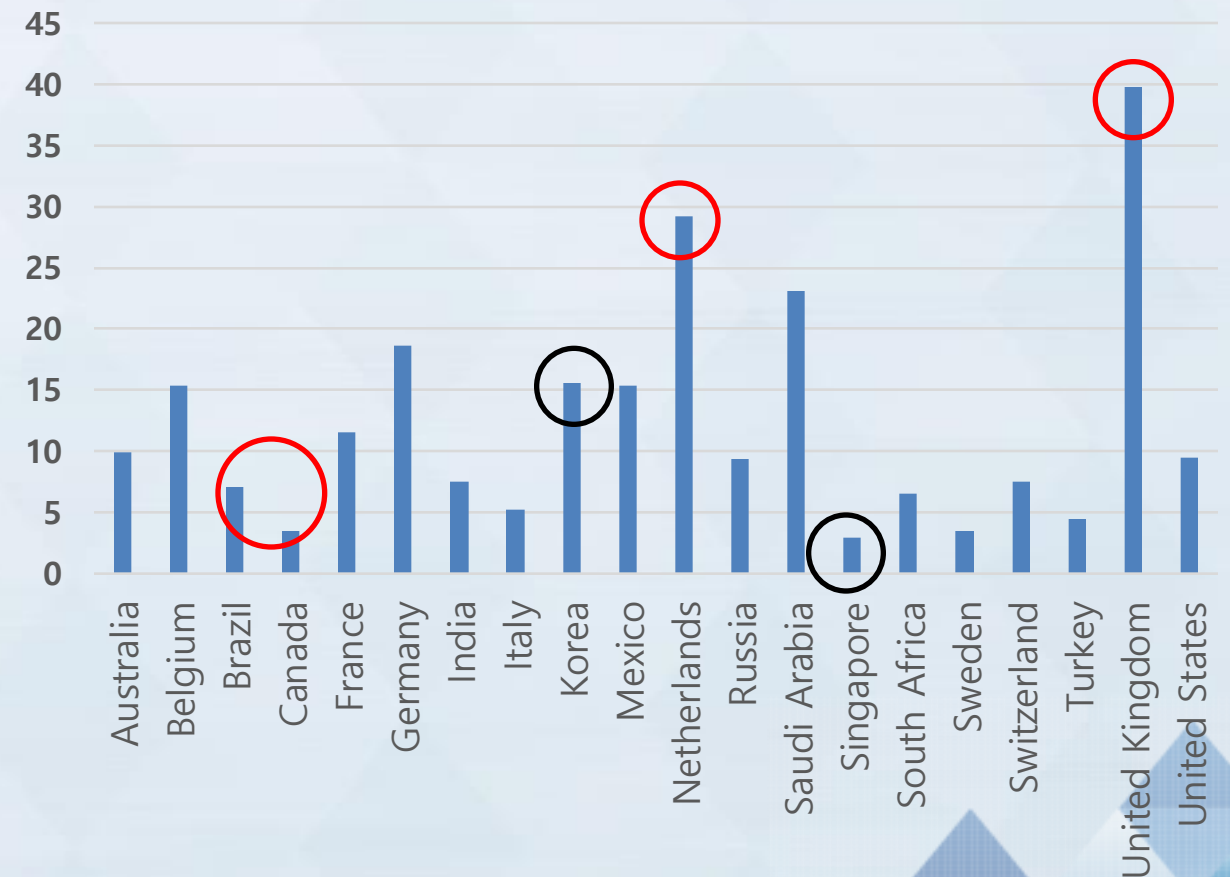
- Improvement of Social Infrastructure
 - ✓ More transparent society: transaction and income source are detected.
 - ✓ Easy to collect the tax from small merchant.
- Acceleration of ASEAN Market Integration
 - ✓ Trade and service transaction among members
 - ✓ Cross-border financial transaction
 - ✓ Remittance payment within the region can be done with less cost.

3. How far countries have advanced into? (1)

Banknotes and coin in circulation:
value as a percentage of GDP



Payment transactions by non-banks notes: total
value of transactions, value as a ratio to GDP



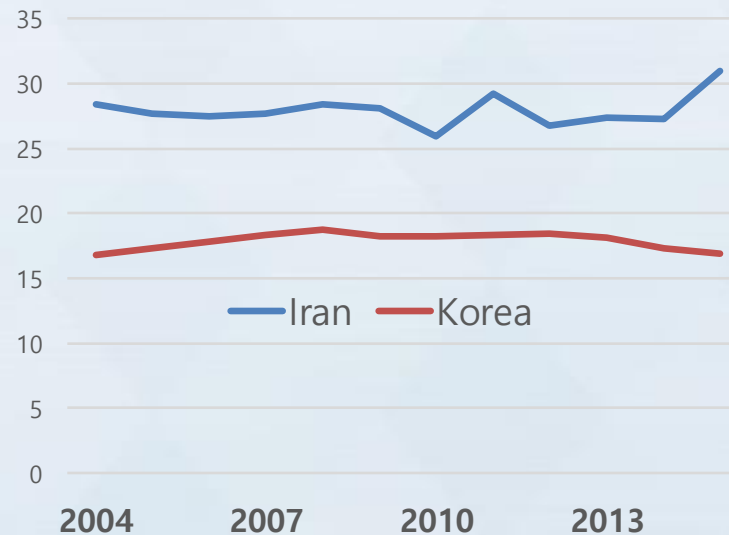
3. How far Countries have advanced into? (2)

- Iran has more branched but less ATM than Korea does in term of the number of branches per number of adults.
- There are more unbanked people in Iran.

ATMs per 100,000 adults



Bank Branches per 100,000 adults

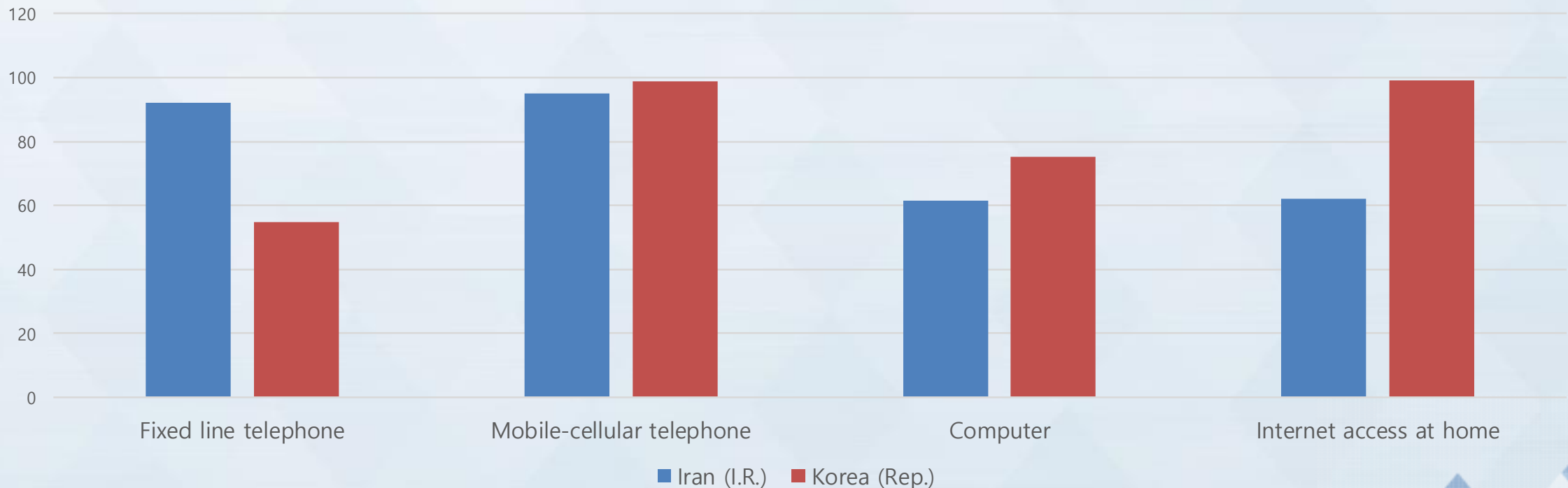


Bank Deposit over GDP(%)



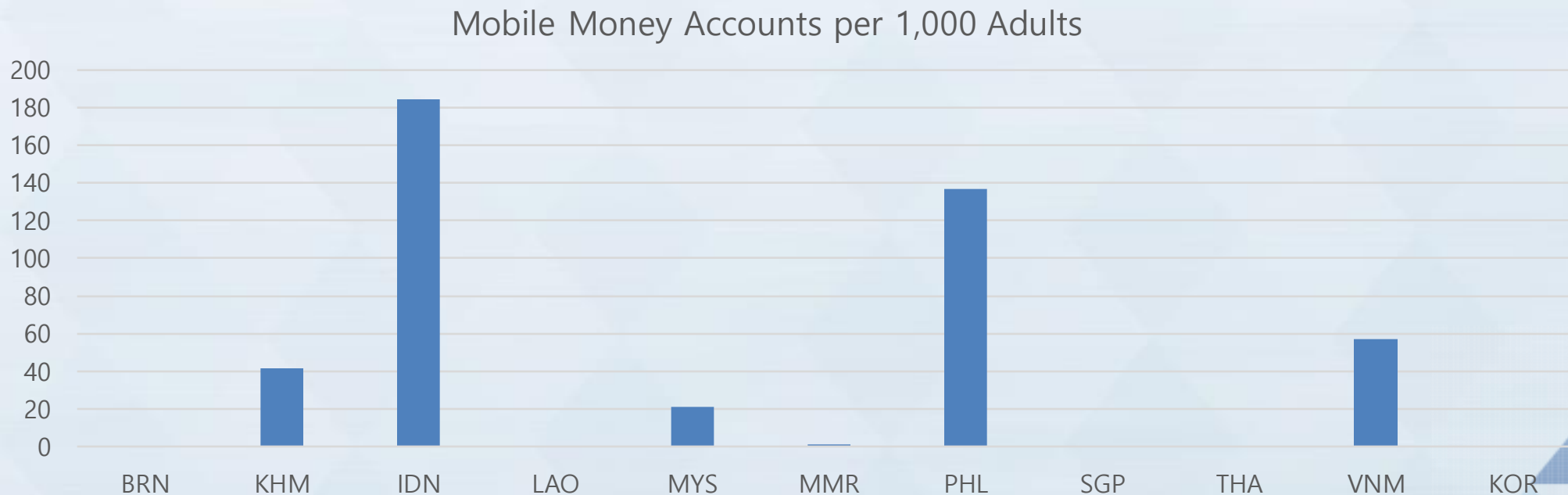
3. How far Countries have advanced into? (4)

- **Internet accessibility and computer usage of Iran is far less than those of Korea.**
 - ✓ Fixed line telephone and mobile phone usages of Iran are same as those of Korea.



3. How far Countries have advanced into? (5)

- **Some developing countries in Asia have a very practical way of payment: mobile money.**
 - ✓ It is developed in less developed countries such as Cambodia or Philippines. (Wing service in Cambodia, T-cash in Telkomsel in Indonesia, etc)
 - ✓ Good examples of the cooperation between commercial banks and telephone companies.



4. Development Story of Korea? (1)

Year	Characteristics	Major elements
- 1975	Office Automation	<ul style="list-style-type: none">• Major Activity: Payroll calculation• Objectives: Improving the efficiency of internal business operation
1976- -85	Account Data Computerized	<ul style="list-style-type: none">• Major Activity: Account data are computerized. CD and ATM service, credit card(BC card, 1982) are introduced.• Objectives: Applied in bank service and product first time.
1986 - 2000	Building the Bank Account Network	<ul style="list-style-type: none">• Major Activity: Several networks such as ATM network, Interbank Funds Transfer (IFT) Network, Automated Response Service (ARS) Network, CMS, EFT/POS are introduced.• Objectives: banks computer are connected by closed network.• Initiated by central bank and government; Korea Financial Telecommunications and Clearings institute (1986) was built.
2000 - 2010	Connecting the Bank computer and PC and other device	<ul style="list-style-type: none">• Major Activity: Internet banking. Continuous linked settlement (CLS) network, electronic giro (including internet giro), electronic bill presentation and payment, giro EDI, online security trading, etc.• Objectives: Open network and diverse devices are utilized. Cooperation of bank and non-financial institutions are emphasized.
2010- Now	Fintech	<ul style="list-style-type: none">• Major Activity: mobile banking and mobile payment service. electronic purse(smart payment). Simple payment,• Objectives: non-financial institutions are actively engaged.

4. Development Story of Korea? (1)

- Most bank money transfers are done by electronically.
- Card payment is very popular in Korea for everybody
 - ✓ On average, each Korean adult has three credit cards.

Figure 3. Channels of Bank Wire Transfer (%)

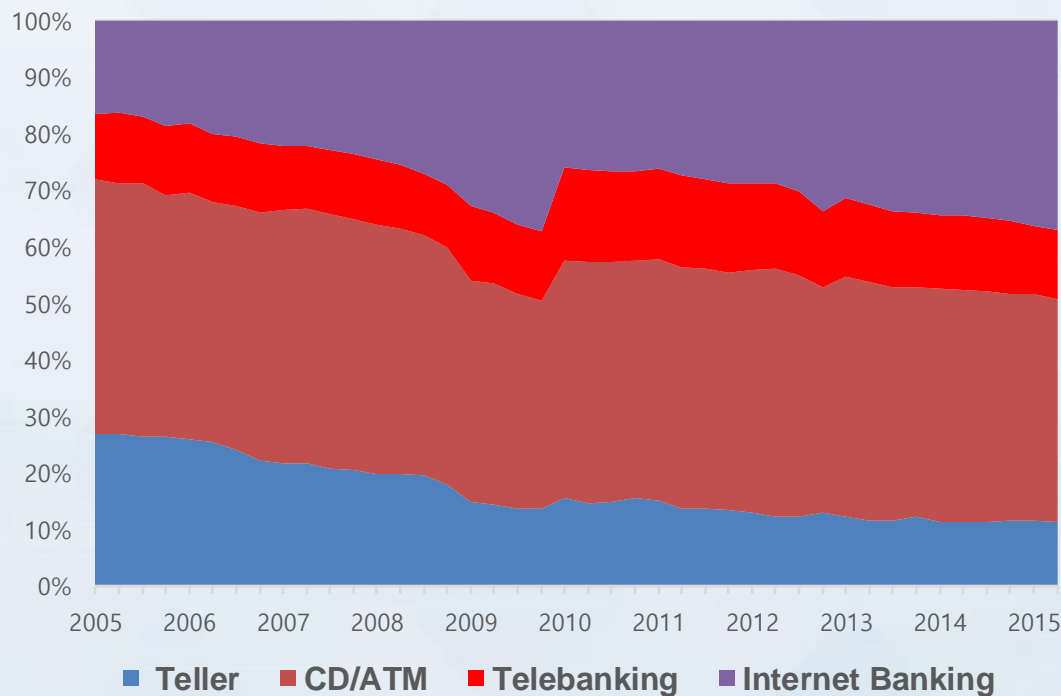
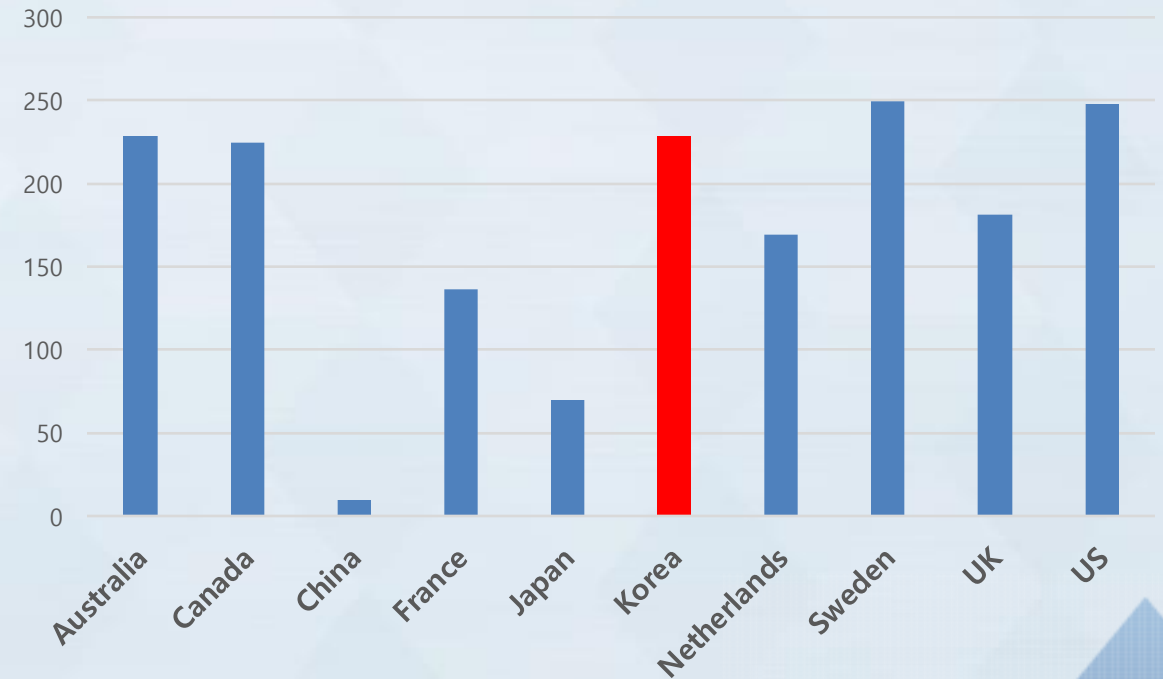
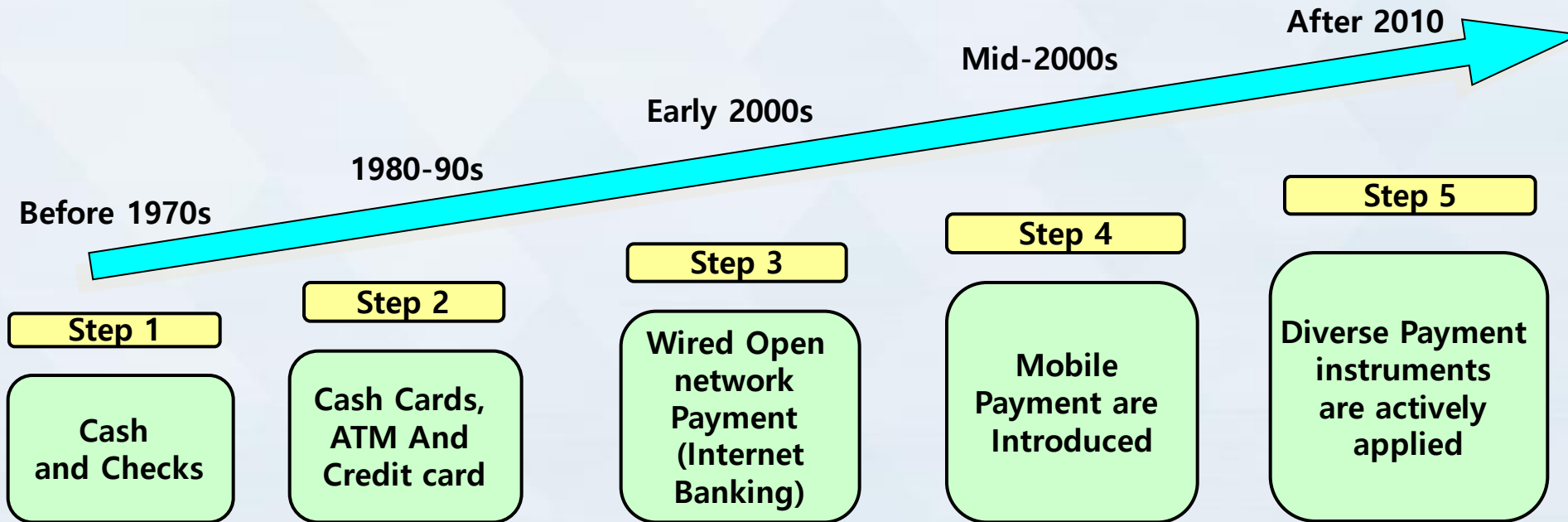


Figure 4. Card Transaction per Inhabitant (per year)



4. Development Story of Korea? (2)



■ Korea are in the middle of the Step 5.

- ✓ Money transfer service through electronic payment system are very widely used.
- ✓ Paying by diverse cards is very popular.
- ✓ Some of mobile payment instruments are utilized.
- ✓ Electronic purse is introduced.

4. Development Story of Korea? (3)

- Change of offline shopping center to online shopping mall: Case of Lotte.

Offline Store

Online Shops: Lotte Mall

Payment Service

Lotte
Department
Store



Lotte Mart



Lotte TV
Shopping



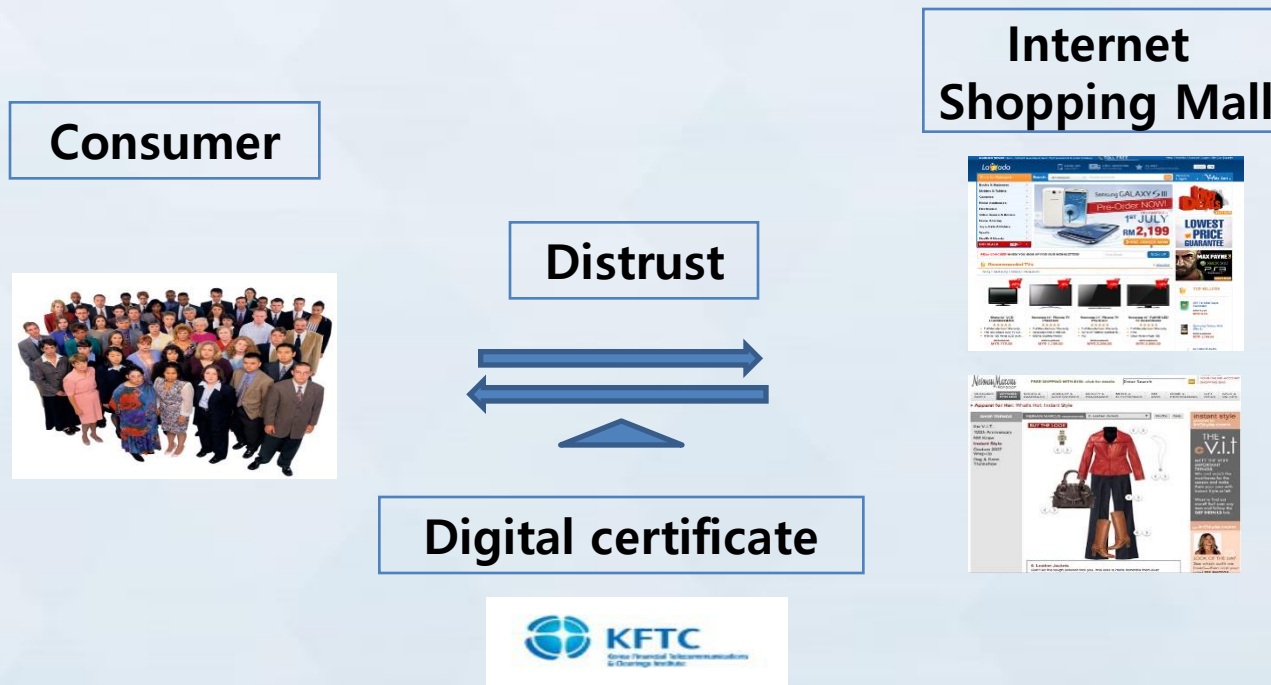
Lotte Duty-
free Shop



Lotte Credit Card
Lotte L-Pay

4. Development Story of Korea? (4)

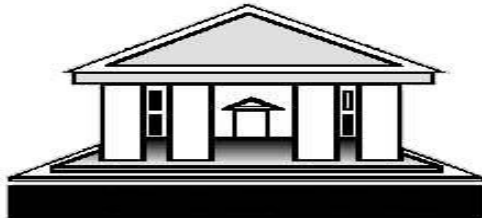
- It was not easy for both payer and payee to have trust on the system at earlier stage of development.
 - ✓ Public digital certificate issued by the government agency (ex KFTC) may be a one solution for it.
 - ✓ Bank transfer and credit card have been used extensively from the beginning because of their reputation.
 - ✓ At first it is not easy to use a system to be run by the third party of nonfinancial institutions.



4. Development Story of Korea? (5)

- Many online payment methods have been provided since early.
 - ✓ Bank wire transfer: trustful but not easy to run on the shopping mall website: => visit the bank website during the shopping.
 - ✓ Online credit card payment => trustful on credit company and working on the website. but not trustful on the shopping mall itself.
 - ✓ Third party payment method (mostly provided by IT venture company) => not successful to get the confidence from the users.

**Banks and
credit card company**



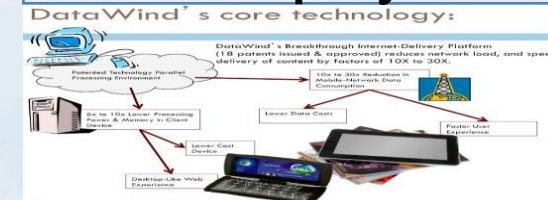
Most Successful

**Telecommunication
Company**



Not successful

**ICT Venture
Company**



Most failed

5. Who takes the Fruits and Who pays the Bills? (1)

Return	Users	<ul style="list-style-type: none">• Enjoy new convenient electronic payment instruments.
	Financial Institutions	<ul style="list-style-type: none">• Some institutions takes returns for cash substitution effects, but soon it be stabilized.• Fee for this service is generally regulated(?).• Oligopoly market structure is not affected by launching new electronic payment instruments.
	ITC Firms	<ul style="list-style-type: none">• New business opportunities are opened.• Telecom Com: takes new profit for new service.
Cost		<ul style="list-style-type: none">• Financial institutions have to pay service installing and upgrading cost continuously.• Financial institutions have to manage a new operation risk and a new reputation risk.

5. Who takes the Fruits and Who pays the Bills? (2)

Efficiency of Economy

- Raising the productivity of the Economy
- Especially, helping the development of distribution system
- Did not mean 'leading' but 'not being obstacle'
 - * Development of payment system do not lead that of electronic commerce but development of electronic payment asked to reduce the inconvenience of payment.

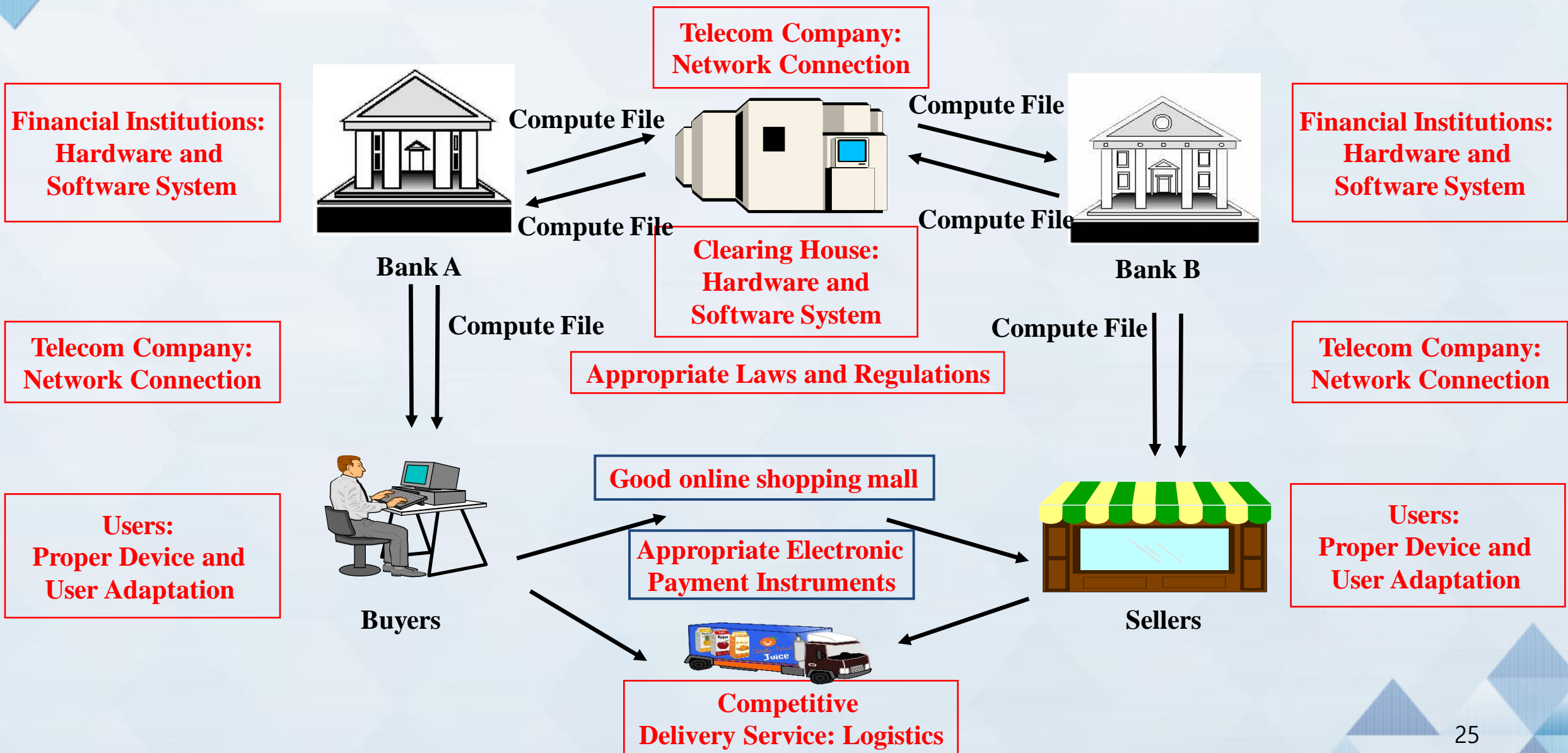
Payment Market

- Oligopoly structure continues regardless of payment technique development.
- But, role of ICT and non-financial institution had been emphasized in payment market.

Global Market

- Korea is very Strong in ICT industry but export of Financial service applying ICT is very limited.
 - * Consulting service of BC Cards in Indonesia
 - * BilltoMobile Service by Danal Inc.

6. Necessary Conditions for a Cashless Society. (1)



6. Necessary Conditions for a Cashless Society. (2)

- **Hardware infrastructure such as high speed internet or wireless connection must be provided by telecommunication company.**
- **Software infrastructures such as related laws and regulation must be provided by regulatory agency.**
 - ✓ They should be made at the right(?) time.
 - ✓ Making an industry standard has pro and cons.
- **Financial institutions should be equipped with appropriate hardware and software system: capacity to supervise the system.**
- **Users should have a proper device and are willing to use it.**
 - ✓ It is not easy for them to do.
 - ✓ What kind of incentives or motives should be provided?
 - ✓ Promotion by government may be necessary.

6. Necessary Conditions for a Cashless Society. (3)

- **Appropriate electronic payment instruments should be provided.**

- ✓ Safety: should be precise and secured.
- ✓ Convenience: should be fast and convenient to use.
- ✓ Reliability: should be reliable for people to use.
 - * Paying cash is visible while sending a computer file is not.
- ✓ Intelligence: if possible, It may give a best one among many instruments.

- **Incentive of Service Users.**

- ✓ Easy to use and cost-reducing to payer and payee
- ✓ Easy adopt to use the new instruments.

- **Profit of Service Providers**

- ✓ Raise the profit of service providers. If not, they will not.

- **Good cooperation between FIs and IT Firms.**

- ✓ Technology determines the quality of service.
- ✓ Without cooperation, the service cannot be made and implemented.

6. Necessary Conditions for a Cashless Society. (4)

■ How about the logistics for delivery and other things

- ✓ Remember that e-payment is an supplementary service to promote the e-commerce.
- ✓ E-commerce can not be complete without the final delivery of goods and service. It only reduce the time and cost for ordering and payment. The product delivery is the same as before.
- ✓ Proper development of logistic service is a must.
- ✓ Without it, e-payment is less useful.
- ✓ Without e-payment, e-commerce cannot be complete.

7. What Fin-tech contributes? (1)

< Why Fin-tech is so Popular today? (1) >

■ Dose it create any more payment demand in domestic market?

- How much mobile payment may substitute for current wired payment?
 - 0 Amount of mobile payment is determined by that of mobile shopping.
(ex: expansion of cacao taxi may raise the mobile payment transaction)
 - 0 Utilizing big data may raise new demand for the product?
- New simply payment instruments:
 - 0 It only raise the convenience: it do not make new transaction demand.
(ex: Cacao pay, etc.)
 - 0 Easy to use the card and phone(Samsung Pay)

■ Using new payment instrument to pay to oversea suppliers.

- Recently, cross border retail payment has improved very much.
- Amazons in early 2000s and Alibaba in 2010s: no difference in principle.
development of logistics, improvement of reliability of international transactions. Expansion of oversea travel, Difference of product price
- Realize the more convenient foreign payment instrument: indirect international competition of electronic payment service market

7. What Fin-tech contributes? (2)

< Why Fin-tech is so Popular today? (2) >

- **Fin-tech in 2010s and electronic finance in early 2000s are almost the same in principle but today's market environments are different.**
- **Common things: cause of change.**
 - ✓ They have been mainly ignited by ICT engineers with acceleration of computing speed and network data transfer speed and later financial institution adopt them.
- **Differences: the types of applied technology**
 - ✓ Wired or Wireless network, CRM or Big data, the speed of data transmission
- **Income level: 10,000 USD in early 2000s but about 30,000 USD in 2015**
 - ✓ Need to find a new, high value-added business to reach its income level up to 40,000USD
 - ✓ We should transform from the fast mover to the first mover.

7. What Fin-tech contributes? (3)

< Why Fin-tech is so Popular? (3) >

■ Can we make a world-wide electronic payment service?

✓ **ICT firms:** Maybe, Possible. Let's try.

(Global Competitive Index ranks around 20th in related fields in 2014-15)

✓ **Financial Industry:** Maybe, impossible now. Let's wait.

(Global Competitive Index of financial industry ranks 80th in 2014-15)

■ Problems of Financial Institutions:

✓ Have never been lead the development of payment industry before.

✓ Little incentive for bank and other financial institutions to do a new business.

0 If problems happens, then too much costs should be burdened.: Reputation risk.

0 Ex) Success of T-money system in Mongol:

✓ Is it good for the financial institution? Most for SI company.

7. What Fin-tech contributes? (4)

- **Financial Industry: reluctant to adopt the new technology.**
 - Has to take care of reputation risk and operation risk.
 - Only possible if government initiates.
- **ICT Industry: Looking for new business model and regard the financial industry as a gold mine**
 - Input and output of payment business are computer files.
 - Lack of understanding of the financial industry.
- **How about mutual cooperation between ICT company and Financial institutions**
 - Recent Trials; BC card and KT, SKT and Hana card.
 - Birth of Internet Bank.: Cacao-bank, K-bank
- **Cooperation between different Ministries.**
 - Have two different ministries cooperated before to promote a certain convergence industry?
 - Division of labors between ministries are possible?

8. Some lessons for Iran? (1)

■ All these revolutionary changes have been initiated not by financial industry but by ICT industry.

- Iran's financial market and system are dominated by banks and all this payment system development is initiated by central bank.
- As a result, it have a less chance to advance by itself.

■ What kinds of incentives are given to the users(merchant, buyers and financial institutions)

- Banks do not have incentives. They are already in the monopoly market. => Promotion policy by banks cannot be successful. => Try to utilize the other financial institutions.
If possible, build a new credit card company.
- Buyers: why does the people want to change their way of payment? No. Are there any discount when paying by cards?
- Merchants: why do they install PSO in their store and accept cards?
It costs money and time. Furthermore, they have to pay more tax after taking card.
Building transparent country is not for the merchant but for the country.
- ICT company: most of benefit comes to them
- Less change to develop further in the near future.

8. Some lessons for Iran? (3)

■ What is the target? Why does the government like to promote it?

- Building a cashless society? Improve the efficiency of the economy
=> then it has to build a concrete plan and to take care of many things.
- Promote the digital economy or e-commerce? => e-payment is an auxiliary to it.
- Raise the foreigner's expenditure in Iran? => connect the domestic system with that of western credit card company such as VISA or Mastercard.

■ Less likely that domestic ICT firms cooperate with domestic financial institutions.

- So role of government is emphasized.: Promote the ICT companies and encourage bank to cooperate with them.
- Do you have any experience on it? I think 'may or may not'.

■ Proper infrastructure should be provided.

- ICT network infrastructure should be given by government.
- Who is going to pay for the personal devices such as PC, Smart phone, POS, network etc.
- Remember that people do not buy PCs or smart phones to use e-payment or m-payment.

8. Some lessons for Iran? (4)

Before



Buyers in Country A



Good or Service
Cash or Check



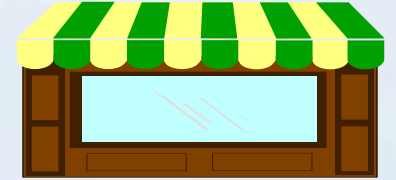
Factory



Order



Sending products

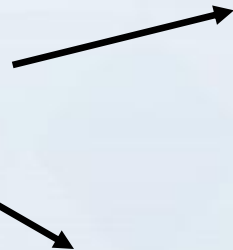


Sellers in Country A

After



Buyer in Country A



Order given by
transferring compute files

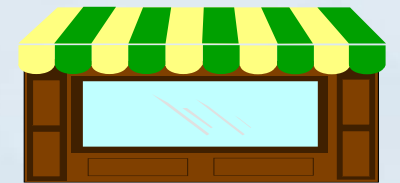
\$ Payment is done by
transferring compute files



Delivery is made by local company

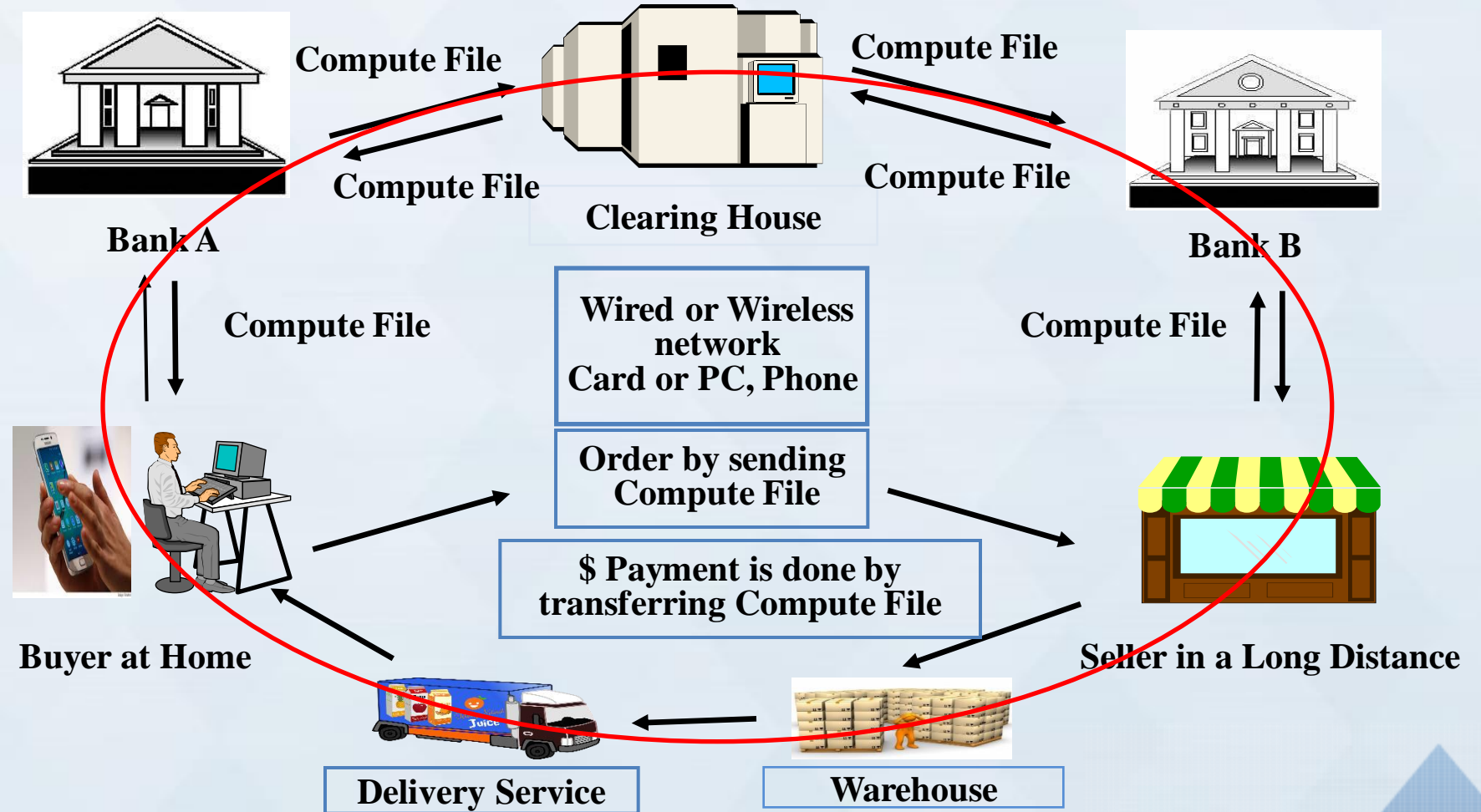


Warehouse in Country A or B



Seller in Country B

8. Some Lessons for Iran? (5)



E-payment,
E-bank,
Fintech etc

E-commerce

Production
and
Logistics

The background features a complex geometric pattern of overlapping triangles in various shades of blue and green. The pattern is denser on the right side and fades into a light blue background on the left. The triangles are arranged in a way that creates a sense of depth and movement.

THANK YOU