

Introduction to Taiwan e-Government

Taiwan e-Government

emome

HiNet



2012



中華電信
Chunghwa Telecom

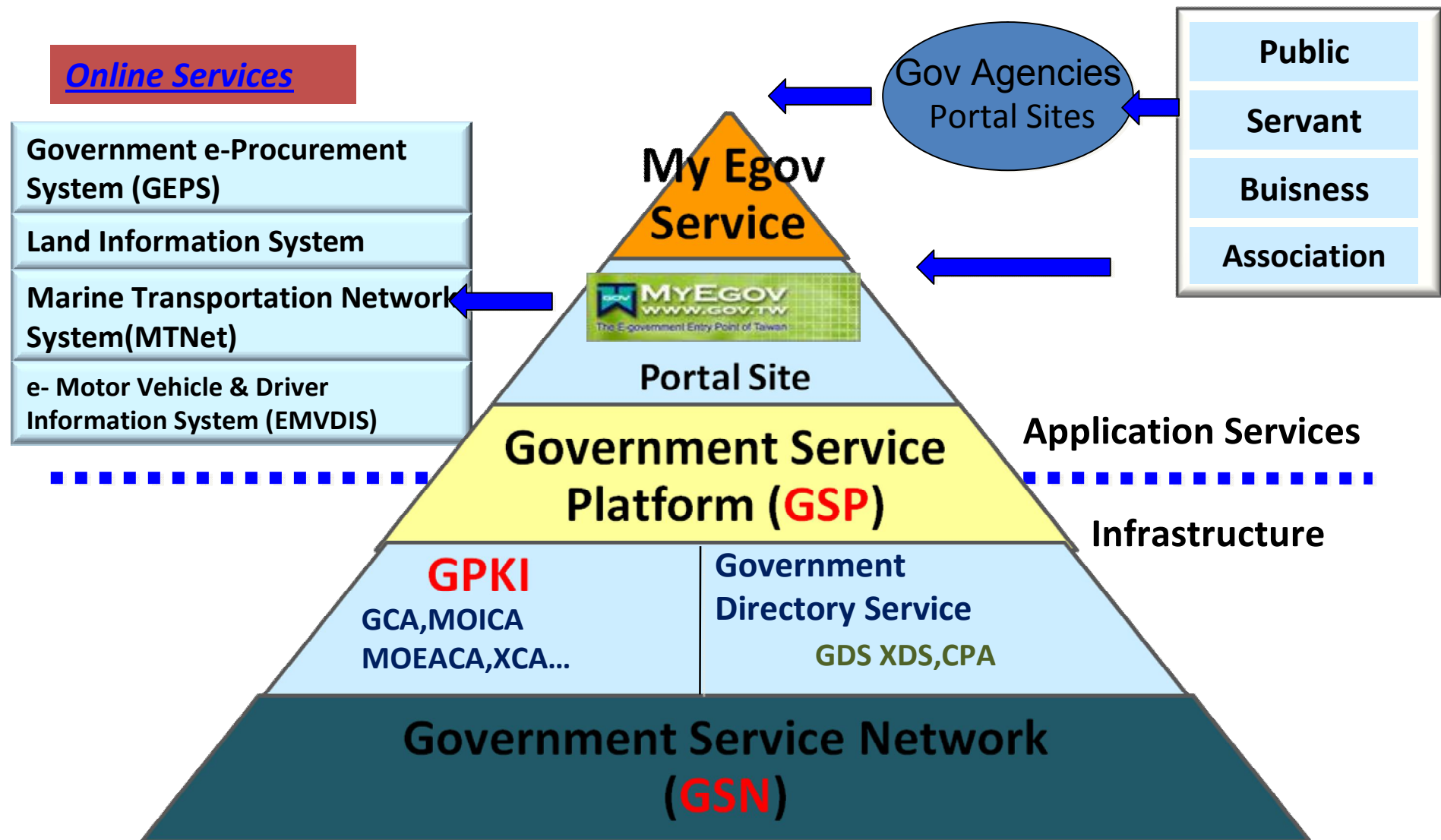
Outline

- Role of CHT in Taiwan e-Government
- CHT Wi-Fi
- Government PKI (GPKI)
- PKI-enabled e-Government Applications



Role of CHT in Taiwan e-Gov Services

e-Government Structure



Role of CHT in Taiwan e-Government

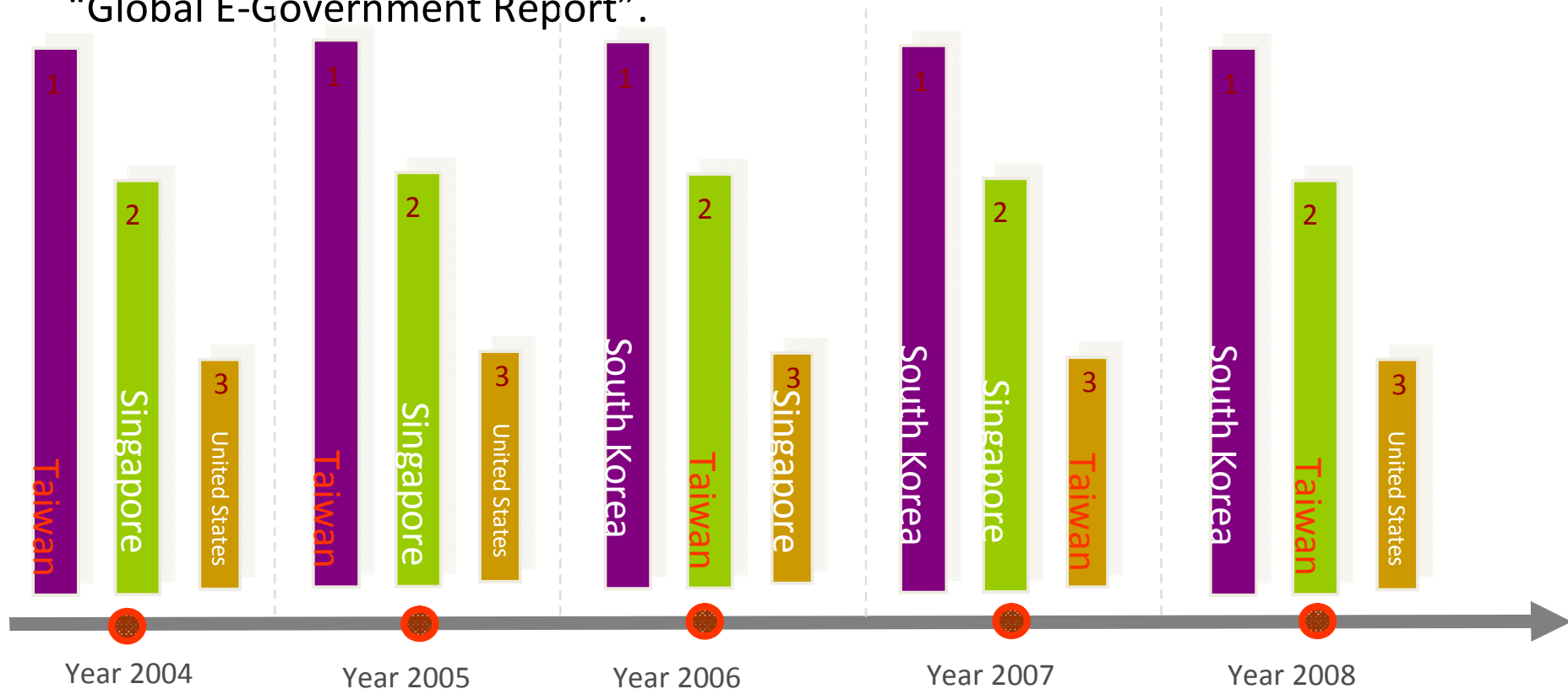
- CHT's **Data Communications Business Group (CHT-D)**, a business branch of Chunghwa Telecom, won several contracts of **Taiwan's major e-Government projects** such as
 - **Government Service Network (GSN),**
 - **Government Public-Key Infrastructure (GPKI),**
 - **Government Service Platform (GSP), and**
 - **several other projects of Taiwan e-Government applications.**
- CHT is a major e-Government service provider in Taiwan.
- The **core technologies of GSN, GPKI and GSP** are provided by CHT's **Telecommunication Laboratories (CHT-TL)**, which is Chunghwa Telecom's R&D Institute.

e-Government Services by CHT

- Infrastructure
 - Government Service Network (GSN)
 - Government PKI (GPKI)
 - Government Service Platform (GSP)
- e-Government Promotion
 - e-Government Portal
- Application Services
 - Government e-Procurement System
 - Land Information System
 - Marine Transportation Network System (MTNet)
 - Online Motor Vehicle and Driver Information Services

Achievements

- Since 2004, Taiwan e-Government has been ranked Top 3 by Brown University's "Global E-Government Report".



- According to the latest "Global Information Technology Report 2010-2011" published on 12 April, 2011, by the World Economic Forum (WEF), Taiwan's government ICT usage ranks second in the world.

ChungHwa Telecom. Public Wi-Fi Service

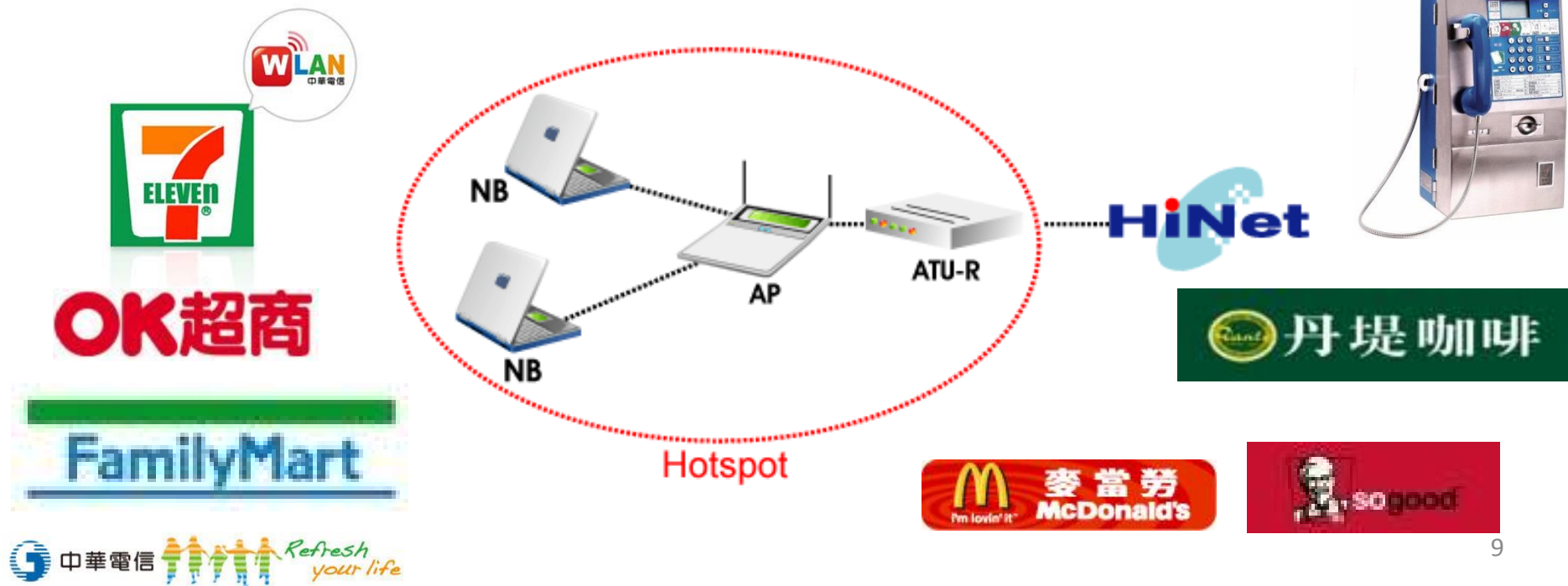


熱點無線上網
Available here

Wi-Fi
Infrastructure

Introduction to CHT Wi-Fi

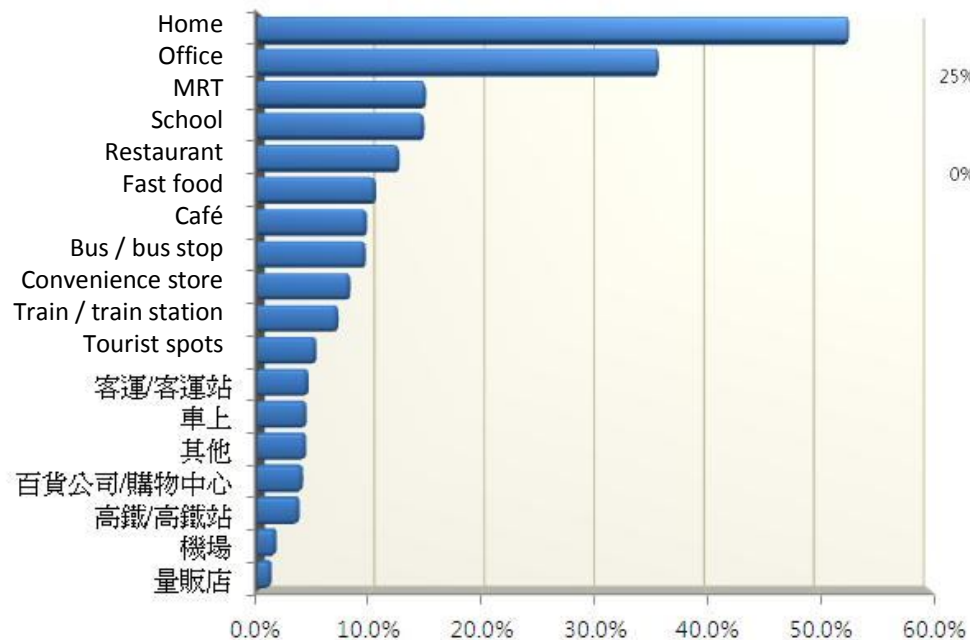
- Provide CHT's subscriber Wi-Fi access
 - Over 30,000 hot spots in public area and shops
 - Various authentication methods such as OTP, pre-paid card, roaming member
- Services of CHT Wi-Fi
 - Hi speed Wi-Fi internet service.
 - Located at public telephones, convenient stores, café, and restaurants.
 - Not only in urban area, but also in suburb area



Mobile Internet Statistics

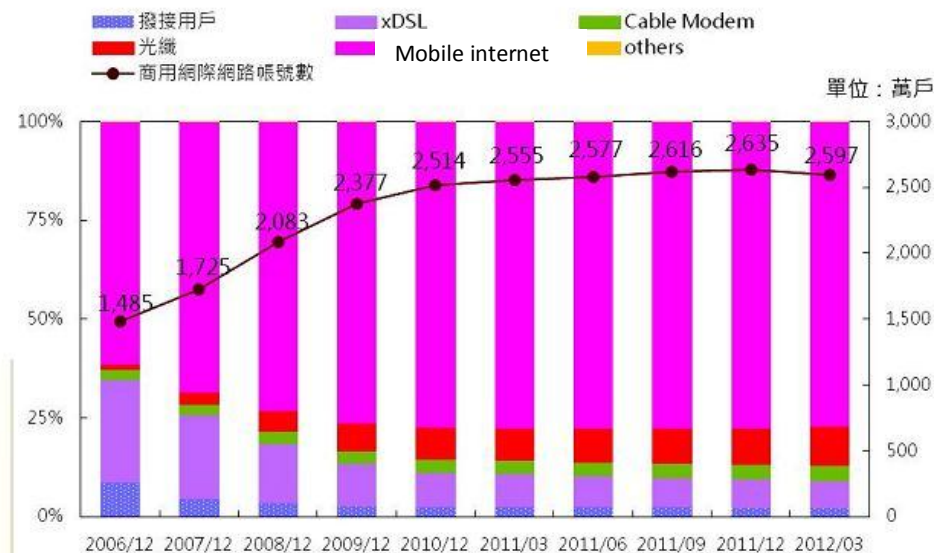
Location of mobile internet

圖2 台灣民眾手機行動上網主要地點



資料來源：資策會FIND (2012/09)

圖 2 歷年我國商用網際網路帳號總數



資料來源：資策會FIND (2012/07)

Internet accounts analysis

Supplementary to 3G Network

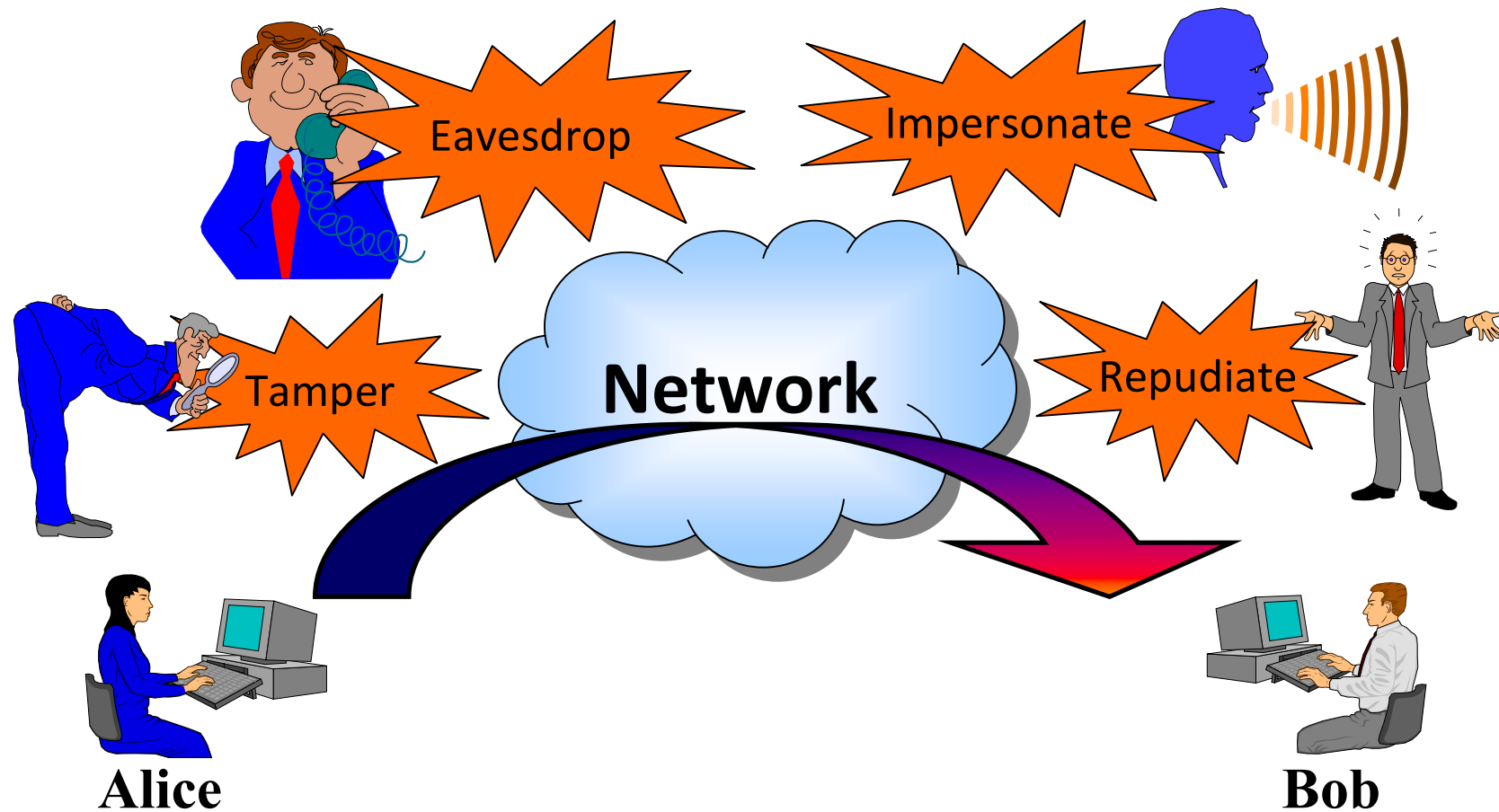
- 3G network is not enough
 - Crowds protest about base station
 - Indoor signal decay
 - Concentrated subscribers
- Mobile internet heavily used without moving
 - Providing Wi-Fi for indoor heavy users
 - Reduce the loading of 3G network



Government PKI (GPKI)

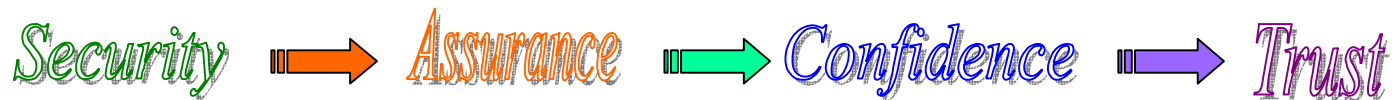
Infrastructure Taiwan e-Gov Services

Network Security Threats



Information Security Needs for e-Government

- To convince people to interact with e-Government, we have to make them trust the electronic means of interaction.



- Some common issues of e-Government information security:
 - How to make sure user identity?
 - How to prevent repudiation of online transaction?
 - How to detect tamper of data?
 - How to protect privacy?
 - How to keep confidentiality of sensitive data?

Public Key Infrastructure

- Public Key Infrastructure (PKI) technologies as countermeasures against network security threats:

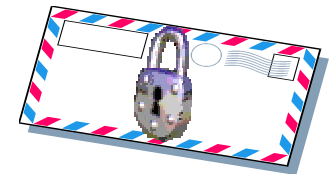
- Digital Signature:

- Ensure integrity, authenticity, non-repudiation.
- As a countermeasure against tampering, impersonation, repudiation.



- Digital Envelope (a.k.a. Public Key Encryption):

- Ensure confidentiality.
- As a countermeasure against eavesdropping.



Identity Management

Identity Management:

It's a question of getting the right information to the right person at the right time.



By Peter Steiner on page
61 of July 5, 1993 issue
of the New Yorker

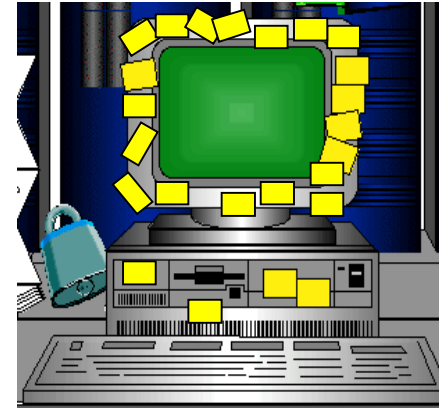
Identity Management

Problem of Username/password:

- User data is distributed over many different repositories:
 - Operating Systems, Databases and Applications
- One login per system/application
- Different password policies
- Degular password change
- It is very easy to eavesdrop username/password
- Results in: Security risks, inconvenience for users (too many passwords) and high processing costs (helpdesk)

How to earn trust on e-Government?

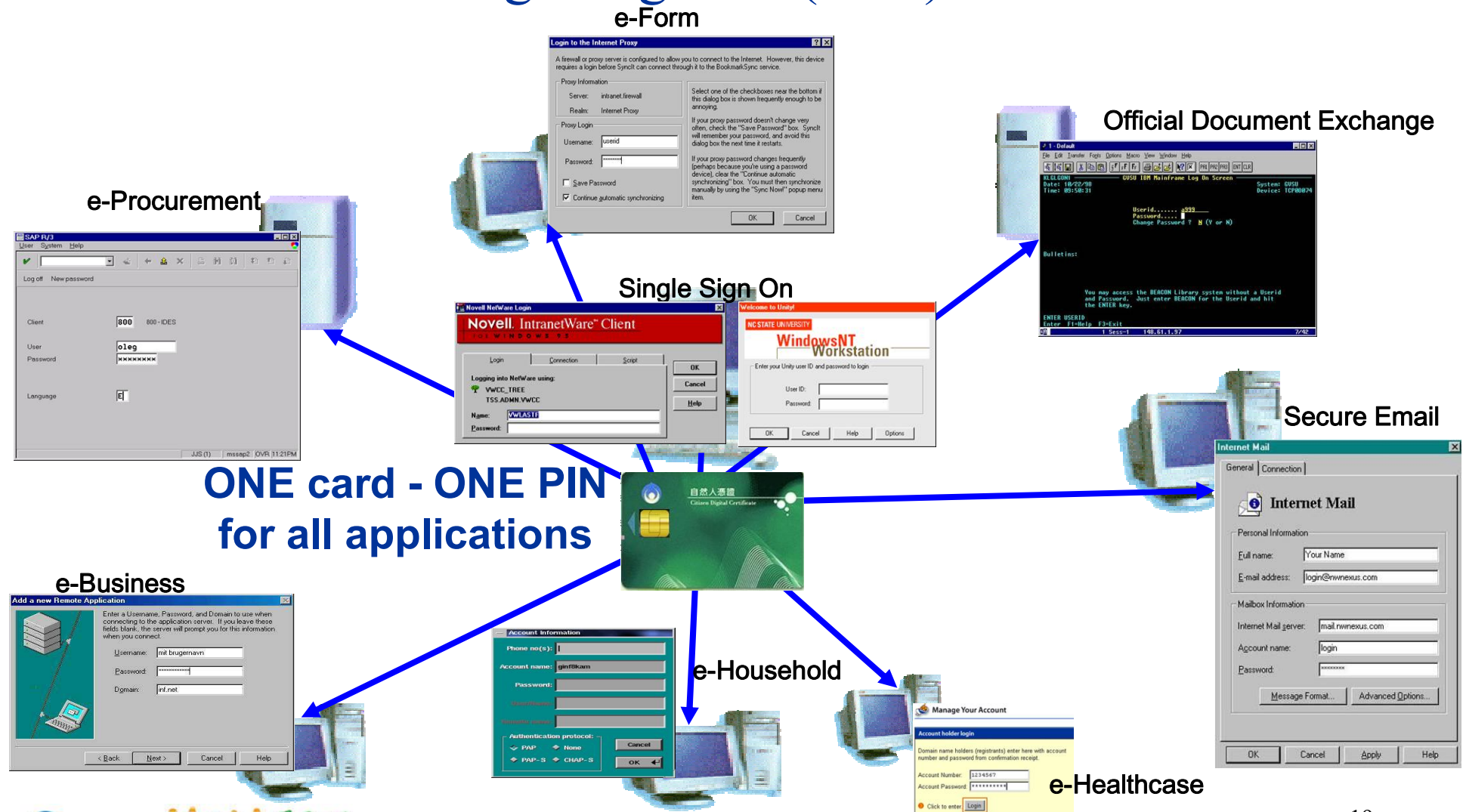
-- Information Security Technology



- Users fear to forget passwords and write them on paper or elsewhere...
- ... cause security risks in practice and high helpdesk support...

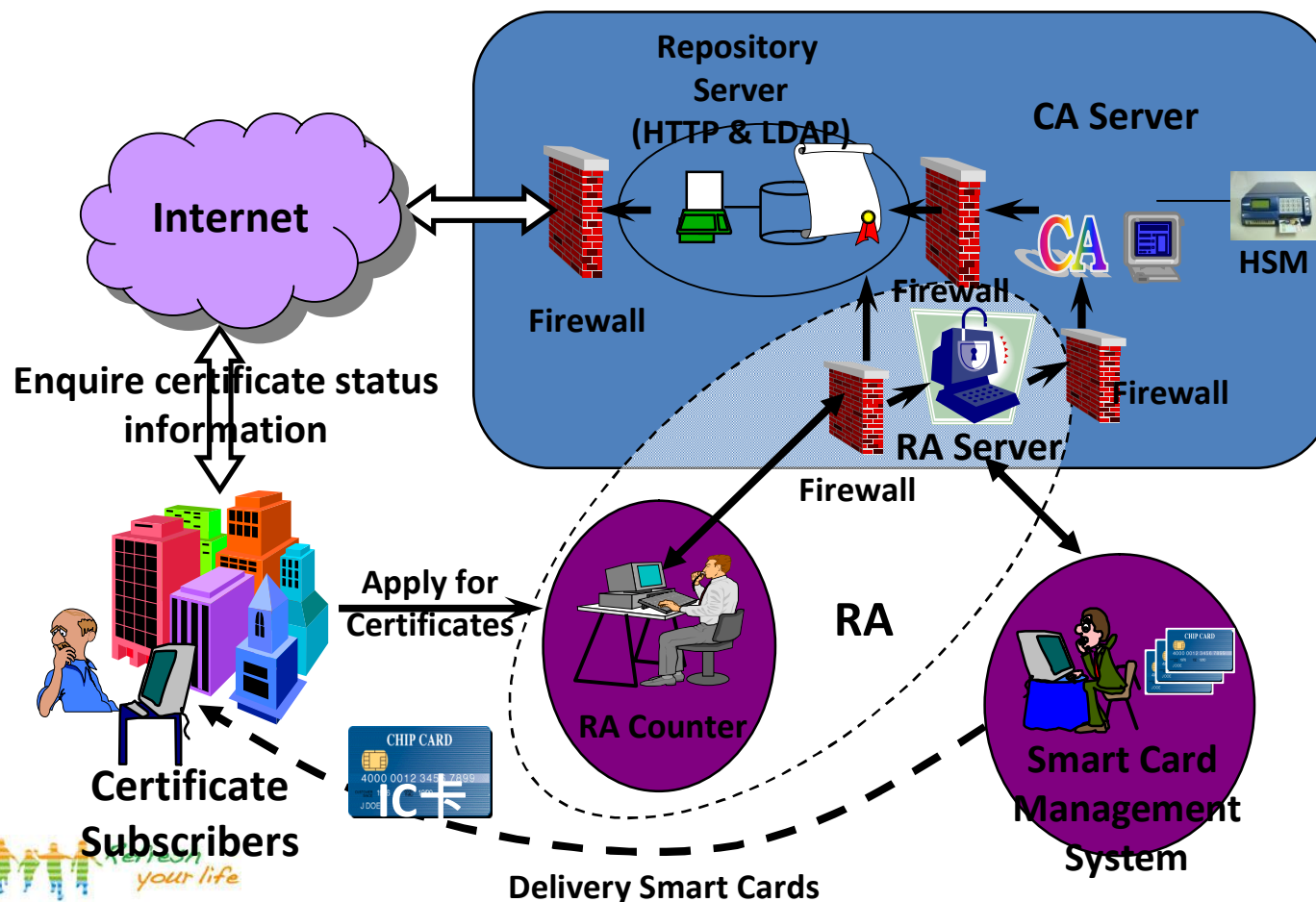
Identity Management

Solution: Single Sign On (SSO) with Smart Cards



PKI Solution from CHT

- **CHT HiPKI Certificate Management System**
 - A full-featured PKI system that provide high-assurance level of management on X.509 certificates and smart cards.



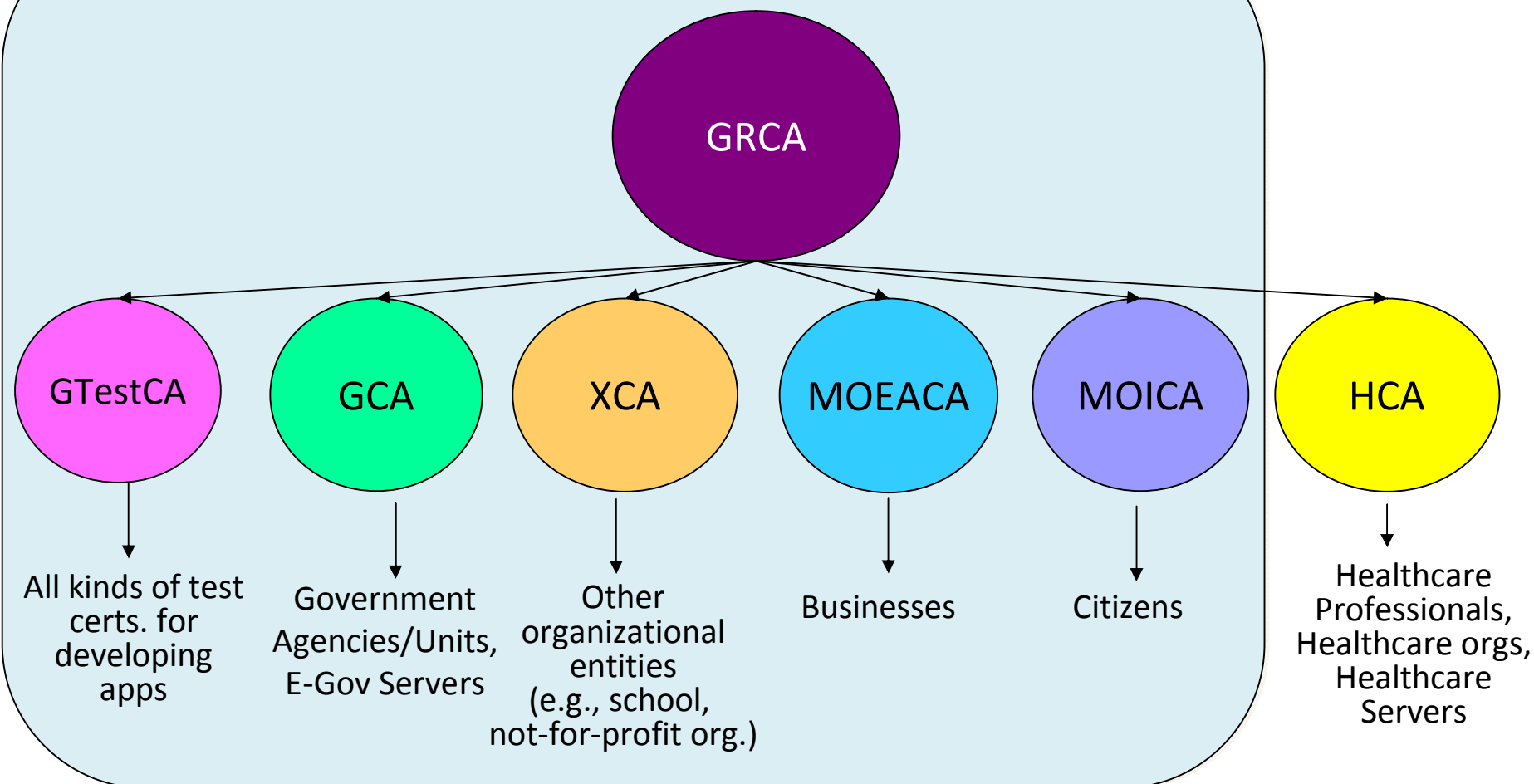
We provide full range of PKI-related Products

Information Security Technology	Product provided by CHT
X.509 Certificate Management	<ol style="list-style-type: none"> 1. HiPKI Root CA System (for Root CA) 2. HiPKI Certificate Management System (for Subordinate CA)
Hardware Security Module (HSM)	HiPKI SafGuard HSM
Smart Card/USB Token	HiCOS Smart Card / HiKey
High-Level Middleware	HiPKI Toolkit
Certificate Validation Server	HiPKI Certificate Validation System
Smart Card Management	HiPKI Card Management System
Secure Gateway	HiSafeNet (SSL VPN)
Timestamp Service	HiPKI Timestamp Server
Data Validation and Certification Service (DVCS)	HiPKI DVCS
Secure Identity Management and Access Control (Single Sign On)	IAM Service Platform



Taiwan Government PKI (GPKI)

- Powered by CHT HiPKI Certificate Management System

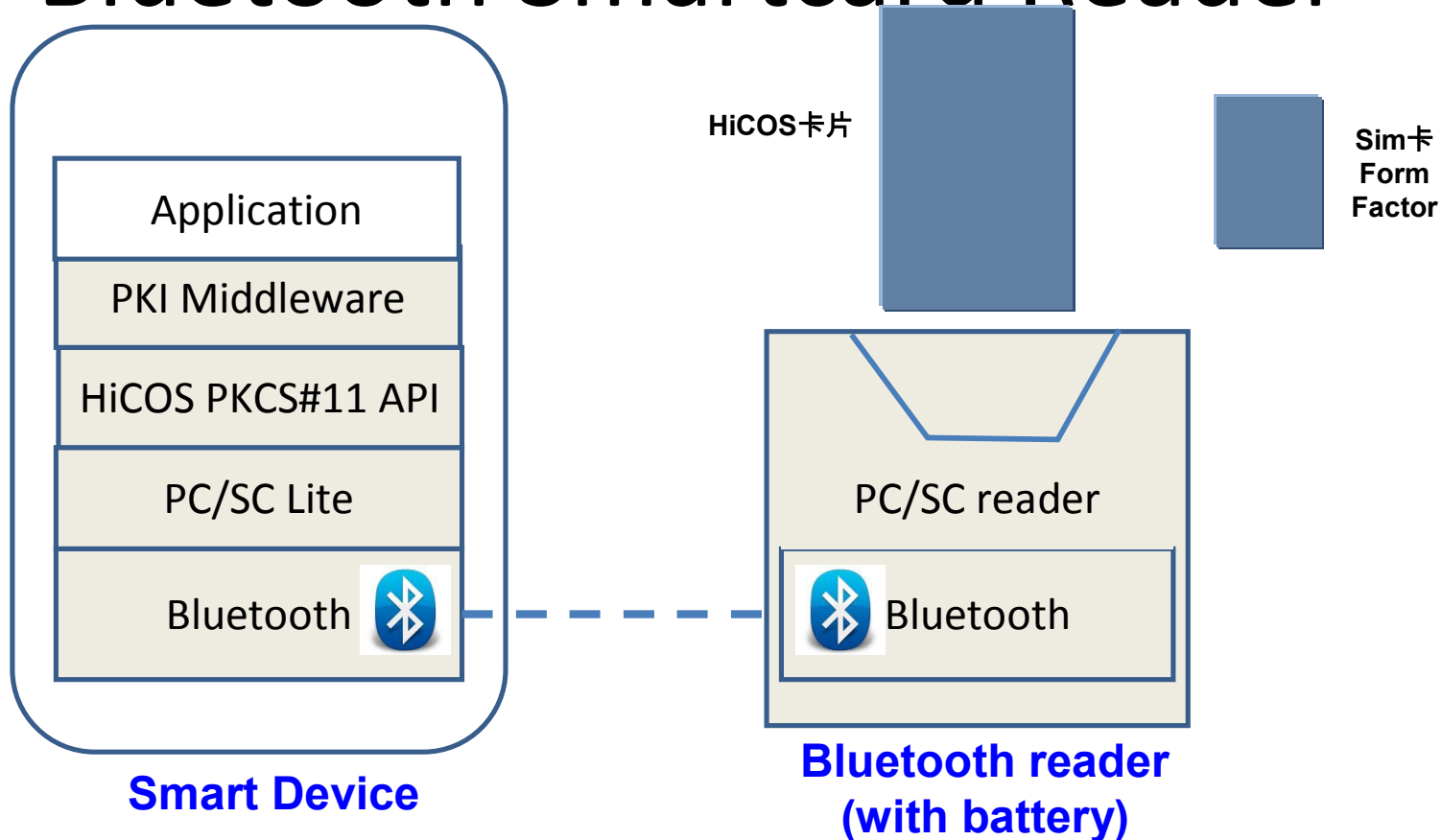


PKI Achievements

CA	Number of Smart Cards Issued
GCA	74,336
XCA	60,034
MOEACA	1,045,072
MOICA	3,012,697
Total	4,192,139

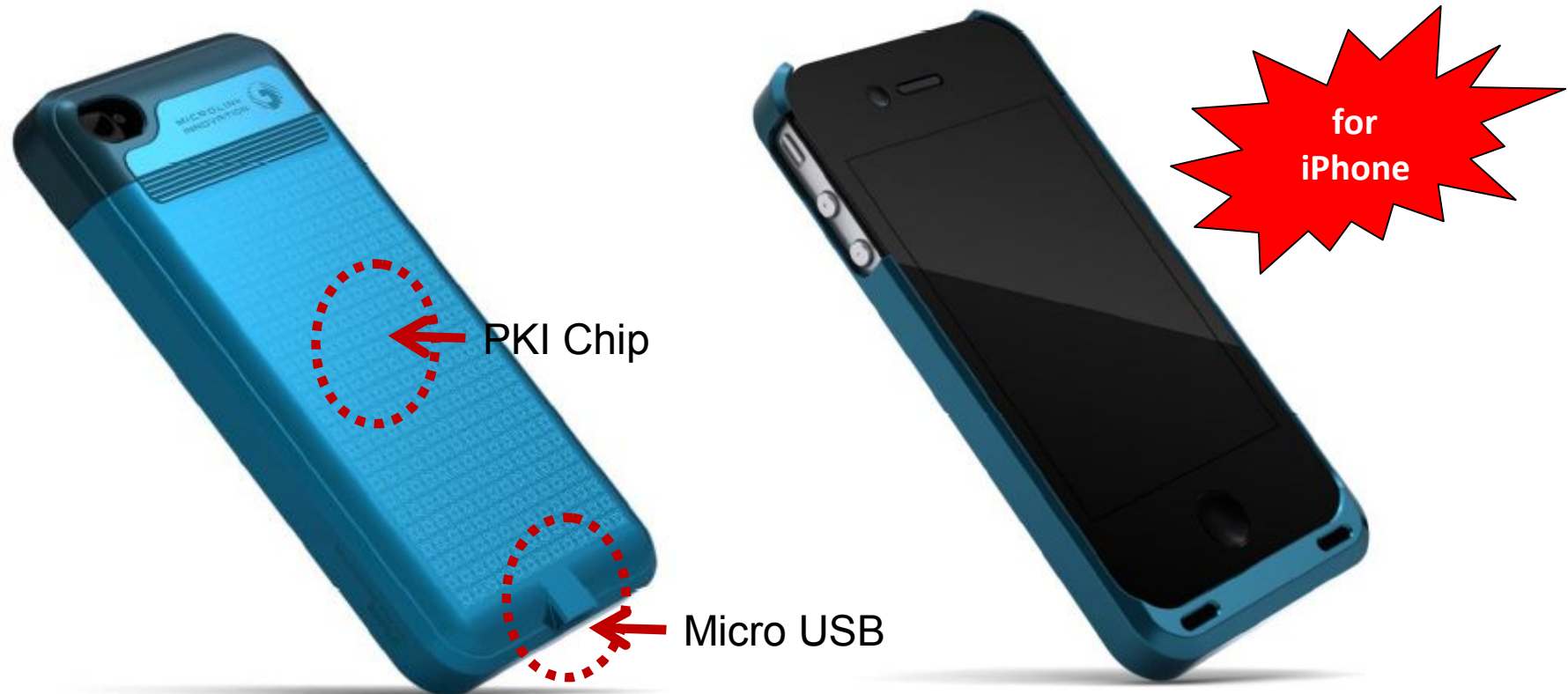
Up to Aug 28 2012

Bluetooth Smartcard Reader



- Support units with bluetooth
(including Android/Windows
Mobile/iOS)

iPhone PKI Cover



- PKI Chip build-in iPhone Cover
- Chip connect with iPhone via 30 pin connector, and micro USB is used as charging /sync.
- The cover includes Apple authentication chip, and validated by Apple



PKI-enabled e-Government Applications

Applications Taiwan e-Gov Services

PKI-enabled Applications

□ MOICA applications :

- ◆ Enquiry of Electronic Motor Vehicle & Driver
- ◆ Personal tax declaring
- ◆ Citizens e-Service Online Application

□ XCA applications:

- ◆ Farmer and Labor Insurance System
- ◆ Official Document Interchange

□ MOEACA applications:

- ◆ On-line company registration
- ◆ On-line bidding
- ◆ On-line tax reporting
- ◆ On-line labor insurance arrangement

□ GCA applications:

- ◆ e-Procurement
- ◆ e-Bidding
- ◆ e-document exchange

PKI-Enabled Application

On-Line Land Administration

- Use Cases
 - G to C application
 - In many situations, people are required to provide property certificate of their real estate, for example:
 - House/Land trading
 - Applying for a bank loan
 - Property Tax filing
 - Also, before doing their property trading, buyers would like to check the status of the target property

PKI-Enabled Application

Traditional Land-Administration Process



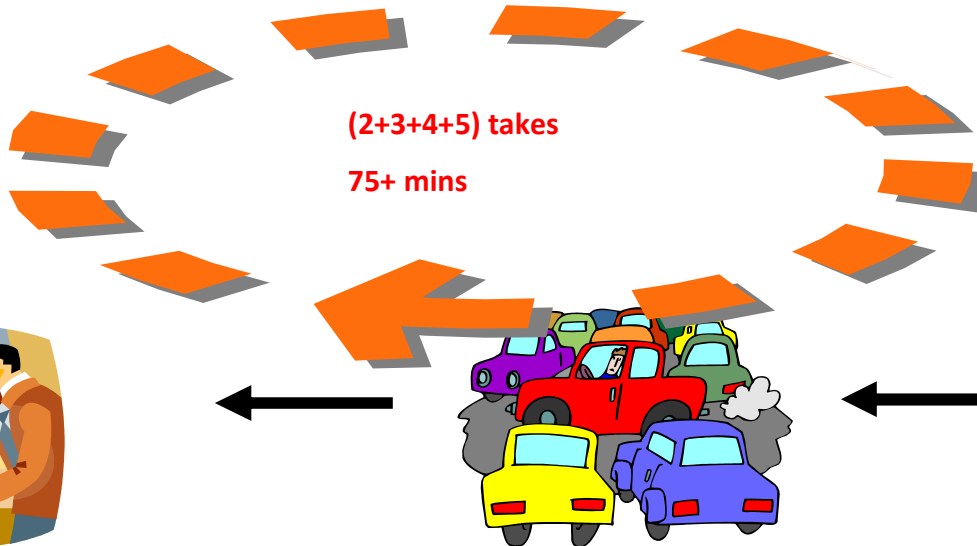
1. Apply for a loan and prepare a land certificate for deposit purpose



2. Call agent to go to Land Admin Office for land certificate (5 mins)



3. Agent drives to Land Admin Office (30 + mins)



6. Finish loan application at bank

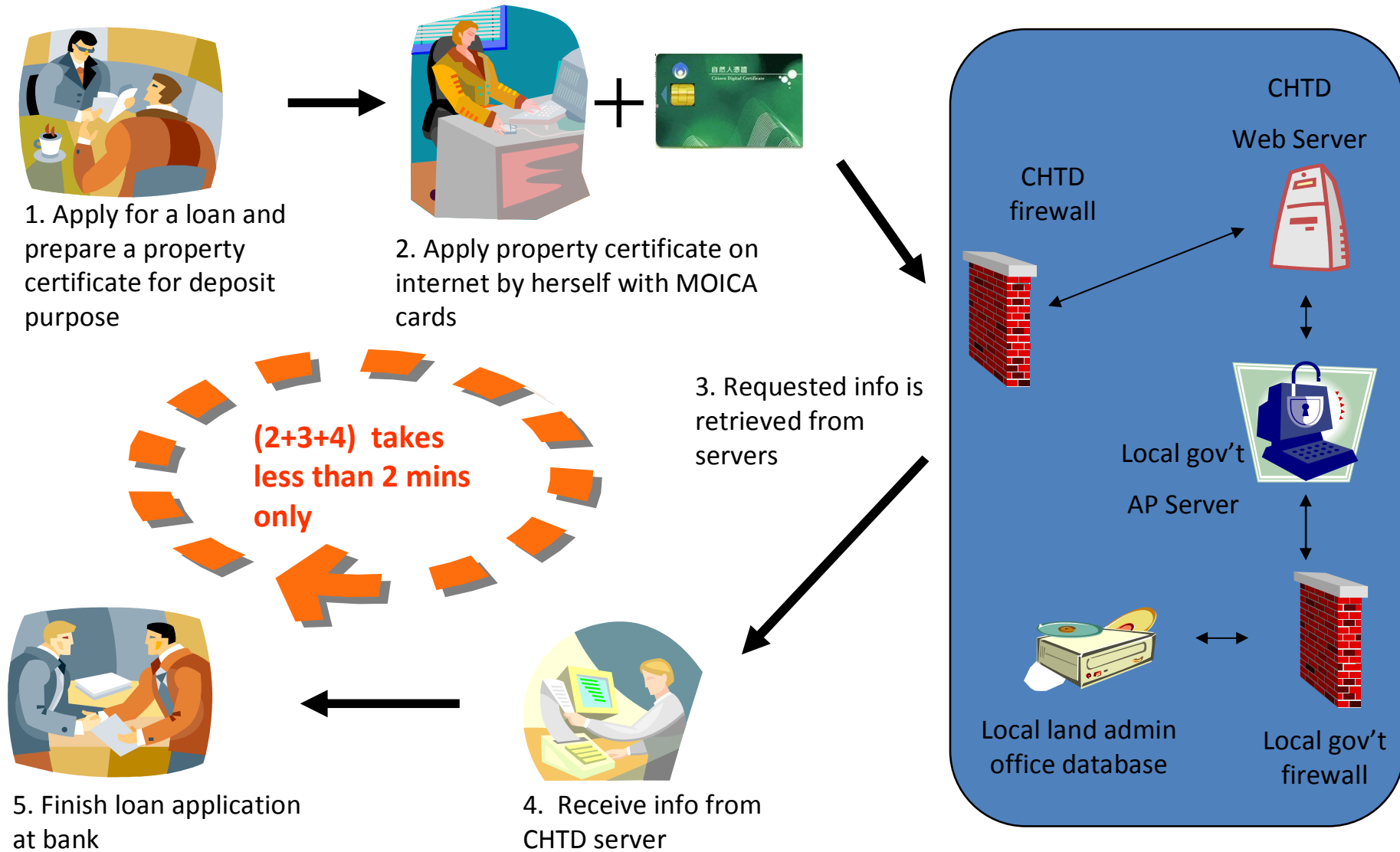


5. Receive land certificate and drive to bank (30+ mins)



4. Waiting at Land Admin Office (10 mins)

Online Land-Administration Process with smart cards issued by MOICA



PKI-Enabled Application

Government e-Procurement System

The screenshot shows the homepage of the Government e-Procurement System. At the top, there is a banner with the title "Government e-Procurement System" and a "Chinese" language selector. Below the banner, there is a "Search for Procurement" button. The main content area is divided into two sections: "Summary Tender Notice" and "Prior Information Notice". The "GPIS News" section contains a bullet point about the World Trade Organization (WTO) Government Procurement Agreement (GPA) accession to the Agreement on Government Procurement (GPA) on September 9, 2008. The "Introduction" section contains two bullet points: "Summary Tender Notice" and "Prior Information Notice".

Goals :

1. Transparency
2. Centralization
3. Integrity
4. Legality
5. Electronic Commerce
6. Efficiency

PKI-Enabled Application

Government Official Document e-Service G2B2C System

The screenshot shows the homepage of the '公文e網通' (Official Document e-Service) system. The header includes the 'GOOD' logo and the text '公文e網通 電子化公文入口網' with the URL 'www.good.nat.gov.tw'. Navigation links include 'Web公文製作系統', '基層機關公文整合系統', 'G2B2C客服網站', '客服信箱', 'FAQ', and '網站地圖'. The main content area features two news items: '文書處理手冊修訂版出爐了!' (Document Processing Manual Revised Edition Released!) dated 2010-01-27, and '公文電子交換申請表單新版出爐囉!!' (Official Document Electronic Exchange Application Form New Edition Released!!) dated 2010-01-06. A left sidebar lists '業務焦點' (Business Focus) and '公文專區' (Official Document Special Area) with links like '最新消息', '下載服務', '客戶服務', '電子報', '公文交換', '公文管理', and '公文製作'. A right sidebar contains '研習資訊' (Study Information), 'e公務 下載 訊息精華' (e-Government Download Information Highlights), '政府訊息 主動通知' (Government Information Active Notification), and 'GOID' and 'CCA' logos.

The G2B2C System provides government to exchange official document through Internet with different bureau or departments .

PKI-Enabled Application

Health Insurance Service

通知：本系統服務時間每日08:00-20:00 ★



行政院衛生署中央健康保險局
Bureau of National Health Insurance,
Department of Health, Executive Yuan

多憑證網路承保作業（原網路加退保作業）

- » ☐ 使用自發憑證(原金鑰磁片)
- » ☒ 使用電子憑證(自然人憑證/工商憑證-等)
- » ☐ 使用電子憑證(醫事憑證IC卡)
- » ☐ 單位憑證註冊作業

請插入電子憑證，輸入密碼後請按『確認』

» 密碼 (PIN CODE)

確認

清除

[電子憑證及讀卡機偵測工具](#)（請於讀卡機置入憑證後再點選連結功能）

[瀏覽器設定](#)

[NEW!! \(2048bits憑證安裝及測試\)](#)

自然人憑證申辦流程：<http://moica.nat.gov.tw/html/rac.htm>

政府機關單位憑證申辦流程：<http://gca.nat.gov.tw/>

工商憑證申辦流程：<http://moeca.nat.gov.tw>

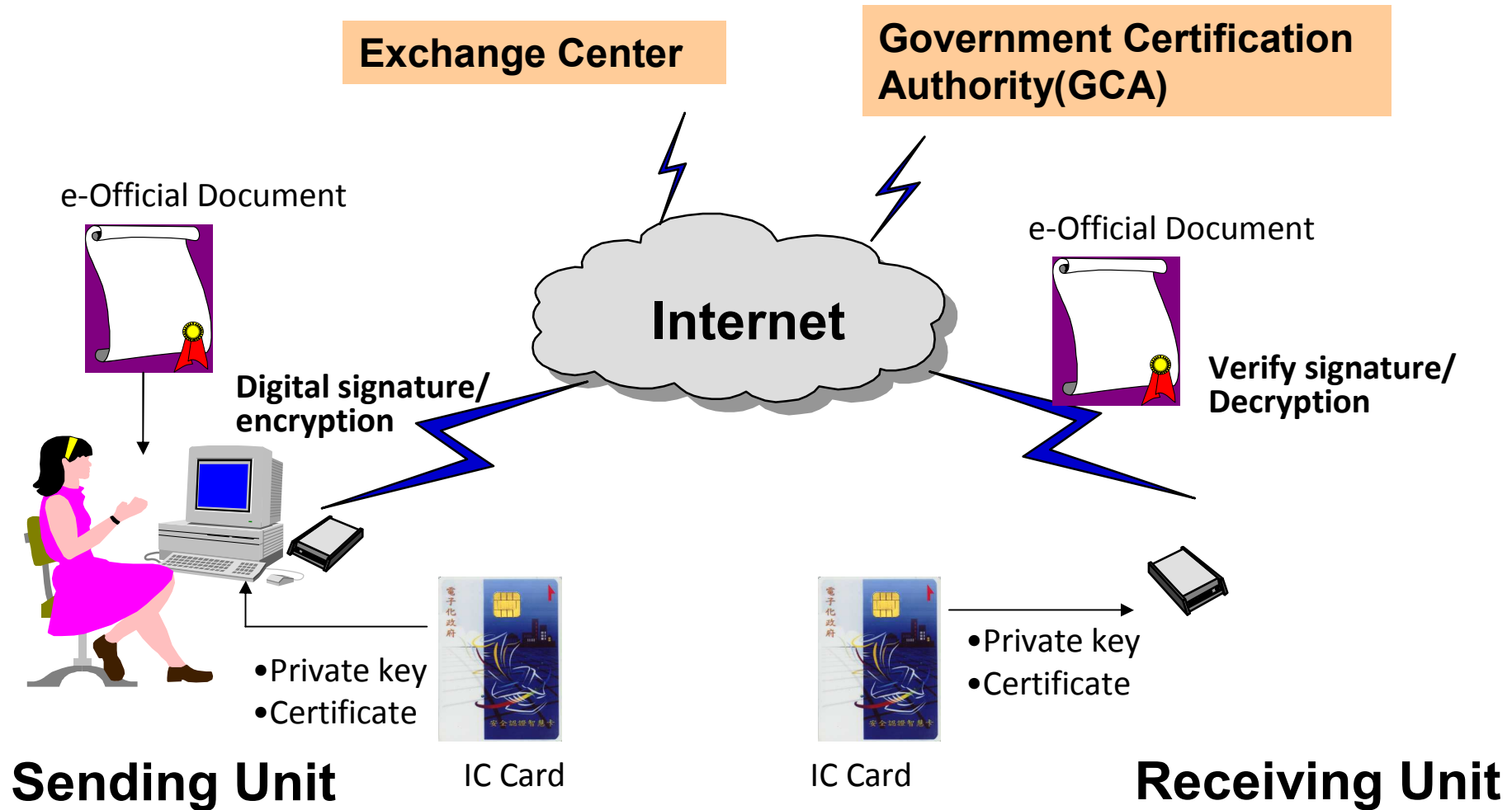
組織及團體憑證申辦流程：<http://xca.nat.gov.tw>

請使用 IE 6.0 以上之版本，本系統不支援其他瀏覽器或 IE 5.5 以下的版本
最佳之顯示解析度為 1024x768 (small font)

The Bureau of National Health Insurance has set up “Online Inquiry”. Citizens can use their digital certificates to proceed online underwriting operation such as health insurance application, enrollment enquiry, insurance changes, individual record changes , etc.

Back Office Improvements and Integration

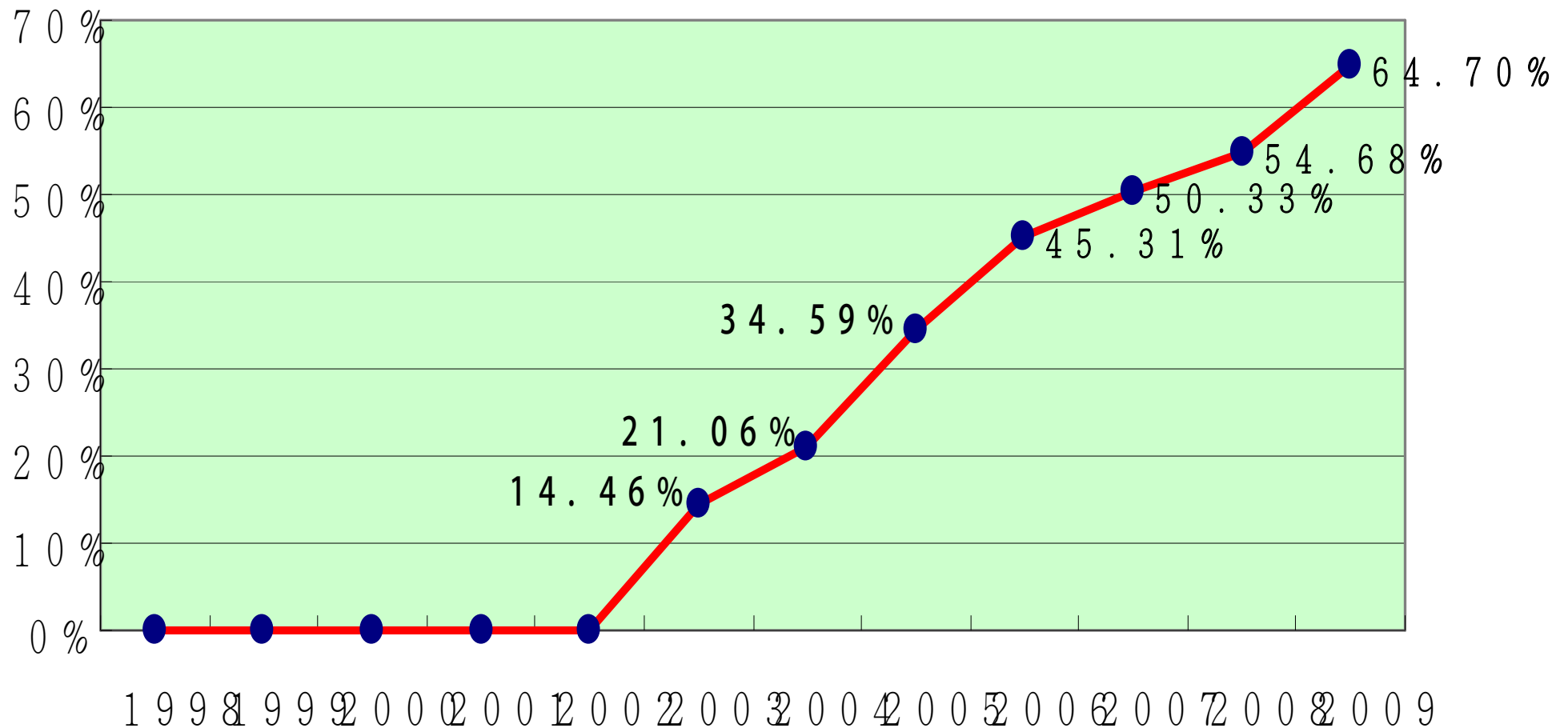
Electronic Official Document Exchange (G2G)



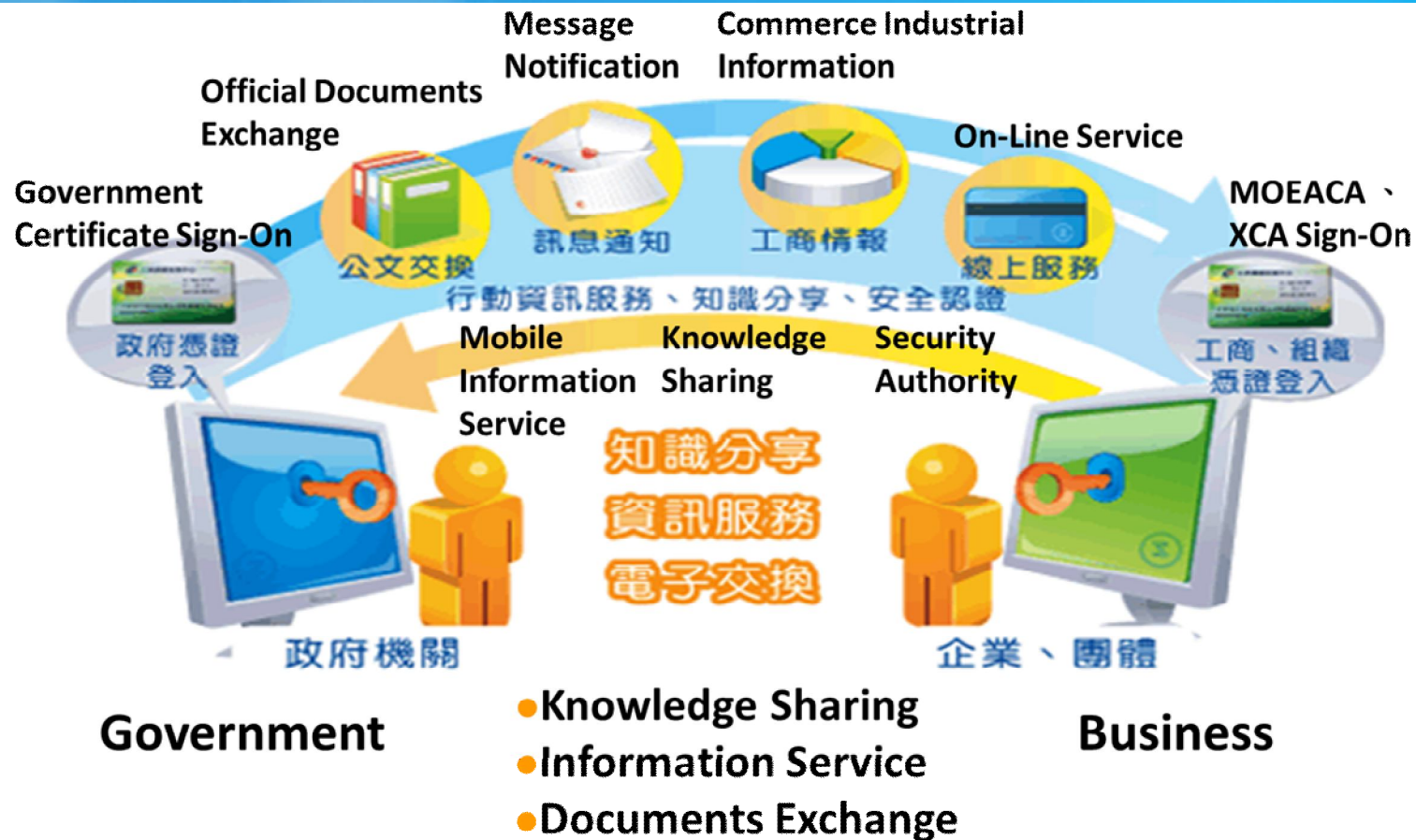
Online Income Tax Filing (G2C)

In 2009, 64.70% of 4.8 million taxpayers filed **individual income tax** via Internet

Percentage of Online Tax Filing



e-Helper for Businesses



Enterprises can use certificates issued by MOEACA or XCA to sign-on to the e-Helper system then execute the functions of official documents exchange, message notification, commerce industrial information, on-line service, etc. Furthermore, the system also provides mobile information service, knowledge sharing, and security authority to enhance the advantages of government and enterprises in all aspects.



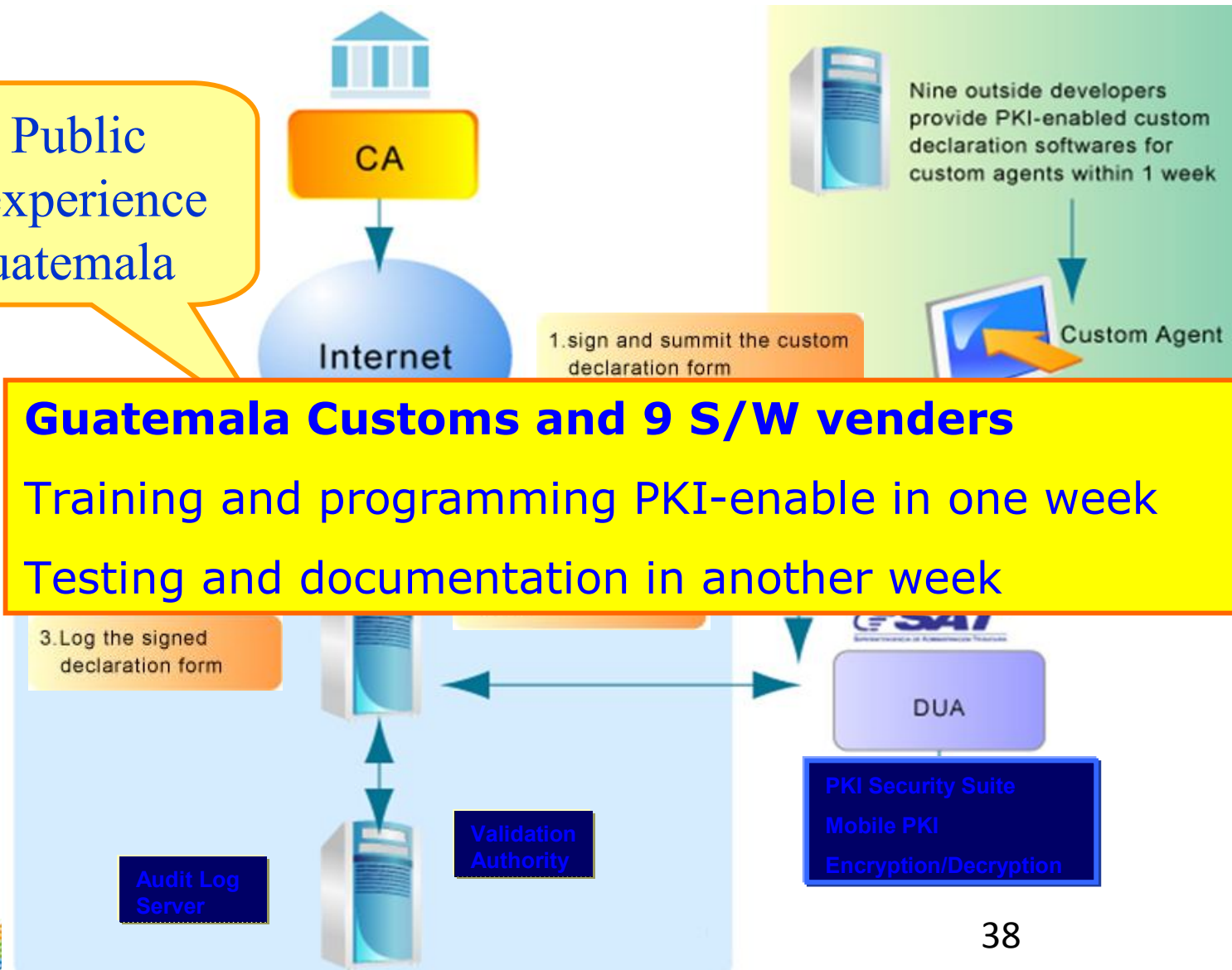
Successful Case Abroad: Guatemala SAT-DUA (Custom declaration)

Guatemala SAT-DUA (Custom declaration)

CHT Public
CA experience
in Guatemala

Guatemala Customs and 9 S/W vendors

Training and programming PKI-enable in one week
Testing and documentation in another week



Guatemala SAT-DUA



Superintendencia de Administración Tributaria / Guatemala



- In 2008, There were 18,000 Millions quetzales (US\$ 2,313,151,939) declared to SAT using ARES uPKI Validation Authority & CHT certificates
- Within 18 months, there are more than 33 million transactions



*Value Creator for
Investors, Customers, Employees, and Society*

Thank You !