Contents

1. e-Customs
2. e-Procurement
3. Korea Post e-Logistics System
4. Port Logistics
5. Local e-Government Informatization & NID
6. Intellectual Property
I. e-Customs

1. Overview
2. Case Study
3. Benefits
4. System Details
Web based single window clearance portal with 110,000 participants from public and private Sectors

1. Overview: UNI-PASS

World Trade Expansion

Limited Customs Capacity
1. Overview: CUPIA

Non Profit, Exclusive Right of Introducing UNI-PASS to Foreign Customs
2. Case Study: Dominican Republic

Any Time, Any Place

DGA Information System

Import/Export Clearance

Cargo Management

Information Service

Relationship Management

Remote Backup Center

Trader

Customs Broker

Carrier

Forwarder

Bonded Warehouse

Related Agencies

Foreign Customs

Internet Portal
3. Benefits

Opening of e-clearance era

- World’s 1st 100% e-clearance (US 95%, AU 99%)
- Over 1.2 million case of e-documents processed yearly

Time saving

- Computerized clearance
- INTERNET/EDI clearance N/W

Cost saving

- Direct benefit: US$ 740 M/year
- Related industries: US$ 2,472 M/year
- Spillover effect: US$ 832 M/year
- Productivity competitiveness

Simplification
Smooth logistics

- Export: 1+ days to 2– min.
- Import: 2+ days to 2– hrs.
- Drawback: 2+ days to 5.2– hrs.
- Tax payment: 4+ days to 10– min.

Source: Evaluation report on UNI-PASS of KCS (2006.10 NCA)

4,115 workforce saved between '93 and '04
3. Benefits

**Higher transparency**
- Paperless work process
- Results open to public

**Anti-corruption**
- No physical meeting

**Transparency, Efficiency**

**Tighter control on smuggling, illegal foreign currency trade, evasion**

<table>
<thead>
<tr>
<th>1998</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illegal foreign currency trade</td>
<td>US$ 103M</td>
</tr>
<tr>
<td>Illegal trade</td>
<td>US$ 286M</td>
</tr>
<tr>
<td>Evaded duty collected</td>
<td>US$ 66M</td>
</tr>
</tbody>
</table>

- Better analysis
- Higher targeting accuracy
- Revenue increase
4. System Details: Functions and Vision

Seamless clearance process using RFID · ubiquitous computing

- Manifest submission
- Declaration before arrival report
- Unloading report
- Bonded transportation
- Entry to bonded area
- Import declaration
- Unloading Company
- Shipping Company
- Forwarder
- Trader
- Customs Broker
- Overseas supplier
- Foreign customs
- UNIPASS
- Warehouse
- Transporter
- Cargo owner
- DATA transmission
1. Overview

e-Procurement System enables the on-line processing of procurement from bidding, contract, purchasing to final payment.
Major benefits of our e-procurement solution includes transparency, process efficiency, and cost saving.

**Problems in traditional procurement**

- Required intensive paperwork and manual processes
- Needed frequent visits to and repeated registration with each purchasing office by suppliers
- Troubled with irregularities and low level of public trust

**Enhancements**

- Efficiency thru on-line process of entire procedures
- Cost saving thru the removal of suppliers’ visits and info integration
- Transparency thru non face-to-face transaction and real time disclosure of information
The Korean government built a government e-Procurement system in order to handle all public procurement online for all public organizations.

**Government e-Procurement System**

- A system that digitally processes complicated procedures and paperwork
  - Digitalizing all procedures from purchase requests to payments
  - Removing or drastically reducing documents
- 27,000 public organizations and 80,000 companies use the system.
2. Case Study: Korea e-procurement system

Korea started e-procurement based on EDI, further expanded to various services. Pursued government-wide expansion from 2001.

Step 1
PPS e-procurement (EDI, 1997~2001)
- PPS accounts for 30% of the entire public procurement
- Applied E-procurement to procurement of goods and to the online shopping mall in 1997, expanded to construction and services in 2000
- In 2001, digitalization extended to all work including bidding, contract, and payment

Step 2
Government-wide expansion (GePS, 2001~2002)
- Prompted as one of the 11 e-gov’t projects
- Government-wide task force
- Enhanced Utilization
- The GePS launched in October 2002 after the BPR/ISP for GePS started in July 2001
2. Case Study: Korea e-procurement system

Korean e-procurement system processes all procurement procedures on-line from purchase request, bid notice, bidding, and contract through to payment.
3. Benefits (1) efficiency & transparency

Enhanced Efficiency and Transparency

- Saves US$ 4,474 M worth of transaction costs annually in terms of time and transportation (US 400M for public organizations)

<table>
<thead>
<tr>
<th>STEP</th>
<th>Registration</th>
<th>Bid Notice</th>
<th>Bid Participation &amp; Execution</th>
<th>Contract</th>
<th>Payment Request</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Reduction</td>
<td>13M</td>
<td>128M</td>
<td>4,190M</td>
<td>90M</td>
<td>37M</td>
<td>16M</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>4,474M</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Per-capita productivity of PPS rose by 102% (from 208 to 421 cases annually)

- Improves transparency in doing business with the government
  - Reduced face-to-face contacts between suppliers and officials
  - All the information publicized in real time on-line
3. Benefits (2) Utilization

**Utilization & Transaction Volume**

- Used by 35,000 Purchasing agencies and 150,000 Suppliers
  - Jointly used by buyers from both central and local governments through to state-owned enterprises
- Exchange 100,000 documents daily online which, in the past, were delivered via mail or in person
- Records a daily average of 100,000 website hits
- In 2006, transacted US$ 44 B
  - 21 millions businesses participated in 207,633 biddings amounting to US$ 28 B
  - Other transactions of US$ 16 B including the shopping mall were made electronically
- 90% of all biddings were conducted online
- 611,772 orders for items were delivered by one-click purchasing in the e-shopping mall
Global Evaluation of KONEPS: The Best e-procurement practice Model

- UN: Bestowed PPS with Public Service Award (June, 2003)
- OECD: A strong pull-through effect on ICT use in the private sector and no further actions are required (May, 2004)
- UN: Best Practice Model for e-procurement (Nov, 2004)
- UN: Reflected the KONEPS bidding process in the global standard (Mar. 2005)
- WITSA: Bestowed PPS with Global IT Excellence Award (May, 2006)

※ WITSA: World Information Technology and Systems Alliance
e-Procurement system can be divided into four parts including e-Bidding, e-Contract, e-Purchasing and e-Payment.
4. System Details : process

Standardized e-procurement process are as follows

- Public Certificate Authority
- Independent Procurement System
- Financial Institutions
- Association Regarding Facilities
- Public Certificate Authority
- National Finance Information
- Taxation Office

Registration -> Publicize -> Bidding Event -> Bid Evaluation -> e-Contract

Certificate of Business -> Integrated Notice

Bid Bond -> Confirmation of Correction

Contracting/Cash Security/ -> Money Transfer

Taxation Office -> Client Institutions

Guarantee Insurance Corporation

Information Provision Agency

Guarantee Insurance Corporation

National Finance Information

Financial Institutions
Based on a decade of know-how in developing and operating Korea’s e-Procurement, SDS developed the best e-Bidding solution for gov’t procurement.
Main functions of e-Bidding Solution are as follows:

- ID & Password login
- Buyer/Vendor Selection
- Safe login process enabled by security modules

- Provision of Public and private keys
- Event simulation supported
- Online/Offline bidding supported
- Document attachments enabled

- Various search methods
- Quick search using Event ID
- Detailed view of each events
- Real-time event status

- Real-time results of bidding events

- Encryption of private key
- Validation of the bidding
- Automatic evaluation and ranking

- Double encryption for all bidding forms
- Encrypted version saved on user’s PC
- Electronic signature enabled
Our bidding solution also uses the latest technologies such as digital signatures with online certificates, PKI encryption, internationally standardized XML based bidding forms.
5. Roadmap

To minimized huge initial cost and high risks, we propose an implementation strategy divided into three phases:
III. Korea Post e-Logistics System

1. Overview
2. Case Study
3. Benefits
4. System Details
5. Roadmap
6. Major System Introduction
1. Overview

Why We need a Postal Logistics System?

Environmental Change

- Domestic & Overseas market becomes more competitive
- Postal Biz process is changed to Hub & Spoke structure
- IT Change
- Postal IT is dramatically improved
- External Change

Diverse Demand & Needs

- Needs to change Manual Work to System based Process
- Requirement to support new Postal Biz Models
- Ability to improve Customer service and satisfaction
- Ability to Provide real-time job information
- Supply chain visibility thru the postal network
- Productivities improvement and Data accuracy
- Service Capability to safely link, extend, maintain

Process Optimization

Real-time Information

Supply Chain Visibility
2. Case Study (Korea Post)–PostNet

Overview: PostNet is a Logistics System that Integrates the entire postal processes from acceptance to delivery through establishing visibility of logistic flow


- BPR/ISP Consulting (’00.12 ~’01.05)
- Two-Phased Development
  1st Phase: Basic Logistics Systems for business operation (’01.12~’03.09) (Integrated Reception, Delivery, Stamps Sales, Transportation, Int’l Post office, Mail Volume, Center Operation, Track & Trace, Claimed Mail, EAI Platform, etc)
  2nd Phase: Strategic Service Systems for better performance (’03.10~’04.07) (External Reception, Courier Service, CRM/Call Center, Sales Mgmt, TMS Scheduling, Container Mgmt, Central Monitoring, Building Mgmt, Automated Facility Mgmt, etc)

Goals

- Maximize customer values and employee satisfaction
- Enhance efficiencies and productivities for entire logistics flow
- Secure Superiority in Logistics Business
Service Category: PostNet is mainly divided into several services such as Reception, TMS, Center operation, Delivery, Postal monitoring, Track & Trace, Customer Relation.
Network: Korea Post adapted **Hub and Spoke Structure** as a main Logistic Network suitable for the most efficient Flow of Postal Business.
Cost: Spending Cost for PostNet was estimated USD$ 33.3 million in case period of 2001 through 2005 were considered.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Integration</td>
<td>□ System development/implementation</td>
<td>10 million</td>
</tr>
<tr>
<td></td>
<td>□ Test/Pilot/Training</td>
<td></td>
</tr>
<tr>
<td>Equipment Installation</td>
<td>□ Procurement, lease, and equipment maintenance for hardware, software, etc</td>
<td>23.3 million</td>
</tr>
<tr>
<td>System management</td>
<td>□ System Installment/ Operation</td>
<td>6.4 million</td>
</tr>
<tr>
<td></td>
<td>□ System maintenance</td>
<td></td>
</tr>
<tr>
<td>Total (System management Cost excluded)</td>
<td></td>
<td>33.3 million</td>
</tr>
</tbody>
</table>

2. Case Study (Korea Post)–PostNet

**Effective value :**

- **Total value : USD 62.7 million (Year from 2004 to 2007)**
  - Value of Work efficiency (USD 24.5 million)
    - Work planning, Manpower save & relocation, Transportation accuracy
  - Value of Paperless work (USD 5.2 million)
  - Value of Operation hour save (USD 33 million)
    - On-time shipping&arrival of truck, Cut manual work at Acceptance/Delivery, etc

### <BCR: Benefit/Cost Ratio>
- **Cost**
- **Benefit**
- **Year (2001-2007)**
- **Benefit/Cost Ratio**: 188.27%
- **Break-even Point**: US $ 62.7 Million

### <Break-even point>
- **US $ 62.7 Million**
- **Analysis Period**: 2001 ~ 2007
- **Criterion Year**: 2005 (Constant Value)
- **Total Value**
- **Total Investment**

* System maintenance cost excluded
* Amount above is calculated based on Korea Post statistics
3. Benefits – Qualitative and Quantitative

**Benefits**

**Qualitative Benefits**
- Achieve the entire visibility of the postal logistic network
- Simplify work processes and improve accuracy
- Improve customer-oriented service quality
- Secure competitive superiority in logistics business

**Quantitative Benefits**
- Cost savings: about 16 millions (USD) annually from reception to delivery process
- Resource availabilities (Resource of Mail Center and Mail Exchange Hub, Post Office): Increase about 20%
- Track & Trace service usage: 18 million (‘04) -> 107 million (‘05)
- On-Time arrival of mail truck: Increase about 40%
Korea Post received well-known special awards for implementing PostNet several times and participates PostExpo, Korea Postal Forum for Postal IT promotion.
PostNet is an integrated e-Logistics platform composed of 22 sub systems (service functions) which interface each other within the entire postal chains.
4. System Details – Key Technology

PostNet adapted the latest technology and considered various IT perspectives for the system Scalability, Safety and Security, Efficiency.

<table>
<thead>
<tr>
<th>Key Technology</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3- Tier Web Architecture</td>
<td>Scalable and fail-safe system architecture, enabling stable operation in any conditions</td>
</tr>
<tr>
<td>High Availability</td>
<td>Duplicated system supporting high availability (24 hour, 356 days for non-stop service)</td>
</tr>
<tr>
<td>Security</td>
<td>Authorization and security of data with SSO/LDAP Mechanism for Access control and protection</td>
</tr>
<tr>
<td>WUI (Web User Interface)</td>
<td>User friendly access and interface with MS IE browsers</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>Business efficiency Improved by using Mobile PDA and Automated machines</td>
</tr>
<tr>
<td>EAI (Platform)</td>
<td>Flexibilities improved by Using Enterprise Application Integration tool</td>
</tr>
</tbody>
</table>
PostNet is being used in the horizontal workflow at the several vertical Locations.
Since completion of the informatization stage, POST-NET evolutionally extends to Intelligent Logistics Service through construction of Ubiquitous environment.
6. Major systems introduction

Seven Major Systems of POST-NET will be introduced in a row: Reception, Home-Delivery, Center Operation, Transportation, Delivery, Track & Trace, CRM/Call center.

1. **Reception**
   - Various forms of reception service reduced teller's workloads and increased work convenience.
   - **Mail Reception through Cyber Mail Counter**
   - System interface with large mailers like supreme court etc (XML/EDI)

2. **Home-Delivery**
   - Interface with on-line shopping mall and On/Off Line integrated home-delivery system guaranteed high quality of service.
   - **LG 혼소핑**
   - Management of Return goods and gathering goods.
   - **Shipping system peculiar to home delivery**
   - **Call-Center Office Counter**
6. Major systems introduction

3. Center Operation
Efficient process management and result analysis by real time resources management

- Adjust human resource and equipment operation schedule promptly when material congestion or issue occur
- Through fast operation results analysis, an effective management of work improvement and equipment resources

4. Shipping & Arrival
Manage status of shipping and support results management by synchronization between Information and mail items with e-Document

- Synchronization between information and mail items with Electronic form (e-slip)
- Analyze promptly status of shipping by Shipping/Arrival synchronization

5. Delivery
Automatic formed delivery slip and paper-based documents removal reduce postman’s workload and give delivery notice and results.

- e-Delivery slip on PDA reduces postman’s workload and improves quality
- Higher customer service quality by giving delivery notice/results (SMS)
6. Major systems introduction

Track & Trace

Provide real-time track & trace service to increase customer’s satisfaction.
Offer Command & Control Information by monitoring the logistics resources.

Providing real-time Interior/Overseas reported mail trace information.

Customer Mgmt.

Offer One-stop care service with call center and support effective marketing process based on integrated customer information.

Offer one-stop care service by call center.

Manage integrated customer information supports effective marketing process.

ePOST (On-line) also shows the Tracking info of each mail.
IV. Port Logistics

1. Overview
2. Case Study
3. Benefits
4. System Details
5. Road Map
1. Overview:

Yes! U-Port

Government and private enterprises collaborative project to upgrade Shipping & Port-Logistics industry of KOREA.

Integrated management brand for shipping & port-logistics, Yes! U-Port is the very-first collaborative business project planned by the government and private enterprises to upgrade maritime industry in Korea.
2. Case Study

1. History

- 2007.2. The requirement arises for the efficient Port Operation
- 2007.3. Discuss for Port Operation system & EDI Network Upgrade plan
- 2007.4. Confirmation the introduction the efficient Port Operation System

2. Domestic & Overseas reference

- Port Management Information system (Port-MIS) Launches (1996) (Ministry of Maritime Affairs & Fisheries)
- Shipping & Port Internet Data Center (2005)
- Single Window for Export/Imprt logistics Service (2005)
3. Benefits

**Port-MIS**  
*Port-Management Information System*

- Simplification of export/import process: decrease of public documents
- Settlement of vessel & cargo congestion: decrease of vessel standby time and container handling timesaving
- Total logistics cost saving by abolishing paper documents
  - Cost saving by decrease and close of port authority office dealing with civil applications
  - Manpower saving
  - Effect of integrated port & shipping DB system
  - Cost saving by pooling PORT-MIS information between governmental agencies (port authority, customs immigration office, quarantine station, maritime police etc.)
3. Benefits

**ATOMS** Advanced Terminal Operation & Management System
- Decrease of Container Lead time
- Decrease of Truck Turnaround Time
- Saving Operation costs
- Terminal Productivity/Efficiency Lift
- Basic Statistics data for the terminal operation
- One-stop service for User requirement

**SP-IDC** Shipping & Port –Internet Data Center
- Decrease of Logistics Cost
- Decrease of Access Time on information
- Saving System Operation time
- Retrieve Basic statistic data for Shipping & Port Logistics field
- One-stop service for User requirement
- System setup for the computerization on Shipping & Logistics
3. Benefits

**GCTS** - *Global Container Tracking System*
- Decrease of work confirmation time and error handling time
- Decrease of tracing time for a container in depot, warehouse and Terminal
- Increase the domestic demand of RFID Technology
- Real-Time based Container location confirmation enables to preparing the ground for Full automation
- Demand generation for private sector on the base of the National RFID Logistics Infra

**Single Window** - *Import & Export civil application collaborative system*
- Cost saving of Total logistics cost and EDI cost
- IT investment cost saving for a company
- Decrease of working time
- Productivity increase with the sharing information and knowledge between government and private companies
- Efficient Infra usage
4. System Details

Port-MIS  Port-Management Information System

- Information system that handles data on ships and cargoes moving in and out of ports.
- MOMAF has built the system back-frame network to realize paperless administration and provide integrated port service to users.
- Port-MIS provides users with real-time information about vessel arrival/departure, cargo, port facilities and decision-making etc.

Port Users
- Shipping company/agent
- Freight forwarder
- Transporter
- Shipper

Governments
- Customs
- Quarantine
- Immigration

Declaration (EDI)

Integrated Port Management Information System in Greek ports

Data Transfer

User service
- Port Logistics’ Integrated System
- EDI service (WEB, application)
4. System Details

Integrated Port Logistics Information XML/EDI based Service

- Port facility status
- Vessel & Cargo trace

Overseas Ports & Carriers

SP–IDC Shipping & Port–Internet Data Center

- Value added service

SP–IDC

Integrated DB

Port facility status
Vessel & Cargo trace

- Maritime Affairs Dept.
- Customs
- Justice Dept.
- Quarantine
- Tug/Pilot Association

Terminal
Shipper
Tally company
Transport company
Shipper/Forwarder

Sharing vessel & Cargo information

Vessel /Cargo Info
Stevedoring Info
Tally info
Cargo trace
Loading/Discharging

48
4. System Details

- One-Stop Service at a window for the documents on C.I.Q.
- Saving Port Logistics Lead time & Sharing Information

Single Window: *Import & Export civil application collaborative system*

Civil sector: Shipper, Forwarder, Inland Depot, Transport company, Carrier, Terminal/Airport

Government: Industry Resource, Maritime affairs, Fisheries, Construction, Transportation, Immigration, Customs, Rail

- Security check
- User info
- User Verification
- EDI system
- Web service portal
- GXML Hub

INTERNET VAN

Request

Reply
4. System Details

ATOMS Advanced Terminal Operation & Management System

- EDI solution, IP Service
- Synchronized Job Ordering
- Unmanned Gate control
- Intuitive Monitoring/Control
- Integrated Inventory Management - Yard, On-Dock, CFS

- Optimized Automatic Planning
- Increased Productivity of Ship Operation
- Maximized Yard Space and Operation
- Efficient Resource Assignment
- Integrated Planning System - Berth, Ship, Yard Planning

- Supply Individual Billing Format
- Support Various Strategic Business Information
- Productivity Analysis Data
- Scheduled Equipment Inspection

Operation system

Optimized Expert System

Management System

Planning System

Real-Time Operation
4. System Details

GCTS  Global Container Tracking System

- RFID (Radio Frequency Identification) based real-time container / Truck tracing system

GCTS

- Container/Truck In&Out Info.
- Container Stack Info.
- Stevedoring Info.

51
5. Road Map

Actualized Global Shipping & Port-Logistics Hub of 21C

INFORMATION MANAGEMENT
- Port-MIS
- SP-IDC
- Single Window

CARGO MANAGEMENT
- ATOMS
- GCTS

One stop civil affairs service in port
- Paper free e-port business service
- Real-time Logistics/Asset management service

Increased Productivity
- Improved Safety
- Guaranteed Trust

Realization of Ultra modern, highly value-adding Shipping & Port-Logistics Hub of 21c
V. Local e-Gov’t Informatization & NID

1. Overview
2. Case Study
3. Benefits
4. System Details
5. Roadmap
6. Appendix
1. Overview

- Vertical and Horizontal Interoperability
1. Overview

Local Gov Info. Network System

National Identification

Residence information
- Changed Residence info mgmt
- Changed data
- Summarized Residence info
- Residence info provision
- Summarized Residence info mgmt
- Changed residence info provision
- Details of info provision
2. Case Study : Networking System

Local Government Information Networking System

- G4C
- Central government
- Information Sharing

Local Government Information Network System

- Administration Information System
- Intranet-Portal

Service Portal
- Visit
- Phone & FAX
- e-mail
- Internet

Information Sharing
- Civil Service Statistics
- Information & Support
- Civil Services Reception, Process

Administration Information System
- Environment
- Regional Industry
- Water, Sewage
- Roads Transport
- Health Care
- Rural Village
- Livestock
- Civil Defense
- Services
- Regional Develop.
- Fishery
- Internal Admin
- Geography
- Culture
- Forestry
- Internet Service
- Residence
- Vehicle
- Census
- Building
- Taxation
- Disaster

Intranet-Portal
- Supporting Sys
- Single Sign On (SSO)
- Messaging Service
- Customized Services
- Collaboration Information System
- Certificate
- User Profile

XML WebServices

EA (Enterprise Architecture), CBD based

Other Local Gov.
Affiliated organization
Other related Organization
2. Case Study: Residence Info. management

- Managing & Sharing residence information within the Government

- Transcript (abstract) of Residence
  - Certificate KIOSK
  - Health care/Welfare System
  - Agriculture
  - Environment
  - Public Service
  - Taxation/Finance

- Vehicle Management System
  - National Identification Main System
  - Local Government
  - Vehicle
2. Case Study: Vehicle management

- Comprehensive, nation-wide vehicle information system

Local Government

- Vehicle info
- Construction machinery info
- Two-wheel vehicle info
- Fine info
- Seizure & entrusting info
- Registration ledger info

Vehicle

- Online registration info
- Address change info
- Seizure & entrusting info

Construction Machinery

Two-wheel Vehicle

Residence

- Online residence information
- Move-in info

Environment

- Vehicle info
- Vehicle registry info
- Seizure/entrusting info

Taxation/Finance

- Vehicle info
- Construction machinery info
- Two-wheel vehicle info
- Fine info
- Seizure/entrusting info
- Online registration info
- Address change info
- Seizure & entrusting info

Health care/Welfare

- Vehicle registry info

Public Service

- Vehicle/construction machinery registration info
2. Case Study: NID

- National Identification (NID)
- Privacy, Security, Service Customization → More Control & Management

Diagram:
- Immigration
- Vehicle Registration
- Taxation
- Business Registration
- Crime Control
- Driver's License
- Passport
- Address Change
- Hospital Records
- Land Registration
- Social Security
- Building Registration
- e-Commerce
3. Benefits (qualitative)

1. Administrative information sharing → more services in real-time

2. Service Availability → Revitalizing the local economy

3. Reducing the digital divide → Increase in competitiveness

4. Boost productivity of government officials and their capability to utilize information

5. Lay the groundwork for the administration information infrastructure

6. Revise relevant laws and institutions
3. Benefits (quantitative)

Comparison of work handling hours

- Prior to Informatization
- 1 year after Improvement
- Saving

<table>
<thead>
<tr>
<th>Category</th>
<th>Prior to Informatization</th>
<th>1 year after Improvement</th>
<th>Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>100%</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>Taxation/Finance</td>
<td>68%</td>
<td>32%</td>
<td>33%</td>
</tr>
<tr>
<td>Public Service</td>
<td>67%</td>
<td>34%</td>
<td>33%</td>
</tr>
<tr>
<td>Local Industry</td>
<td>66%</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Health care/Welfare</td>
<td>56%</td>
<td>54%</td>
<td>48%</td>
</tr>
<tr>
<td>Rural Village</td>
<td>54%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Vehicle</td>
<td>52%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Environment</td>
<td>52%</td>
<td>52%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Data Source: Ministry of General Administration and Home Affairs
3. Benefits (international recognition)

- "The Best e-Government" among the 100 cities in the world (2003-2006)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cities</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seoul</td>
<td>Korea</td>
</tr>
<tr>
<td>2</td>
<td>New York</td>
<td>United States</td>
</tr>
<tr>
<td>3</td>
<td>Shanghai</td>
<td>China</td>
</tr>
<tr>
<td>4</td>
<td>Hong Kong</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>5</td>
<td>Sydney</td>
<td>Australia</td>
</tr>
</tbody>
</table>

Source: UN/ASPA, Sungkyunkwan University (Korea), and the New Jersey University (US)
4. System Details

- National Identification

- Secure Network Construction
  - Network Design and Construction

- National ID Management System
  - Main System of National Identification
  - Information Sharing System
  - Security matters
  - Verification Process

- Database Implementation
  - Datafication
  - Data Standardization
  - Database Back-up
  - Optimization

- NID Card Publishing System
  - Define card publishing process
  - Establish Controlling center
  - Establish Province Center

- Technical Support
  - Define card publishing process
  - Establish Controlling center
  - Establish Province Center
4. System Details

- Local e-Government Information System
  - Taxation
  - Inner Administration
    - Civil Petitions
    - City Map
    - Vehicles
    - Construction
    - Environment
    - Healthcare, Welfare
    - Industries
    - Agricultural
  - Civil Services
    - Traffic
    - Census
    - Culture
    - Water, Sewage
    - Defense
    - Regional Development
    - Emergency
    - Forest
    - Livestock
    - Marine
    - National ID
  - Local e-Gov. System
  - National Network
    - KIOSK
    - Business
    - Civil Affairs
  - Central Department
  - Local Department
    - Local Offices
    - Internet
    - Civil Affairs
    - Civil Service Centers
    - Sub-Way, Department Store

64
4. System Details

- Local Government Information Networking System

- Cabinet
  - Policy Making
  - Policy Arbitration
  - Administrative Statistics
  - Policy Evaluation

- Central Network
  - Procurement / Purchase
  - National Affairs
  - Diplomatic Negotiations
  - National defense / Security

- Local Network
  - Citizen
  - Welfare
  - Local Industries
  - Civil Affairs
  - Rural Community
  - Tax Affairs
  - Environment
  - Developments

- Government
- Agencies
- Enterprise
- Citizen
- Local Gov.
- Local Agencies
5. Roadmap

- Step-by-Step Approach: Building Structure

1. Technological Assessment & Prioritization

Integrated Local Government Information Networking System

- Integration - Middleware
- Back-Office Applications
- Front-Office Applications
- Network
6. Appendix: Front & Back Office

- Web Portal - One Click Civil Petition Service

796 kinds of online civil services of 15 public organizations are available at www.seoul.go.kr!

-e-GIRO for Local Tax

- Civil Petition & Complaint Report
- Document Application & Retrieval
- Tax Filing
- Audit request & Information Disclosure
- Service Guide & Information Archive
6. Appendix: Passport Issuance

- Horizontal Interoperability → ex. Ministry of Foreign Affair
  - Process time reduced/automated *(10 to 1 day)*
  - One-Stop process, Internet application forms, fast communication and process!

![Passport Management System Diagram]

- Verification & Registration process
- Local Government
- Ministry of Foreign Affair
- Ministry of Home Affair
- National Police Agency
- Military Manpower Administration
- Passport issuing system & network
- Internet
- DB
- Web
- Passport issuing system & network
- Application
- Passport
- Information
- Application Forms
6. Appendix: Vertical Integration

- 3 cases: paper-based workflow, stand-alone system, no standard
- Vertical Integration & Sharing information = More Service Availability
- Example: Statistics & Policy Making (ministry of transportation)
6. Appendix: Composite Civil Service

Composite Civil Services Improvement

Citizen

Department

Visit

Send out official letters for work interlinkage

Official Letters

Department 1
Processing time 1D

Takes hours to days to receive the letter

Official Letters

Department 2
Processing time 1D

Official Letters

Department 3
Processing time 1D

Total Duration 6~10D

Citizen

Internet

Cyber Reception

Information Sharing via Internet

Department 1
Processing time 1D

Department 2
Processing time 1D

Department 3
Processing time 1D

Total Duration 3~6D
VI. Intellectual Property

1. Overview

2. Case Study: KIPOnet

3. Benefits

4. System Details

5. Implementation Roadmap
1. Overview

Why Intellectual Property (IP)?

- IP promotes knowledge and technology as sources of wealth and competition
- IP creates enormous property value and high added value
- IP has been considered as a key driving force for economic development

Why IP Automation System?

- To promote and protect IP rights (IPR)
- To promote the efficiency of IP administration
- To promote the dissemination and utilization of IP information
- To harmonize with global standards of IP
2. Case Study: KIPOnet

What is KIPOnet?

- Paperless and fully computerized IPR system
- Provide applicants with a breadth of electronic services such as on-line filing and patent information searches
- Developed based on global process and technical standard of IP defined by WIPO*

Background and Necessity

- Increasing the number of applications more than 200,000 cases a year
- Limitations in handling paper documents
- Cost increase of disseminating IP information
- Inconvenience due to geographical relocation at Daejeon

* WIPO: World Intellectual Property Organization
2. Case Study: KIPOnet

KIPOnet enables complete electronic management of IPR affairs.
2. Case Study: KIPOnet

Development History of KIPOnet

**Launching KIPOnet**
- IT maser plan
- Development of administration system
- Internet based e-filing system
- Digitalization of paper document
- CD-ROM gazette publication

**Phase 1**
- Functional advancement of administration system
- Strength online customer service
- Internet gazette publication
- Knowledge management system

**Phase 2**
- Flexibility, stability and secure system to precede global standard
- PCT e-filing system
- Work-at-home system
- 24x365 system
- Enhancing patent information service
- Disaster recovery system

**Phase 3**
- Anytime, anywhere, ubiquitous KIPO
- Statistical analysis results of patent information
- Translation system (K-PION)
- Sharing examination results with other IPOs* (TDA)

* IPO: Intellectual Property Office
## 3. Benefits

### Qualitative Benefits

#### Public Sector

**Perspective of KIPO**
- Improve productivity through fast and accurate examination
- Increase the examination and administration efficiencies
- Reduce operation cost and document storage space
- Increase effectiveness in resources and data management

**Perspective of Government**
- Facilitate cooperation among government agencies through electronic data exchange
- Provide an automation role model for the other government agencies
- Contribute to increase international credibility & to comply with global economic reform program
- Induce significant foreign investments

#### Private Sector

- Provide convenient documentation using e-filing
- Provide On-line IPR information search service
- Contribute easy access to information on latest technology
- Prevent redundant investments on the same technology development
- Save applicants’ time, money and opportunity cost
- Enhance IPR protection through fast IPR administration process
- Make the economic benefits through protection and facilitation of IPR
- Generate interests and investments in new and growing businesses
3. Benefits

Quantitative Benefits

- Growth of application filing
- Examination period reduction for patent

[Internal Biz. Process Opportunity Cost Savings]
(Unit: US$ million)

[Customer Opportunity Cost Savings]
(Unit: US$ million)

Promotion of technology development
- Shortening R&D period: 26.18%
- Reduction of R&D Cost: 27.59%
3. Benefits

International Cooperation

- Technical consultation on 8 IPOs by APEC or WIPO’s financial support (2002~2004)
  - Brazil, Papua New Guinea, Philippines, Taiwan, Thailand, Peru, Vietnam and India
- Development of PCT-ROAD system by WIPO’s financial support (2005~2006)
  - Paperless and fully computerized system for international patent
  - Deployed in 14 IPOs including Philippines, Malaysia, Vietnam, etc.
3. Benefits

Certification

- Oct. 2006: CMMI maturity level 4 authorized by SEI CMMI (Capability Maturity Model Integration)
- Jan. 2007: ISO 20000 for IT service management authorized by British Standards Institution (BSI)
- Jan. 2007: ISO 27001 for information security authorized by British Standards Institution (BSI)

Awards

- May, 2006: The best award at the Efficient Public Service by president
- Dec. 2006: The best prize at the Governmental Performance Management by president
4. System Details

System Overview

- **Preparation of application**
  - KEAPS E-filing S/W

- **Public service portal**
  - Homepage

- **Support management**

- **Administration management**
  - Receiving System
  - Examination System
  - Notification System
  - Formality Examination System
  - Registration System
  - Trial System
  - Fee Mgmt. System
  - PCT System
  - Madrid System

- **Patent information service**
  - Statistic Info. System
  - Publication System
  - IP Search System
  - Examination Results Exchange

- **Knowledge portal**
  - Knowledge Portal

- Additional systems:
  - Administration DB
  - XML Repository
  - File System
  - Optical Disk
  - Search DB
  - Knowledge management DB
  - Quality Mgmt. System
  - Model Office
  - Call Center
4. System Details

**Functional Diagram**

- **IPR Reference Data Search**
- **IPR Data Search**
- **Training / Seminar**
- **Promotion / Advertising**
- **IPR Reference Data Search**

**Information Dissemination**

- **IPR Data Search**
- **Training / Seminar**
- **Promotion / Advertising**
- **IPR Reference Data Search**

**Search**

- **Patent Search**
- **Industrial Design Search**
- **Trademark Search**
- **Copyright Search**

**Administrative Affairs**

- **General Administration**
- **Government Interface for IPR Protection**
- **International Cooperation**
- **Personnel / Training**
- **Legislation**

**IP Administration**

- **Application Submission**
- **Application Receiving**
- **Application Fee Calculation**
- **Formality Examination**
- **Granting Filing Date**

- **Classification**
- **Substantial Examination**
- **Issue Register Certificate**
- **Trial Examination**
- **Publication for Registration**
- **Publication for Open Application**

**Administrative Affairs**

- **General Administration**
- **Government Interface for IPR Protection**
- **International Cooperation**
- **Personnel / Training**
- **Legislation**
### 5. Implementation Roadmap

#### IP Automation Maturity Curve

<table>
<thead>
<tr>
<th>Elementary IP Automation</th>
<th>IP Administration Automation</th>
<th>Paperless On-line IP Administration</th>
<th>Knowledge-Based IP Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-based application</td>
<td>Automated IP administration</td>
<td>On-line-application</td>
<td>High value-added services</td>
</tr>
<tr>
<td>Provide basic admin. process supporting functionalities, focusing on receiving and registration</td>
<td>Image-based electronic document handling</td>
<td>Electronic gazette publication</td>
<td>using accumulated data</td>
</tr>
<tr>
<td>Simple search function</td>
<td>Simple search system for examination</td>
<td>On-line dissemination of IPR information to applicant, attorney and public (IPDL)</td>
<td>Provide various training courses by e-learning system</td>
</tr>
<tr>
<td>Provide basic information to the public</td>
<td>Disseminate IPR information by off-line media</td>
<td>Provide integrated search functions</td>
<td>Provide knowledge-based IP administration environment to DGIPR staffs and the public</td>
</tr>
<tr>
<td></td>
<td>Streamlined and standardized processes</td>
<td>Provide various information services to the public</td>
<td>Connect with IPOs of other nations for information exchange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interface with other government agencies</td>
<td>Standardized processes reflecting PLT, TLT, Madrid Protocol, etc.</td>
</tr>
</tbody>
</table>