

# **Building Electronic Payment System and a Cashless Society In ASEAN**

**Presented in  
KIEP Seminar  
July 21, 2017**

**Choong Lyol Lee, Professor**  
Department of Economics and Statistics  
Korea University at Sejong



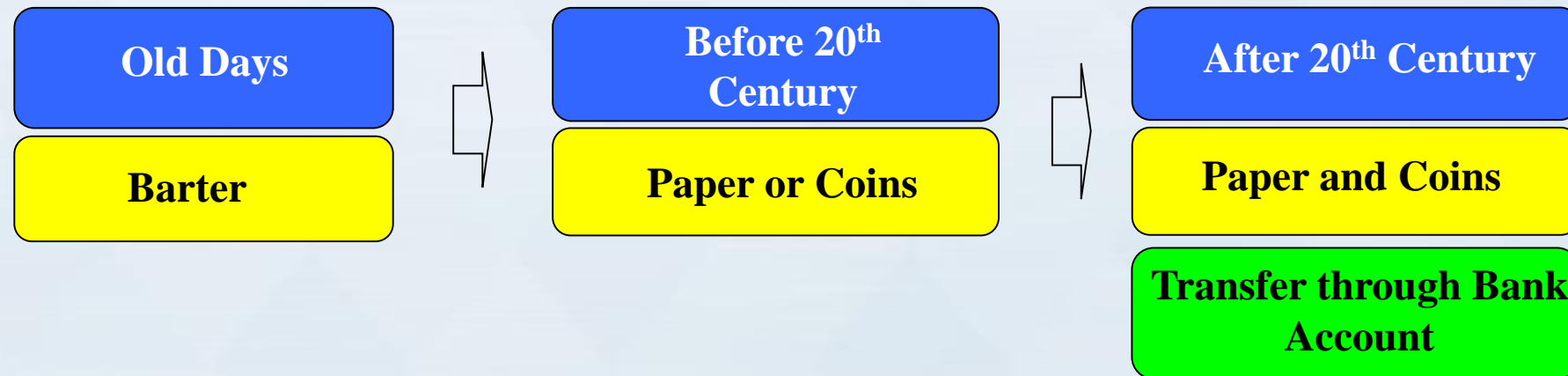
# **Electronic Payment, Fintech, and a Cashless Society In ASEAN and Korea**

## **Contents**

- 1. What are Electronic Finance and Payment?**
- 2. Why e-payment and cashless society?**
- 3. How far Countries have advanced into?**
- 4. Development story of Korea.**
- 5. Who takes the fruits and Who pays the bill?**
- 6. Necessary Conditions for a Cashless Society**
- 7. What ASEAN has to do?**

# 1. What are Electronic Finance and Payment? (1)

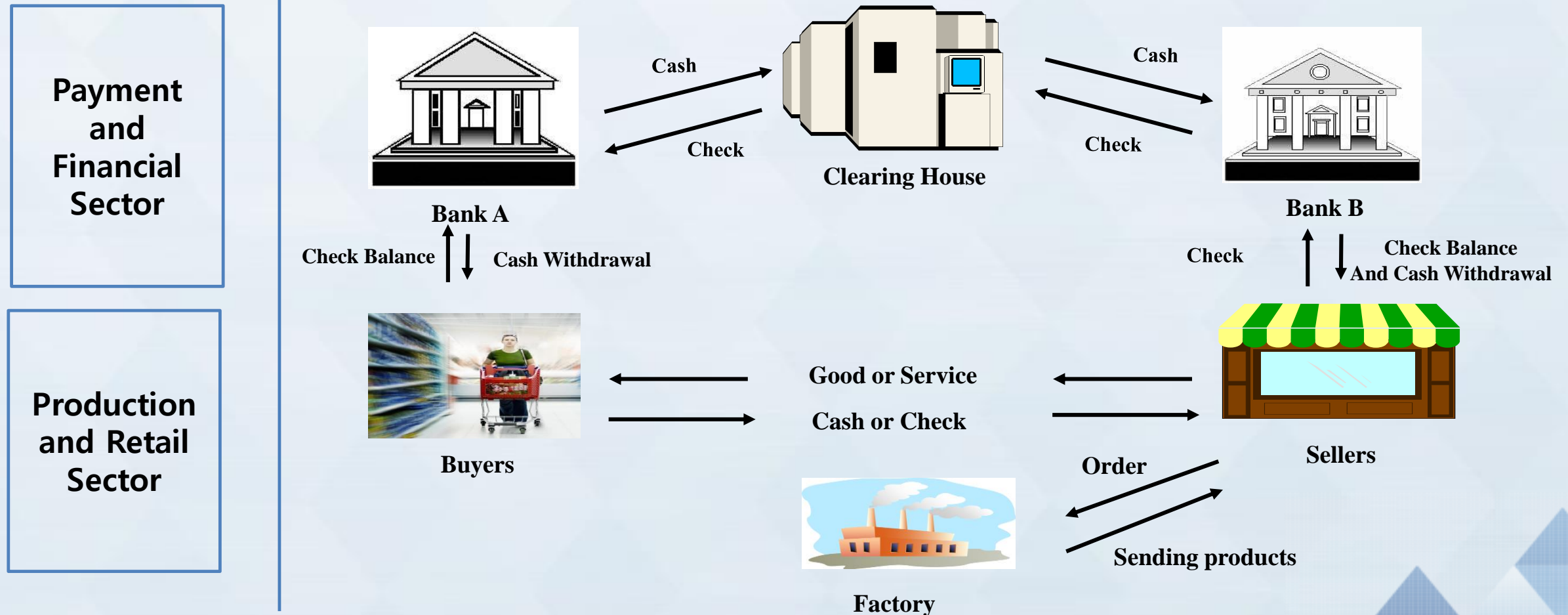
- Financial service includes two elements: financial intermediate service and payment service.
- Financial intermediate service: connecting savers and borrowers.
  - Credit risk has to be controlled appropriately.
- Payment service: Value transfer from one party to another in exchange for the provision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



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

# 1. What are Electronic Finance and Payment? (2)

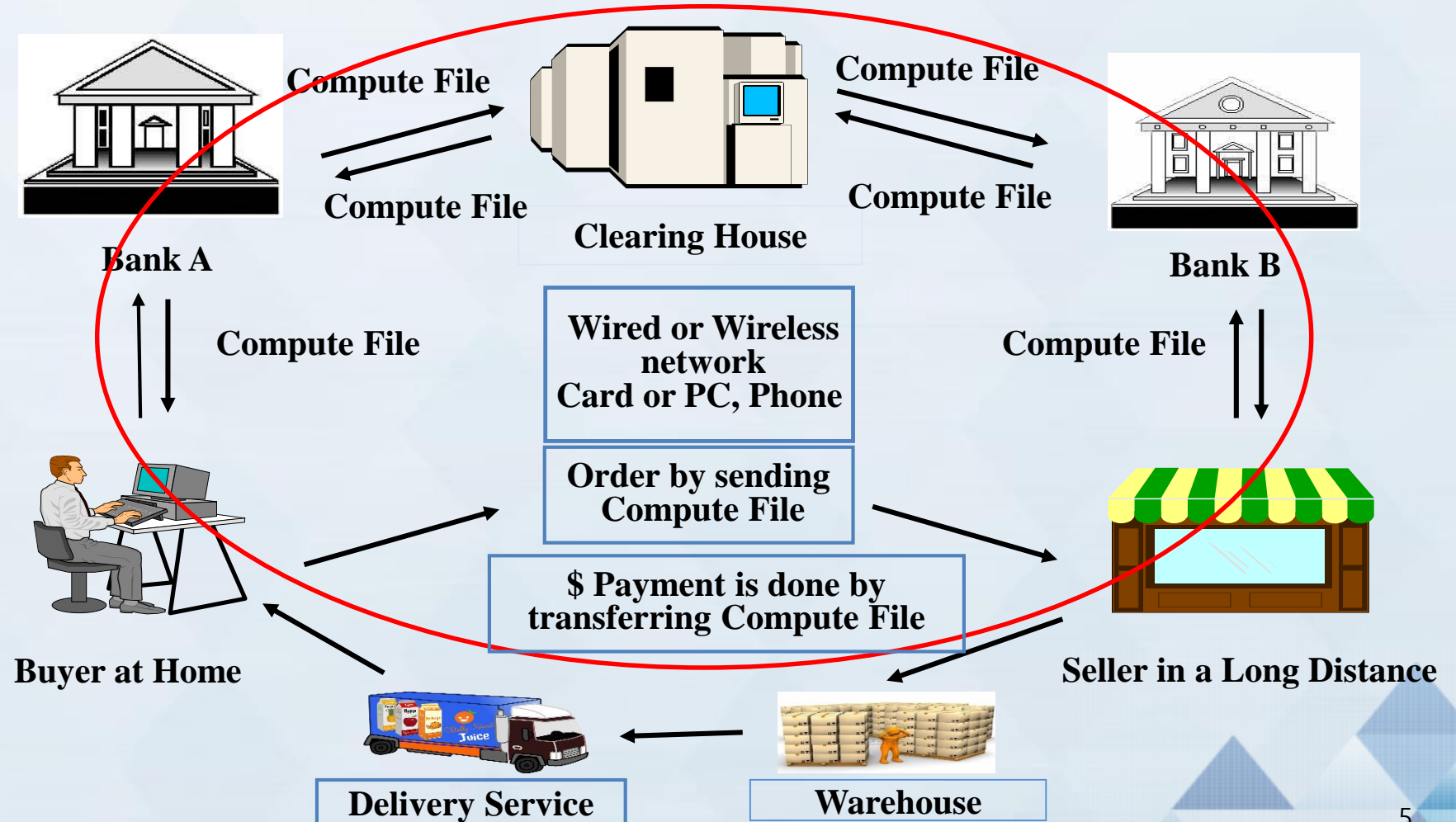
- Basic types of transaction in 20<sup>th</sup> century: Payment is done by transferring numbers through a bank account





# 1. What are Electronic Finance and Payment? (3)

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



# 1. What are Electronic Finance and 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 becomes such an important keyword in financial industry?.**
  - ✓ Digital technology has been very useful in financial industry
    - 0 Account information are able to be expressed in digital data.
    - 0 Financial transactions can be done by digital data transfer.
    - 0 Credit risk may be reduced by analyzing data.
  - ✓ “Recent revolutionary change of ICT” may change the way of business.
    - 0 Speed of computation and amount of data storage (big data) has improved for the past decade substantially.
    - 0 Mobile network and its data transfer speed has rapidly increased.

# 1. What are Electronic Finance and Payment? (4)

- **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 are introduced:**
  - ✓ Simple payment: only ID and PW are enough for online payment.
    - PG or non-bank financial institutions 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.
  - ✓ Electronic pulse is introduced.
  - ✓ Relatively, more convenient and less complicated with more safety.

# 1. What are Electronic Finance and Payment? (5)

## ■ 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.

- ✓ Able to reduce credit risk by utilizing 'big data'.
- ✓ It is why Alipay was introduced in China: To promote the transaction of Alibaba.
- ✓ In China, credit card were very limited issued.: COD: Cash on delivery was common.



# 1. What are Electronic Finance and Payment? (6)

- **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)

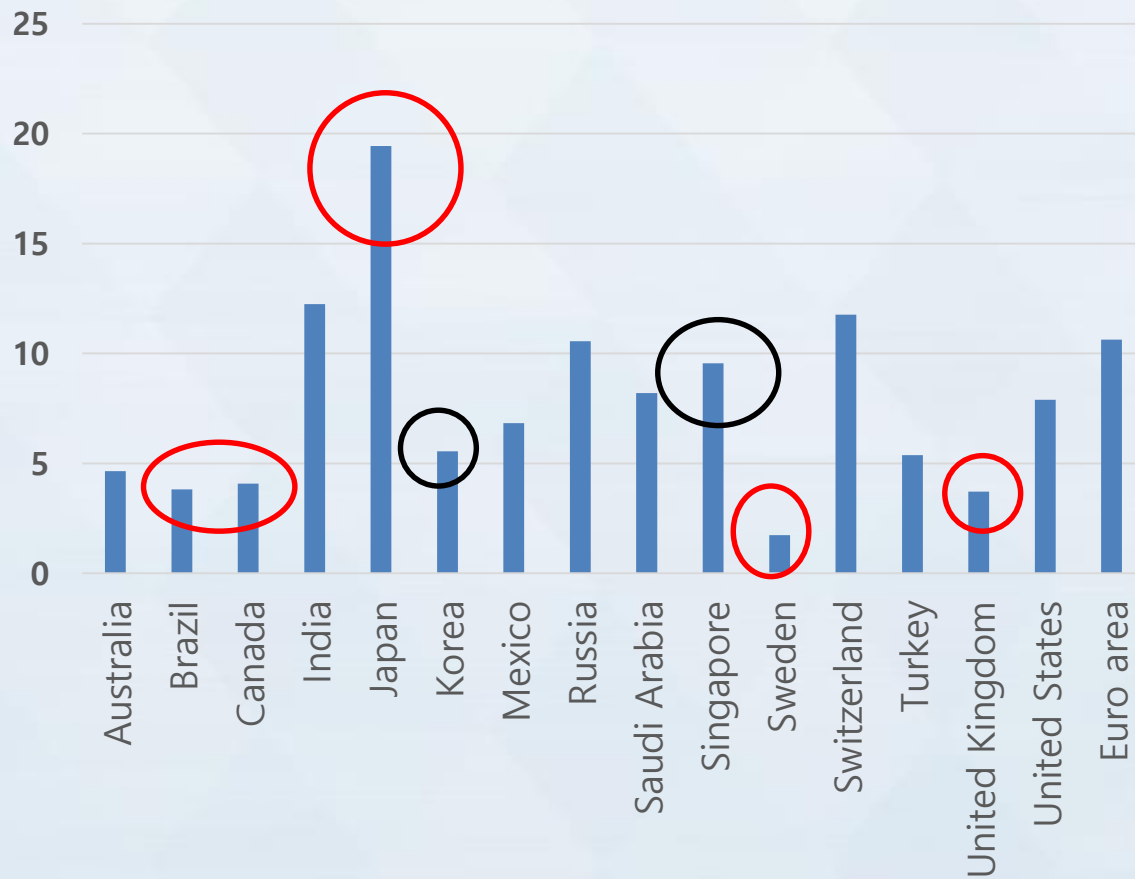
- Improvement of efficiency of payment system.
  - ✓ Reducing the payment cost and transactions costs
  - ✓ Decreasing the cost of cash management of individuals and financial institutions
  - ✓ Reducing risk of cash holding
- Raising the productivity of firms.
  - ✓ Decreasing the cash management cost 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)

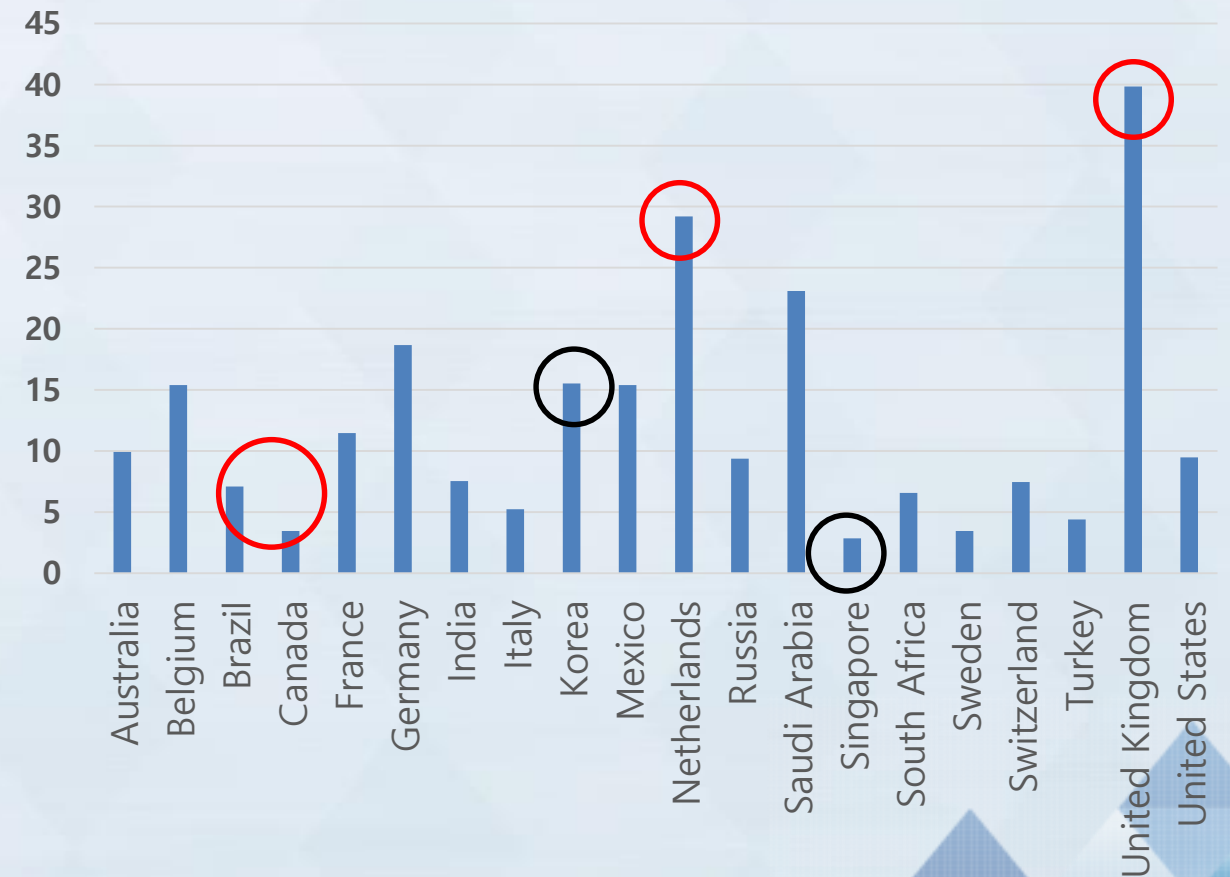
- Improvement of Social Infrastructure
  - ✓ More transparent society: transaction and income source are detected.
  - ✓ Easy to collect the tax from small merchant.
- Acceleration of ASEAN Market Integration
  - ✓ Trade and service transaction among members
  - ✓ Cross-border financial transaction
  - ✓ 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

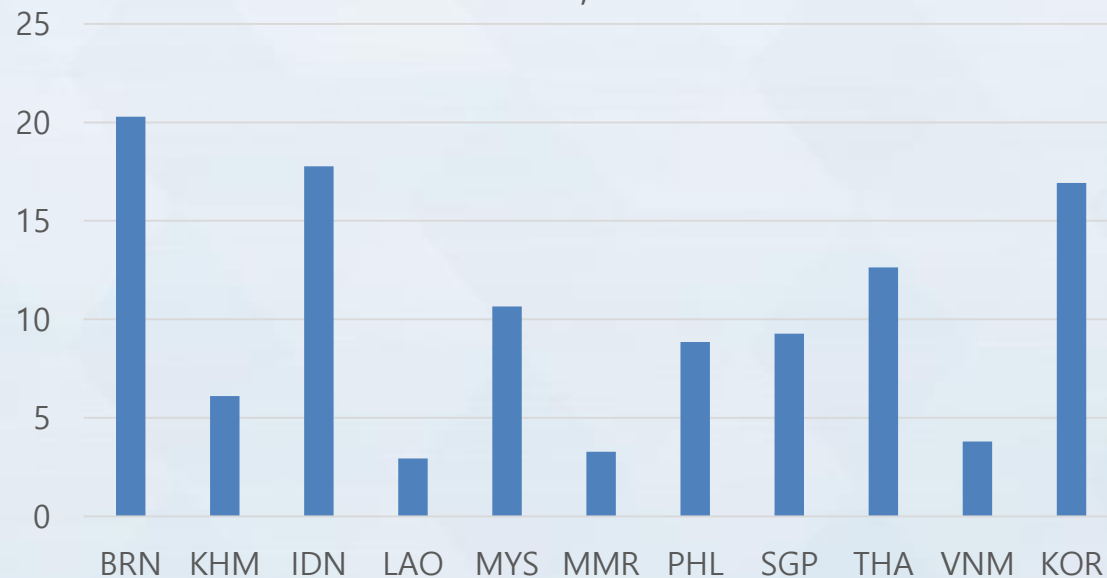


### 3. How far Countries have advanced into? (2)

- The access to the bank is limited in some AMSs.
- The number of Bank branches are not so high.

- ATM is not widely distributed.
- In Some ASEAN countries, they are not interconnected with other bank's account (ATM switch)

Branches of Commercial Banks per  
1000,000



ATM per 1000,000 adults

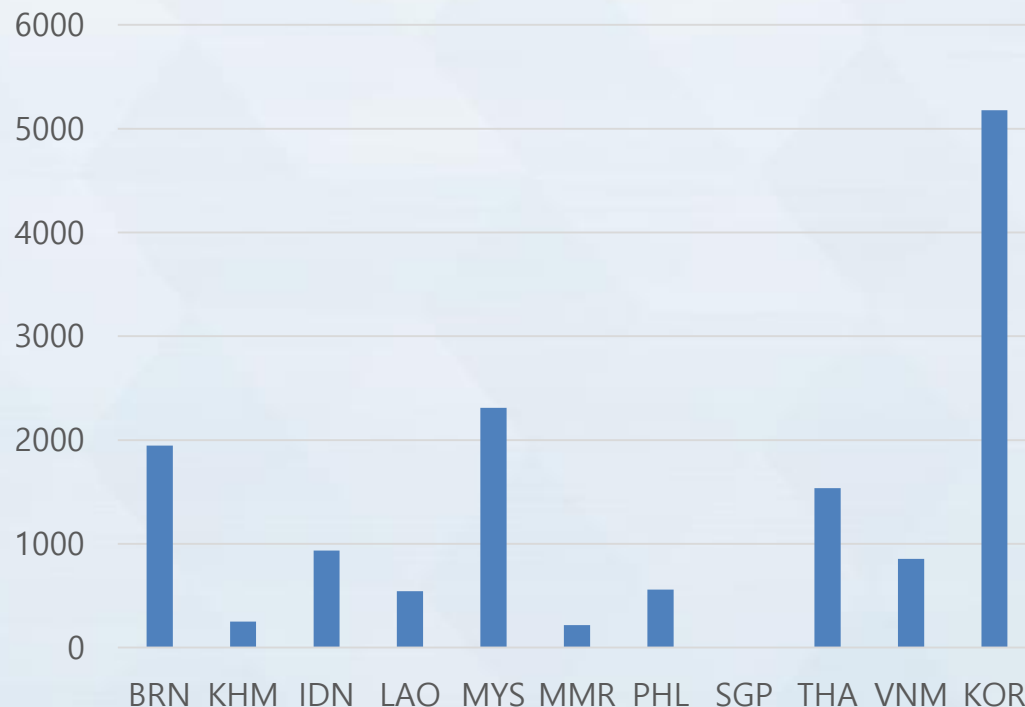




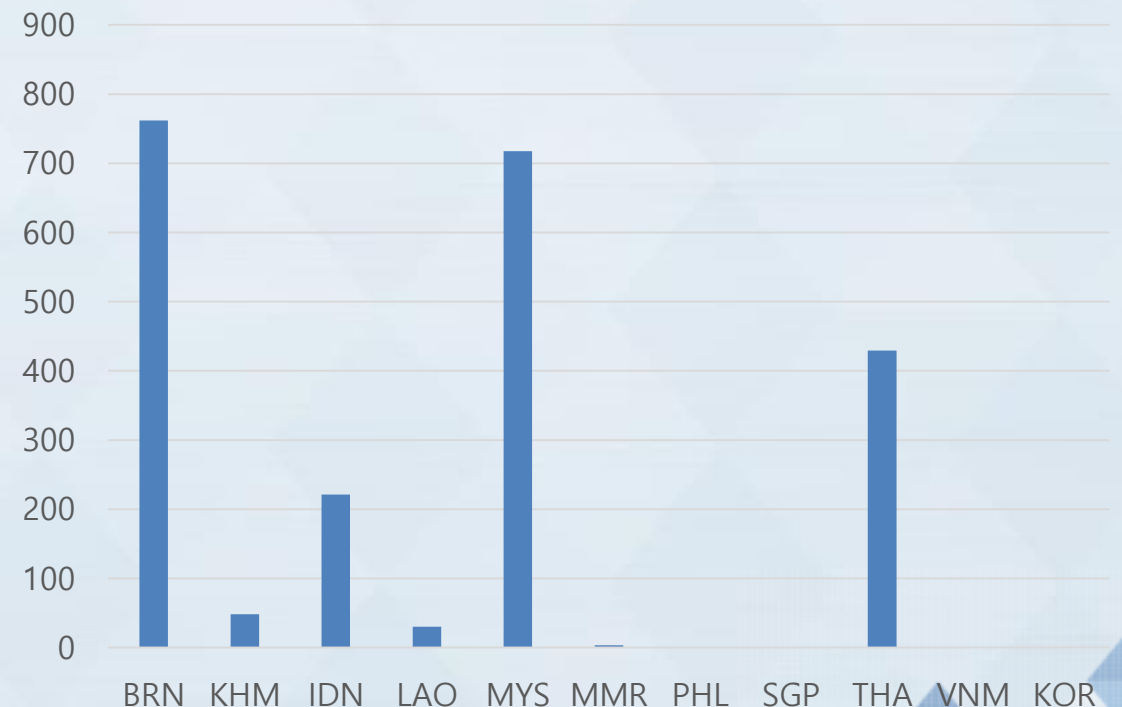
### 3. How far Countries have advanced into? (3)

- Bank usage is not common in some countries
  - ✓ Loan service are very limited to the people.

Deposit Accounts per 1000 Adults



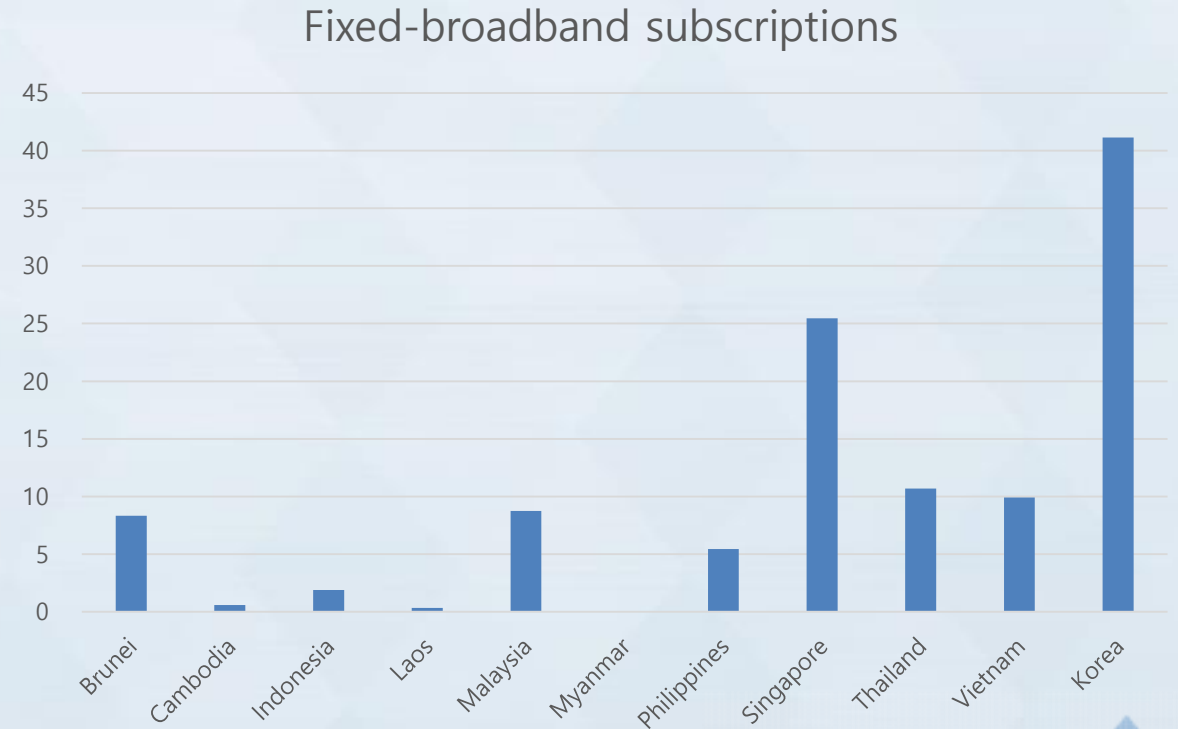
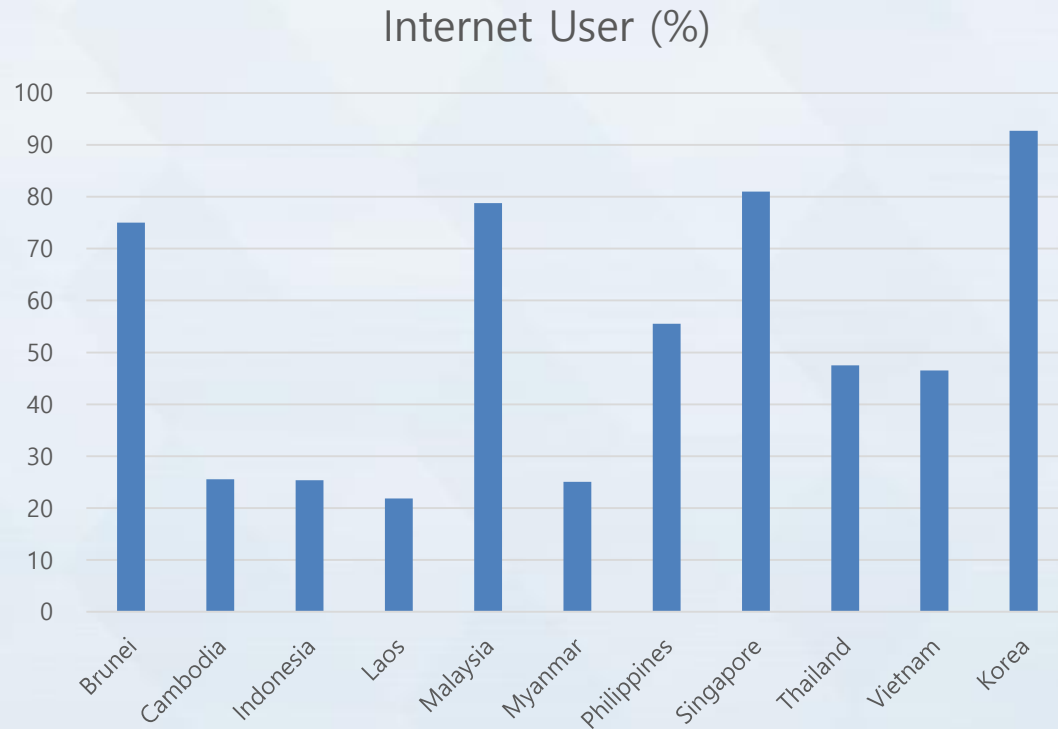
Loan Accounts per 1000



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

- Internet accessibility.

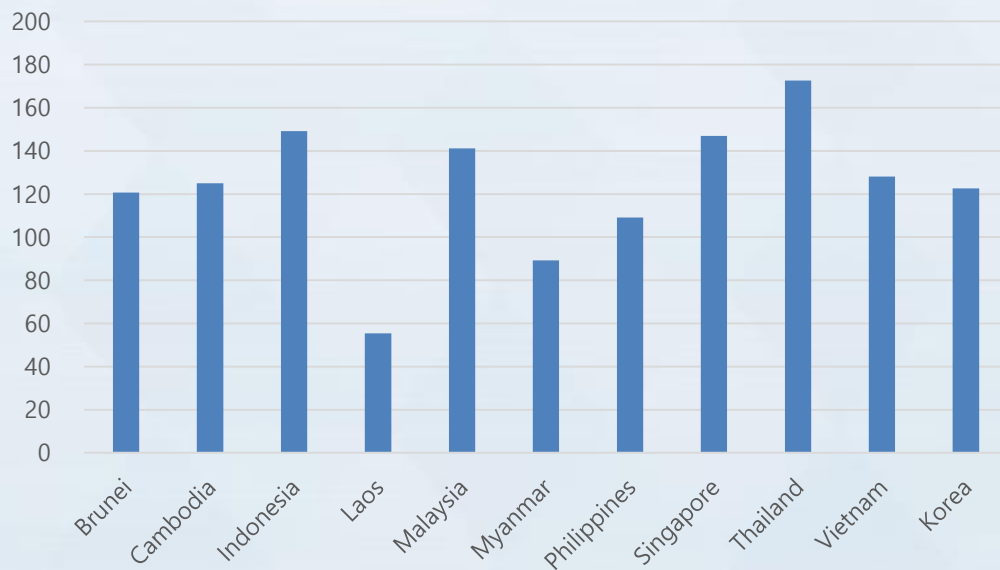
- Fixed-broadband subscriptions



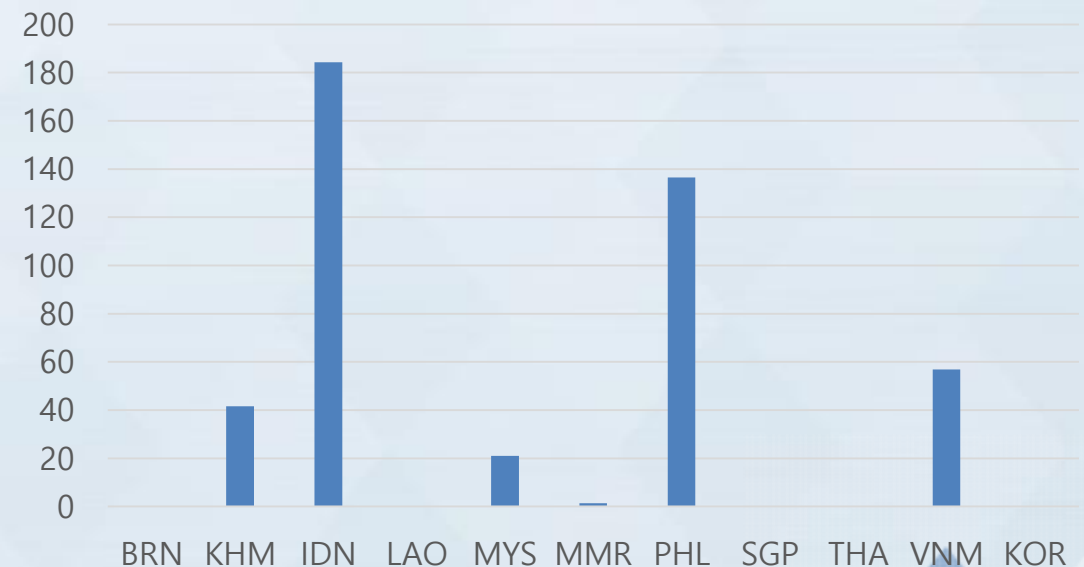
### 3. How far Countries have advanced into? (5)

- Some ASEAN countries 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.

Mobile-cellular telephone subscriptions



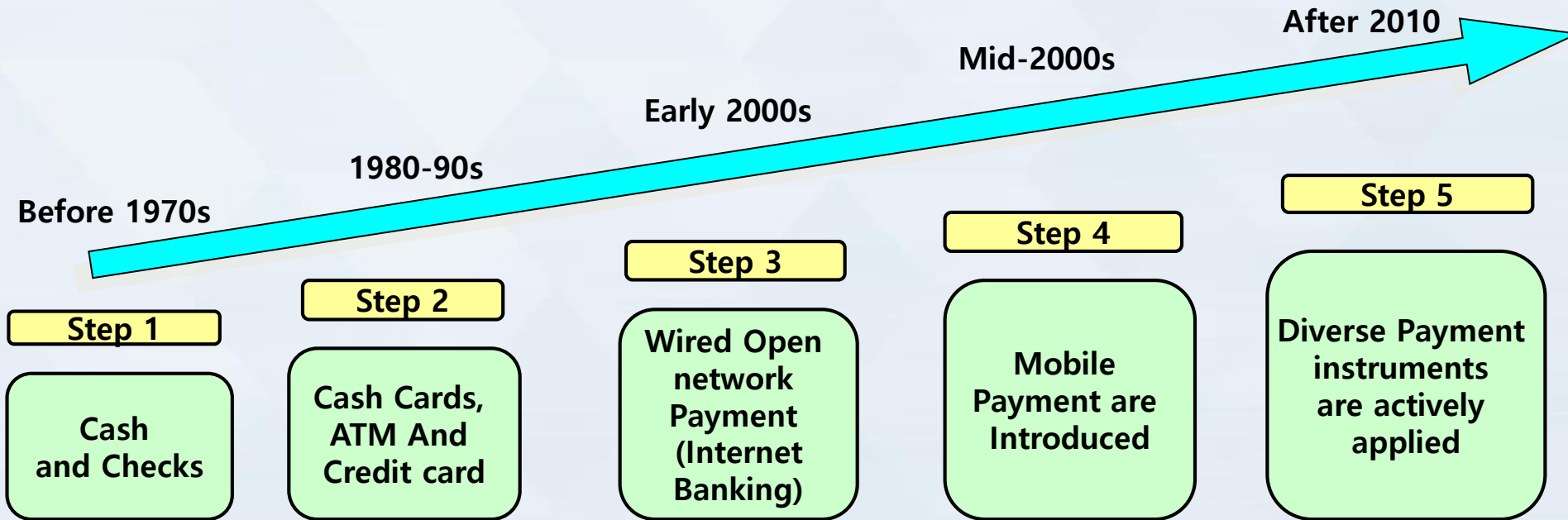
Mobile Money Accounts per 1,000 Adults



## 4. Development Story of Korea?(1)

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

## 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.



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

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

## 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'
  - o Development of payment system do not lead that of electronic commerce but development of electronic payment asked to reduce the inconvenience of payment.

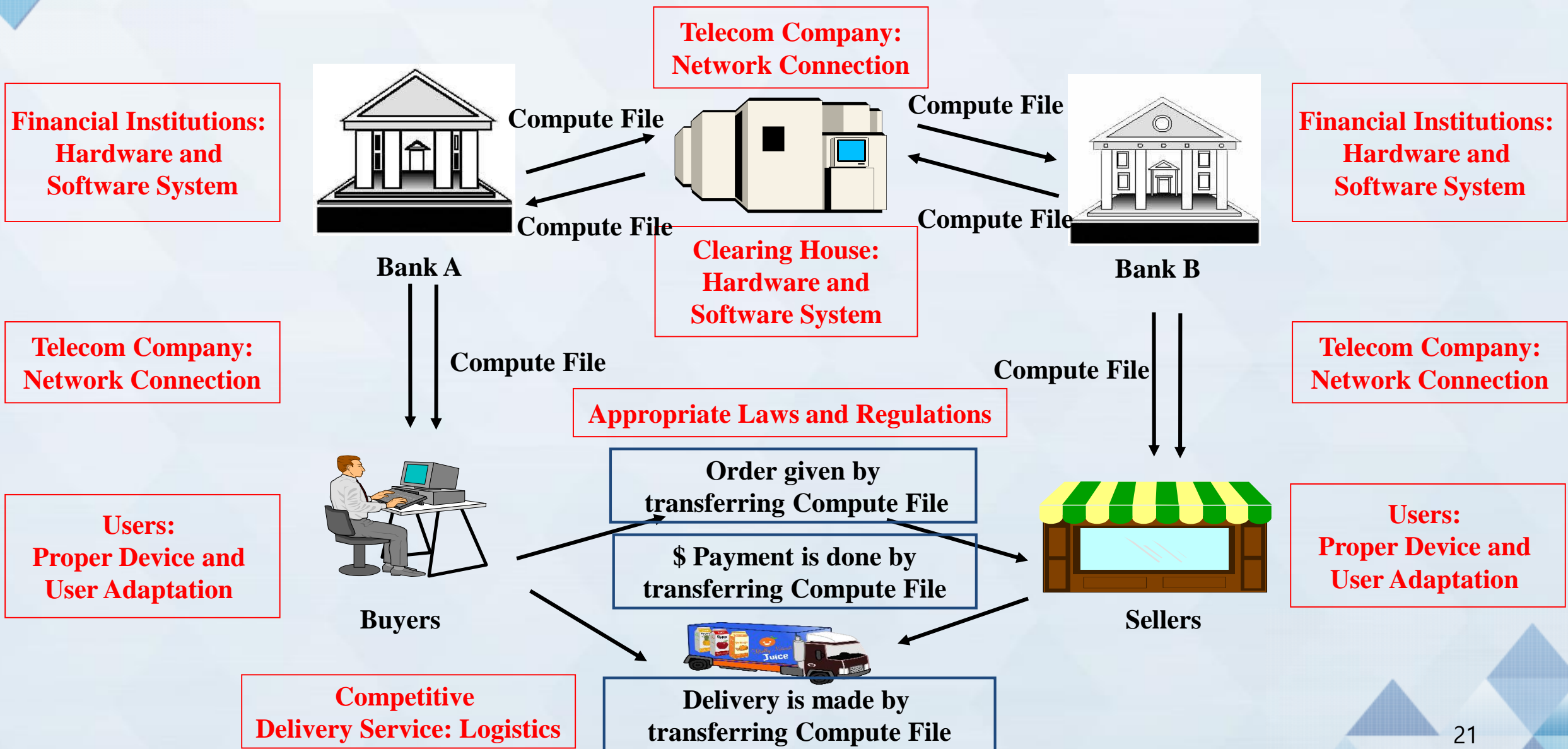
### Payment Market

- 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 infrastructure such as related laws and regulation must be provided by regulatory agency.
- 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)

- 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.
- Credibility on the e-payment and e-banking system should be established.
  - ✓ Paying cash is visible while sending a computer file is not.
  - ✓ Both consumers and merchants must have a strong trust on this system? If not, they will not use.



## 7. What ASEAN has to do (1)

- Examine the current system in ASEAN and set a goal: To provide an e-payment (or M-payment) service to all AMS residents.
  - ✓ Review what kind of system AMS currently have and what kinds of system are available to AMS.
  - ✓ ASEAN 6: expand the current service and introduce the new ones; compatible and interoperable service.
  - ✓ CLMV: have to install new payment instruments.
- These payment should be applicable to cross-border payment across the ASEAN countries.
  - ✓ May we use the service provided by commercial bank? : Maybe not. Banking market integration is very far away. There is not much incentive for them. Even central bank did not have.
  - ✓ Sending small amount of money through commercial banks are too expensive. (high fee)
  - ✓ It should be made by ICT company like Alipay, Samsung Pay etc.

## 7. What ASEAN has to do (2)

- ASEAN should have comprehensive and concrete regional payment integration plan and road map: There are many kinds of available payment instruments and networks: which one first and which one later?
  - ✓ Carefully examine which service is more urgent, more useful and more applicable and more easy to implement.
  - ✓ Some instruments required large amount money for infrastructure.
  - ✓ Which infrastructure are already installed in each member state?
  - ✓ Off-line payment instrument first or online instrument first.
  - ✓ Internet based one first or mobile based one first.
- Payment related laws and regulation should be harmonized
  - ✓ ASEAN6: Examine the current laws and regulations and make the common framework.
  - ✓ CLMV: make them new related laws and regulations.

## 7. What ASEAN has to do (3)

- Capacity building program for CLMVs.
  - ✓ Education and training programs: Without proper understanding, it cannot proceed further.
  - ✓ "To see a car, we need help them to build high way."
- Who can do it? Which country can initiate it?
  - ✓ Within ASEAN: Singapore or may be Malaysia or Indonesia
  - ✓ Within Plus 3 countries: Korea may be a strong candidate: Non-threatening country in any field. Very advanced country in e-payment and m-payment.
- Make them understand that harmonization between banking sector and telecommunication sector is very important.
  - ✓ Role of bank and telecommunication companies are correlated, complementary and sometimes competitive.
  - ✓ How frequently they cooperate before?

## 7. What ASEAN has to do (4)

- Provide both opportunity and threat to the member countries.
  - ✓ Neighboring country may dominate the domestic market if they utilize the e-commerce. There is no border in e-commerce and e-payment.
  - ✓ For example, see the case of Agoda or Booking.com. Reservation and payment is done through the foreign companies but service is provided by the local hotel.
  - ✓ Local companies have to pay fees to the e-commerce companies in other countries, formerly given to domestic company.

## 7. What ASEAN has to do (5)

Before



Buyers in Country A



Good or Service  
Cash or Check

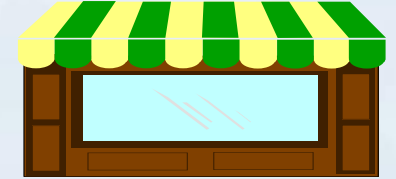


Factory



Order

Sending products



Sellers in Country A

After



Buyer in Country A

Order given by  
transferring compute files

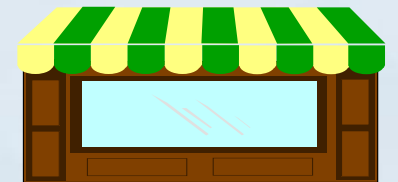
\$ Payment is done by  
transferring compute files



Delivery is made by local company



Warehouse in Country A or B

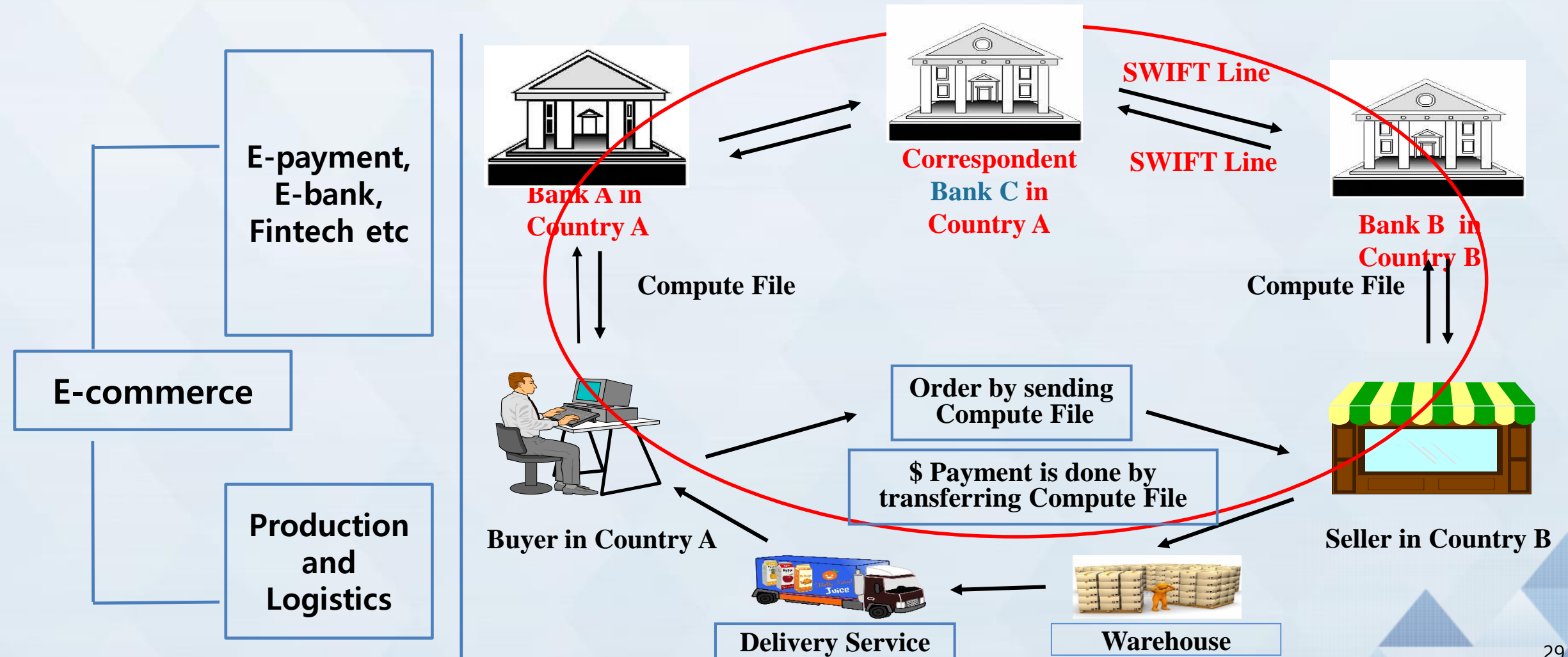


Seller in Country B



## 7. What ASEAN has to do

- We have to make cross-border payment possible at a less cost.



# 8. What we have to do. (1)

## 8.1 AEC Blueprint (1)

ASEAN ECONOMIC COMMUNITY			
Single Market and Production Base	Competitive Economic Region	Equitable Economic Development	Integration into the Global Economy
<ul style="list-style-type: none"><li>1.Free Flow of Goods</li><li>2.Free Flow of Services</li><li>3.Free Flow of Investment</li><li>4.Free Flow of Capital</li><li>5.Free Flow of Skilled Labor</li><li>6.Priority Integration Sectors</li><li>7.Food, Agriculture &amp; Forestry</li></ul>	<ul style="list-style-type: none"><li>1. Competition Policy</li><li>2. Consumer Protection</li><li>3. Intellectual Property Rights</li><li>4. Infrastructure Development</li><li>5. Taxation</li><li>6. E-Commerce</li></ul>	<ul style="list-style-type: none"><li>1. SME Development</li><li>2. Initiative for ASEAN Integration</li></ul>	<ul style="list-style-type: none"><li>1. Coherent approach towards external economic relations</li><li>2. Enhanced participation in global supply networks</li></ul>

# 8. What we have to do.(2)

## 8.1 AEC Blueprint (2)

### AEC Blueprint 2025

#### A Highly Integrated and Cohesive Economy.

- Trade in Goods
- Trade in Services
- Investment Environment
- Financial Integration, Financial Inclusion, / & Financial Stability
- Facilitating Movement of Skilled Labour and Business Visitors
- Enhancing Participation in Global Value Chains

#### A Competitive, Innovative and Dynamic ASEAN.

- Effective Competition Policy
- Consumer Protection Strengthening
- Intellectual Property Rights Cooperation.
- Productivity-Driven Growth, Innovation
- Research and Development, and Technology Commercialisation
- Taxation Cooperation
- Good Governance
- Sustainable Economic Development

#### Enhanced Connectivity and Sectoral Cooperation.

- Transport
- Information and Communications Technology
- E-Commerce
- Energy
- Food, Agriculture and Forestry
- Tourism
- Healthcare
- Minerals
- Science and Technology

#### A Resilient, Inclusive, People-Oriented and People -Centred ASEAN.

- Strengthening the Role of Micro, Small, and Medium Enterprises
- Strengthening the Role of the Private Sector
- Public-Private Partnership
- Narrowing the Development Gap
- Contribution of Stakeholders on Regional Integration Efforts

#### A Global ASEAN.

## 8. What We have to do.(3)

### 8.2 Case Studies of AEC Building: Establishing Consumer Protection (1)

- **Consumer protection is defined as a group of laws and organizations designed to ensure the rights of consumers as well as fair trade, competition and accurate information in the market.**
  - ✓ consumers should have the right of access to non-hazardous products, as well as the right to promote just, equitable and sustainable economic and social development and environmental protection.
  - ✓ Although having a law or regulation on consumer protection is quite an advance into a more fair economy and society, some consumer protection measures, such as those banning misleading advertising, apply as blanket rules across all markets.

## 8. What we have to do (4):

### 8.2 Case Studies of AEC Building: Establishing Consumer Protection (2)

#### ■ **Chronology:**

- ✓ AMS established the inter-governmental ASEAN Coordinating Committee on Consumer Protection, later renamed as the ASEAN Committee on Consumer Protection (ACCP) in 2007.
- ✓ In the first meeting of ACCP of 2008, each country presented its statues of consumer protection laws, regulation and activities.
- ✓ In the second meeting of ACCP in 2009, it endorsed the Terms of Reference (TORs) and work programs of all three ACCP Working Groups:
  - (a) Development of a notification and information exchange mechanism,
  - (b) Development of a cross border consumer redress website,
  - (c) Development and implementation of a capacity building roadmap.



## **8. What we have to do (5):**

### **8.2 Case Studies of AEC Building: Establishing Consumer Protection (3)**

- **Consumer protection in ASEAN is on the stage of early development.**
  - ✓ AMSs do not have enough expertise or practice experiences now.
  - ✓ ACCP closely worked with Australian government to enhance the ASEAN-wide consumer protection program. For example, Australian experts reviewed the current consumer protection laws and practices of ASEAN member states and made a concrete regional development program on it in 2011. (Australia, 2011) under the ASEAN-Australia Development Cooperation Program.

## 8. What we have to do (6):

### 8.2 Case Studies of AEC Building: Establishing Consumer Protection (4)

Table 1: Status of Principal Consumer Protection Laws in AMSs

Country	Principal Consumer Protection Act
Brunei Darussalam	Consumer Protection Order 2011
Cambodia	Under construction
Indonesia	Consumer Protection Act No 8/1999
Lao PDR	Law on Consumer Protection 2010
Malaysia	Consumer Protection Act 1999
Myanmar	The Consumer Protection Law 2014
Philippines	Republic Act No. 7394 - The Consumer Act of 1992
Singapore	Consumer Protection (Fair Trading) Act 2009
Thailand	The Consumer Protection Act 1979
Vietnam	Ordinance of Protection of Consumer's Interests 1999

## 8. What we have to do (7):

### 8.2 Case Studies of AEC Building: Establishing Consumer Protection (5)

- **Major co-operations between ASEAN and other countries in establishing the framework of Consumer Protection**

Subsector	Programs	Donor Country
<b>ASEAN Consumer Protection</b>	ASEAN Australia Development Cooperation Program (2008-2015)	Australia
	Assisting Building Consumer Protection Law in Laos (2010)	UNCTAD
	Capacity Building Workshops in Lao, Cambodia and Myanmar	USAID, ERIA

## 8. What we have to do (8):

### 8.3 General way of implementation on individual element of AEC

#### Building(1)

Step 1: Making AEC Building  
Committee for Each Element

- 1) Domestic institutions for each AMS are assigned
- 2) Region-wide Committee or working groups are made
- 3) monitor the integration process

Step 4: Accomplishment of AEC  
Building

- 1) New regional wide institutions are built.
- 2) Checking and monitoring of the activities of the AMS are done.

Step 2: Constructing a Community  
Building Plan for Each Element

- 1) Examine the current system of AMSs for each individual element
- 2) An agreed AEC building plan for the element are made.

Step 3: Implementation of AEC  
Building Plan

- 1) Adopting domestic laws and regulation to comply the new AEC framework.
- 2) New hardware and software system are equipped in each member state.

## 8. What we have to do (9):

### 8.3 General way of implementation on individual element of AEC Building (2)

#### ■ Obstacles and difficulties for AEC building

##### Limited Time

- ✓ The Blueprint was finalized at the end of 2007
- ✓ Only less than 7 years are left.

##### Short of Experience and knowledge

- ✓ ASEAN had never experienced any close regional economic cooperation before.
- ✓ ASEAN did have a necessary number of experts to design a new system on each element.
- ✓ Especially, less income countries of CLMV had difficulty to find a domestic expert for each element.

##### Lack of Financial Resources

- ✓ Most of AMSs are developing countries.
- ✓ International coordination take large amount of money.
- ✓ Installing new hardware costs a substantial amount of money.



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**