This chapter helps public managers understand how Korea has built the cutting-edge informatization systems for each industry and in the process of governing. e-Government systems are applied to all areas of business activities (Government for Business, G4B) and public administration (Government to Government, G2G), including procurement, customs clearance, taxation and public budget and accounting system. These systems contribute to reducing administrative burden on businesses, improving business competitiveness, and saving tax payer’s money.
Chapter 09

Objectives

- To understand the concept of government for business (G4B) as well as government to government (G2G) services
- To understand the model of online e-procurement system (KONEPS)
- To understand the model of electronic customs clearance system (UNI-PASS)
- To understand the model of electronic national tax system (HomeTax)
- To understand the model of digital budget and accounting system (d-Brain)
1. Korea ON-line E-Procurement System (KONEPS)
2. Electronic Customs Clearance System (UNI-PASS)
3. National Electronic Tax System (HomeTax)
4. Digital Budget and Accounting System (d-Brain)
Chapter 09  1. Korea ON-line E-Procurement System (KONEPS)

- Fair and transparent electronic procurement
- All processes from registration to payment are processed online

Korea ON-line Procurement System is a national comprehensive e-Procurement system that allows people to do business with the country by processing all the procurement processes online, including registration, bidding, contracting, receiving and payment.

**Feature**

- **Single Window**
  - All public tender notices are required to be posted on KONEPS, registered vendors are entitled to participate in all public tenders.

- **One-Stop service**
  - KONEPS is connected to database systems of external public entities such as administrative organizations, certification agencies and associations to provide one-stop procurement service.

- **Standardization of procurement**
  - Standardized procurement service is provided by processing all procurement work online through KONEPS from registration, bidding, contracting, evaluation to payment.
Chapter 09 1. Korea ON-line E-Procurement System (KONEPS)

Before

Before KONEPS

Previously, vendors had to visit multiple offices to process complex paperwork in order to participate in a public tender. If vendors did not pay a close attention to tender notices from different organizations, they would often miss the deadline.

After

After KONEPS as a Single Window

All procurement work from registration to payment is processed online through KONEPS as a single window, thereby improving efficiency, productivity, transparency, and integrity.

Under the circumstance, Korean e-procurement market has grown into one of the largest markets in the world.

As of 2019, annual transaction through KONEPS marked 102.8 billion USD.
Chapter 09 1. Korea ON-line E-Procurement System (KONEPS)

Service Concept

Government Procurement Service (G4B)

- Request and Decision on Contract Type
  - Request for contract
  - Request for supply
  - Request for procurement
  - Decision on the type of contract

- Award of Contract
  - Bidding
  - Private contract
  - Reverse auction
  - Request for quotation

- Contract Management
  - Execution of contract
  - Review of contract
  - Signing of contract

- Post Management
  - Delivery management
  - Inspection & storage
  - Returned items
  - Request for payment
  - Completion of contract

Buyers
- Request for supply
- Request for contract
- Public announcement for bidding

Suppliers
- Participation in bidding
- Contract closing

Payment confirmation
Nationwide commercial banks
Wire transfer
The Bank of KOREA
Request for wire transfer
Transaction via KONEPS: USD 102.8 B (76.1% of Korea’s total public procurement, 2019)

- However, 100% of tender notices are published through KONEPS.
## Operational Performance (2019)

### 1. KONEPS Transactions

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>780,685</td>
<td>877,022</td>
<td>897,742</td>
<td>1,028,339</td>
</tr>
<tr>
<td>E-bid</td>
<td>212,236</td>
<td>221,924</td>
<td>224,557</td>
<td>261,599</td>
</tr>
<tr>
<td>Central Procurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping Mall</td>
<td>144,262</td>
<td>165,741</td>
<td>168,458</td>
<td>196,604</td>
</tr>
<tr>
<td>Total</td>
<td>356,499</td>
<td>387,665</td>
<td>393,015</td>
<td>459,798</td>
</tr>
<tr>
<td>Autonomous procurement by user entity</td>
<td>424,186</td>
<td>489,357</td>
<td>504,727</td>
<td>568,550</td>
</tr>
</tbody>
</table>

Unit: KRW 100 million

### 2. KONEPS Users

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Public Organizations</td>
<td>52,223</td>
<td>52,395</td>
<td>55,040</td>
<td>57,734</td>
</tr>
<tr>
<td>No. of Suppliers</td>
<td>348,069</td>
<td>373,833</td>
<td>400,915</td>
<td>434,062</td>
</tr>
</tbody>
</table>

Source: KONEPS Official Website
Awards

- e-ASIA AWARD (2007)
- WITSA (World Information Technology and Service Alliance) Global IT Excellence Award (2006)
- OECD’s introduction of KONEPS as a system with strong pull-through effect on ICT use (2004)
- UN Public Service Award (2003)
Chapter 09
1. Korea On-line E-Procurement System (KONEPS)

Global KONEPS

- Tunisia (2012)
- Jordan (2015)
- Mongolia (2010)
- Costa Rica (2009)
- Vietnam (2008)
- Cameroon (2014)
- Rwanda (2015)
UNI-PASS is the electronic customs clearance system used by the Korea Customs Service. It is the world’s first electronic customs clearance system that automates export/import customs, tax collection and other customs administrative tasks.

**Feature**

- **Fast and secure**
  
  World's first 100% electronic customs clearance system, the fastest and most secure among the 180 WCO member countries
  
  Required time for exports: 1.5 minutes, imports: 1.5 hours/ Much faster than the global standard of four hours (as recommended by UNCTAD)

- **Connected and Integrated**
  
  By linking with export/import authorization organizations, the integrated trading system provides one-stop service and real-time trading/logistics information
  
  Linkage with 76 government agencies such as the Ministry of Trade, Industry and Energy, Ministry of Land, Infrastructure and Transport, and 260,000 companies including trading companies, shippers, airlines

- **International standard**
  
  Applies WCO and UN’s electronic document standard, making it an internationally standardized system that can be used globally
  
  World Bank’s Best Practices of [Doing business] in the export/import customs category, for six consecutive years (2009~2014)
Chapter 09

2. Electronic Customs Clearance System (UNI-PASS)

Before

- In the 1990s, the national trade volume grew rapidly, by 15% on average per year, but there was no convenient and expedient customs clearance system
- For people to go through customs, over 100 documents from dozens of organizations had to be filed and submitted
- The vicious circle of increasing inefficiency continued
- The public did not trust the administration, as they could not fully grasp the process

After

- After UNI-PASS was introduced in 2006, 100% electronic customs clearance was realized, over 180 million electronic documents are processed real-time every year
- Before UNI-PASS, the average processing time for customs clearance was 1~2 days
- After UNI-PASS, it was reduced to 1.5 minutes for export and 1.5 hours for import
- It is the fastest among 180 WCO member countries
- As the speed increased, logistics costs were reduced, trade volume increased, and tax revenue increased
- Tax revenue was $8 billion in 1990, and it grew to $52 billion in 2015
Chapter 09  2. Electronic Customs Clearance System (UNI-PASS)

Effects

Increase in customs tax revenue:
- 8B USD (1990)
- 52B USD (2015)

Time required for export/import customs clearance:
- Export Clearance: 1 day (1992) → 1.5 minutes (2015)
- Import Clearance: 2 day (1994) → 1.5 hours (2015)
Chapter 09  

2. Electronic Customs Clearance System (UNI-PASS)

Awards

- Best Practice of 「Doing Business」, selected by World Bank (2009~2014)
- UNI-PASS for Ecuador (ECUAPASS), winning World Customs Organization Innovation Award (2013)
- e-ASIA Award from AFACCT (2007)
- Best Practice of Parcels Tracking System, selected by WCO (World Customs Organization, 2004)
- Innovative Practice of e-Clearance Service, selected by IDB&ADB (2001)
- Selected as Best Practice by UN Anti-Corruption Forum (2001)
System Structure

The UNI-PASS system is a total customs administration solution that integrates the most basic customs modules to the most advanced and sophisticated modules.

The UNI-PASS system incorporates applications to monitor the infrastructure and provide ease in system operation.

The solution applies international standards such as the WCO DM 3.0, UN codes and international recommendation and practices such as the Revised Kyoto Convention, and the WCO SAFE Framework.
2. Electronic Customs Clearance System (UNI-PASS)

**System Structure**

Starting with simple online statistics system in 1974, and currently working on a smart clearance concept, the UNI-PASS has evolved throughout the years to adapt to changes in the global trade environment.

The evolution of UNI-PASS reflects the growth of Korea’s national development, having gone through being one of the poorest countries in the world after the Korean war in the 1950’s to becoming one of the leading traders in world merchandise (ranked 7th, WTO 2013).
2. Electronic Customs Clearance System (UNI-PASS)

**System Structure**

UNI-PASS can be developed partially, by selecting the desired modules and connecting with the existing legacy system of the customs authority, or totally, replacing the existing legacy system with the UNI-PASS system.

**Major Modules**

- Clearance Management
- Duty Collection
- Drawback
- Cargo Management
- Transit Management
- Surveillance
- Investigation
- Audit
- Legal Process Management
- APIS (Advanced Passenger Information System)
- HS (Harmonized System) Management
- IRM (Integrated Risk Management)
- CDW (Customs Data Warehouse)
- KMS (Knowledge Management System)
- PMS (Performance Management System)
- Law Compliance
- EWACS (Early Warning and Control System)
- Single Window
System Structure

EWACS

IRM
- Drawback
- Import clearance

CDW
- Duty collection
- Procedural business
- Export clearance

Non-Procedural business
- HS management
- Investigation

Surveillance
- Legal
- Audit
- Passenger [APIS]

KMS & PMS
- Law compliance

SINGLE WINDOW

INTERNATIONAL STANDARD

IT GOVERNANCE
2. Electronic Customs Clearance System (UNI-PASS)

Features: One-stop Paperless Service

1. The integrated portal and the single window system of UNI-PASS allows for a 100% paperless work environment in a one-stop manner.

2. All required regulatory approvals (applications of LPCO’s) and customs procedure (customs declaration) are serviced through a one-stop portal (single window) allowing declarers to process all regulatory procedures without having to physically visit the regulatory agencies.

3. Payments of duties and fees can be made in electronic form through the system by connecting with local financial institutions.

4. Supporting documents can be provided in electronic form so as to reduce physical visits to regulatory agencies and customs authorities.

5. The system provides for a non-stop trade process allowing declarers to process trade requirements 24 hours a day, anytime, anywhere, resulting in reduction of time and costs.
# Features: One-stop Paperless Service

## Benefits of Single Window

| Better service | • One-stop service at one entry point  
|               | • Simplified document form and data elements  
|               | • Improved user convenience  
| Higher work efficiency | • Joint use of standardized data in integrated document form  
|               | • Improvement in work process (Off line → On line)  
| Cost and time saving | • Reduced processing time  
|               | • Lower logistics cost  
|               | • Active response to WCO’s recommendation  
|               | • Expansion of e-clearance system foundation for national competitiveness in logistics |
2. Electronic Customs Clearance System (UNI-PASS)

Features: One-stop Paperless Service

- Single Window Infrastructure Model

User

Single Window infrastructure

User Convenience Functions

<table>
<thead>
<tr>
<th>e-Authentication</th>
<th>e-Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission Documents</td>
<td>Company Management</td>
</tr>
<tr>
<td>Administration Functions</td>
<td>Statistic Service</td>
</tr>
</tbody>
</table>

Bank

OGA

Customer
Chapter 09

2. Electronic Customs Clearance System (UNI-PASS)

Features: Real-time Cargo Tracking

1. The UNI-PASS system enables real-time cargo tracking through total cargo quantity management.

2. The presentation of the e-manifest with its bill of landing (B/L) allows for the consolidation of manifest information and creates a Unique Cargo Reference at House B/L level so it can be used as a key to tracking cargo status and location on a real-time basis.

3. The system allows for inventory management so users can check goods that are admitted or removed from the warehouses or customs bonded areas.
2. Electronic Customs Clearance System (UNI-PASS)

Features: Facilitation of Trade

1. Based on the two-track management control feature, the UNI-PASS divides traders into a safe track and a non-safe track.

2. The safe track category allows for faster clearance with little or no control providing various incentives in order to facilitate trade while the non-safe track will focus more on control features to ensure stricter inspections.

3. The goal of the UNI-PASS system is to ensure the correct information provision and duty declaration of the declarers so they can be transferred to the safe track.

4. The law compliance system evaluates a company’s compliance level and decides on the type of control that needs to be applied to each company, which would serve the foundation for becoming an authorized economic operator (AEO).
2. Electronic Customs Clearance System (UNI-PASS)

Features: Control and Facilitation of Passenger Clearance

1. The two track concept also applies in the passenger clearance through the APIS (Advanced Passenger Information System) of the UNI-PASS system.

2. By connecting the system with airliners, immigration, etc., the system is able to analyze the information for risk profiles to provide faster clearance to low risk passengers (safe track) and a tighter control over high risk passengers (non-safe track).
2. Electronic Customs Clearance System (UNI-PASS)

- Duty Payment
- Trade Activities
- Inspections
- Declaration Corrections
- ...

Evaluation of Law Compliance

Companies on Safe Track

Companies on Non-safe Track
Chapter 09  3. National Electronic Tax System (HomeTax)

Transparent and Convenient Tax Administration!
Online tax service that allows tax filing and payment anywhere, anytime

Taxpayers can file, pay, prepare tax returns, and process most tax related tasks at home or office online 24/7, without having to visit the bank or tax offices

**Feature**

- **Tax payment from home or office**
  - Taxpayers can file, pay, prepare tax returns, and process most tax related tasks anytime and anywhere with internet connection, without having to visit the bank or tax offices.

- **Revolutionary decrease in workload for NTS**
  - Inefficiency of handling simple tasks is decreased and errors like omissions and typos are prevented, allowing tax officers to focus on professional tasks, such as analyzing tax sources.

- **Improved government transparency by preventing tax evasion and fraud**
  - Minimize public contacts to decrease the possibility of tax irregularities; transparent management of national income by networking electronic tax invoice and tax deduction for credit card usage.
3. National Electronic Tax System (HomeTax)

Before

- Before HomeTax, taxpayers had to visit tax offices with documents to pay tax
- During tax season, the offices were crowded with long lines
- Public officers also had to input stacks of documents into the computer and many typos had to be corrected

After

- After HomeTax was introduced in 2002, taxpayers can process tax duties conveniently online, without having to visit the tax offices
- Transparency of tax affairs is increased, as officers can focus their expertise and time on core tasks, such as analyzing tax sources, not on repetitive, trivial tasks, such as correcting typos and errors
3. National Electronic Tax System (HomeTax)

**Effects**

E-filing (growth rate)

- **VAT (Value-Added Tax)**
  - 2012: 80.3%
  - 2018: 94.4%

- **PIT (Personal Income Tax)**
  - 2012: 87.8%
  - 2018: 97.3%

- **CIT (Corporate Income Tax)**
  - 2012: 97.5%
  - 2018: 99.2%

**Awards**

- World’s first tax agency to receive ISO/IEC 20000 certification (2008)
- Best Practice in Electronic Tax Administration by OECD (2006)
3. National Electronic Tax System (HomeTax)

**HomeTax in Your Hands (SonTax)**

Effective branding to make HomeTax mobile easy to recognize and access

**Expanding Mobile Services**

Mobile HomeTax to cover the full range of tax affairs

**Making Compliance Easy**

Provide sole proprietors and micro-businesses an environment conducive to compliance
Chapter 09 4. Digital Budget and Accounting System (dBrain)

Integrated and Connected System, Real-time Management of All National Financial Activities

Integrated financial information management system where the lifecycle of national finance, from finance operation planning to budget planning, execution, asset/liability management, settlement, and performance evaluation can be managed.

- **Built integrated financial information management system**
  - Supports rational policy decision making process with integrated and combined management of financial information of all ministries and relevant organizations

- **Performance-focused financial operation system**
  - Strategic distribution of finances and performance-focused management, creating the essence of financial policy innovation

- **Real-time management of revenue/expenses**
  - All revenue/expenses tasks are automated through the electronic notification/payment system and electronic fund transfer system
4. Digital Budget and Accounting System (dBrain)

Before

- Budget systems and accounting systems were not connected, making it difficult to use real-time financial information or review investment funds.

  The system was on a cash basis and single-entry bookkeeping basis, so revenue and expenses were recorded and accounting components were missing.

  Therefore, the concept of cost was lacking when looking at the performance of state projects.

  It was difficult to understand financial information at a glance, and thus difficult to make rational financial policy decisions.

After

- After dBrain

  It became easier to review investment funds as real-time information on assets and liabilities are shared.

  By implementing an accrual basis, double-entry bookkeeping system, mid to long-term financial risks can be predicted readily, and immediate review of records is possible, enhancing the reliability of accounting information.

  By linking with financial related information systems, efficient distribution of funds and rational decision-making are made possible.
Integrated Financial Management Information System (IFMIS)

Managing the entire national finance management life cycle

KPFIS
dBrain

(Based on FY 2019 figures)
1) DBAS (Digital Budget & Accounting System)
2) dBrain: nickname for DBAS; combination of ‘D’ which stands for “digital and “brain”

National Fiscal Management Plan
5-year Medium-term Expenditure Framework (MTEF)

Performance Evaluation
Manage 1,771 Fiscal Programs
4,633 Performance Indicators

Accounting & Settlement
Prepare 417 Settlement Reports

Budget Formulation
$427 Billion Budget Request
Review & Adjustment

Budget Execution
Avg. Daily Treasury Funds
Transfer: $7.5 billion
Avg. Daily Treasury Funds
Receipt: $5 billion

Asset & Debt Management
Asset $1,915 billion
Debt $1,453 billion
$7.6 billion expenditure transactions and $3.2 billion revenue collection transactions on daily average

Total No. of dBrain Users  67,580

Daily Operation Index

User Traffic  14,106
Expenditure Transfer Amount  $7.5 billion
Revenue Collection Amount  $5 billion
No. of Cases  520,000
No. of User Calls  1,436

Unit: daily average, as of Dec, 2019

Awards
- 2013 UN Public Service Awards, 1st place in the Promoting Whole-of-Government Approaches in the Information Age Category
Hosted seminars organized by the World Bank, IDB and ADB (13 times)

Shared experiences of financial innovation and dBrain through reciprocal visits to Indonesia, Mongolia, Turkey, the Philippines, etc. (60 times)

Signed MOUs with Russia, Honduras, Colombia, Peru, etc. (6 MOUs)
• KONEPS Official Website, https://www.pps.go.kr/eng/jsp/koneps/achievements.eng