
Korea's ICT Competency Assessment Framework for Government Officials

February 23, 2017

Hyunjin BYUN

Executive Principal, Dep. of Global ICT Cooperation
National Information Society Agency
Republic of Korea

| CONTENTS |

01 Introduction to ICT Competency Assessment

02 Korea's ICT Competency Assessment Framework

03 Use of the Assessment Results

01 Introduction to ICT Competency Assessment

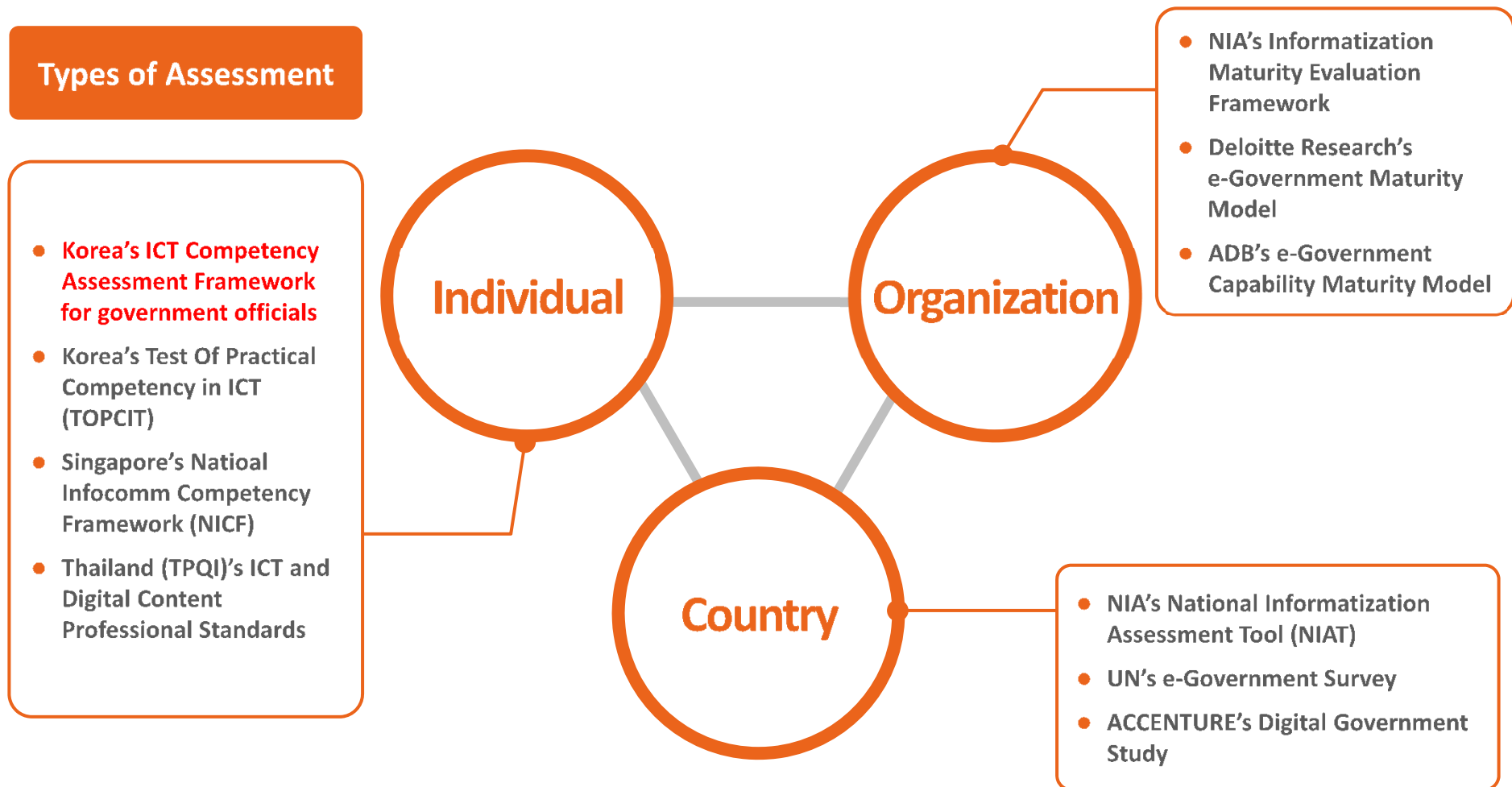
01

What is ICT Competency Assessment ?

4

“ICT Competency” : Ability to solve problems and enhance organizational performance by using ICT in the work process

Types of Assessment

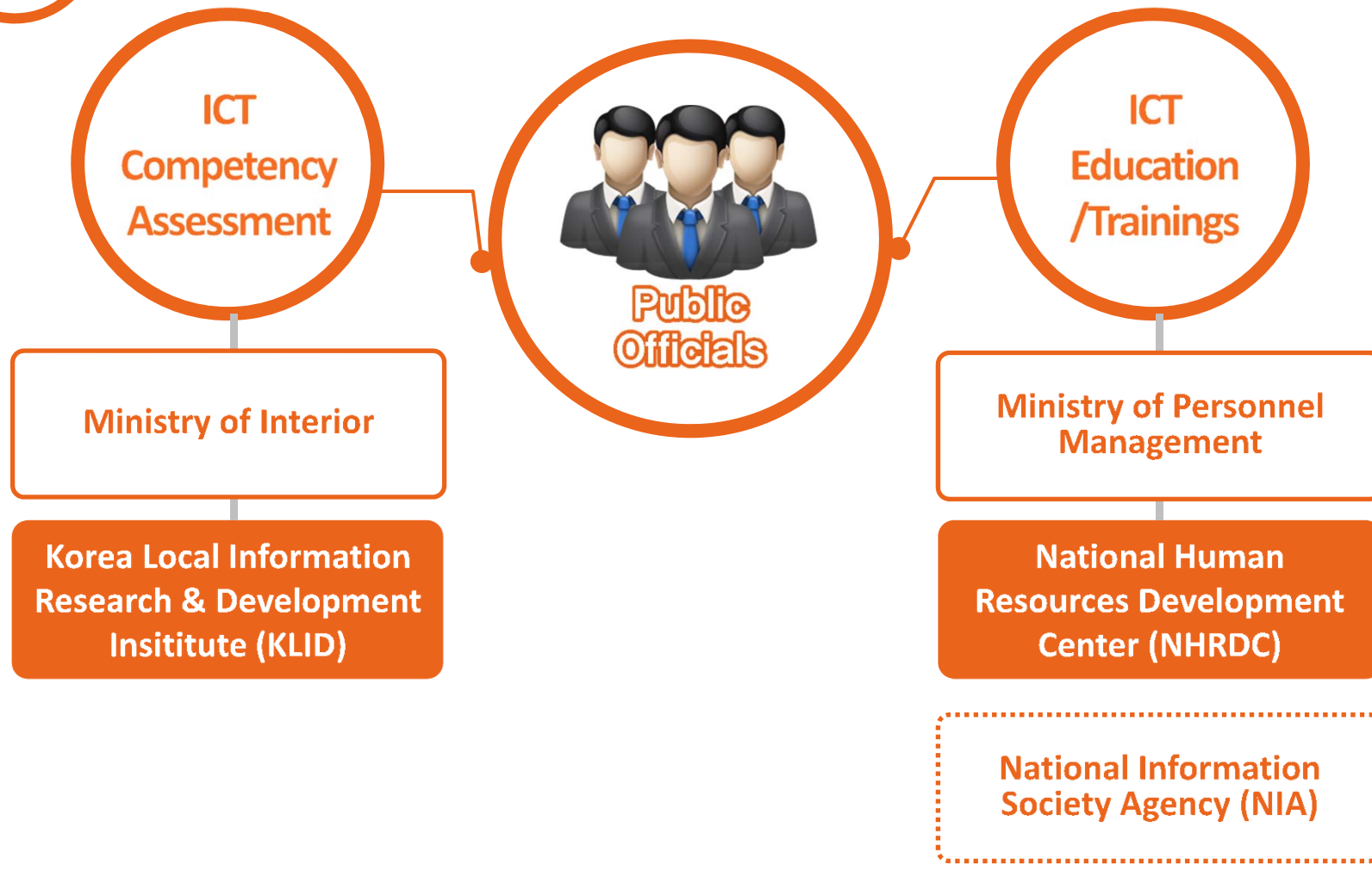


02 Korea's ICT Competency Assessment Framework

02 1. Implementation Structure for ICT Competency Assessment



ICT to increase public administration efficiency and public services
=> Public officials to build ICT competency



02 2. Evolution of ICT Competency Assessment



2005 ~ 2009	IT skills assessment (similar to private sector's computer skills test)	<ul style="list-style-type: none"> • A manager is sent to the organisation wishing to have the assessment, which consisted of theoretical and practical tests. • 7,928 persons in 83 organisations took the assessment tests from 2005~2009.
2010	Establishment of ICT Competency Assessment framework and its pilot implementation	<ul style="list-style-type: none"> • A competency assessment framework was established, using the online computer-based testing (CBT) method. • ICT competency assessment model, assessment indicators, and intensive guide for competency-building were developed. • 521 persons in 29 organisations, including MOGAHA and public offices in Gangwon Province, took the pilot assessment tests.
2011 ~ 2014	Full-scale implementation of the ICT Competency Assessment	<ul style="list-style-type: none"> • The ICT competency assessment model has been continually improved. • In 2012, a dedicated server was installed and the system was transferred (from Central Officials Training Institute to KLID) • Assessment scale and method (BARS) were changed in 2013.

02 3. Model of ICT Competency Assessment



Internet-based test (<http://i-cap.e-academy.go.kr>)

Definition of ICT Competency		ICT Competency Assessment Model				
ICT competency	Ability to solve problems and enhance the organisational performance by using ICT in the work process	Common ICT competency (10)	ICT competency that is commonly required in all public officials regardless of their jobs (except for ICT Leadership, which is for management-level officials)	Understanding of ICT (4)		
				ICT Leadership (3)		
				ICT Use (3)		
		Job-based ICT competency (61)	ICT competency specifically required in public officials who have ICT-related jobs (16 jobs)	OS (8)	Middleware (1)	
				DB (6)	Network (6)	
				Security (15)	Program Language (4)	
Project Management (6)	Web (2)					
ERP (2)	IT Strategy (11)					

02

4. Targets and Participation Rate of ICT Competency Assessment (Year 2014)



Active Participation of Government Officials

Organisation	Assigned No. of Officials		No. of Officials Participated	Participation Rate (%)	No. of Officials Participated in 2013	Growth Rate (%)
	No. of organisations	No. of persons				
Total	303	67,780	77,958	115.02	76,743	1.6
Central Government	43	13,285	13,632	102.61	15,336	-11.1
Local Government	243	49,418	55,430	112.17	54,254	2.2
Educational Offices	17	5,077	8,896	175.22	7,153	24.4

02 5. Assessment Categories by Job Type and Level



Type		Questionnaire Type	No. of Questions	Remarks
Job Type	Level			
General Positions	Managers	Common competency	40	<ul style="list-style-type: none"> • 'Competency for ICT leadership' (3 competency types and 9 elements/questions) • Only for managerial-level officials
	Middle managers or working-level	Common competency	31	
Computing or ICT-related Positions	Managers	Common competency (40 questions) and specialised competency (3~32 questions)	Min 43~ Max 72	<ul style="list-style-type: none"> • No. of questions are different for each of selected 16 jobs • Positions other than computing-related must also select one of the 16 jobs for assessment. • Computing-related positions whose work is not currently related to ICT select one of the 18 jobs, which they wish to have.
	Middle managers or working-level	Common competency (31 questions) and specialised competency (3~32 questions)	Min 34~ Max 63	

02 6. Common ICT Competency

10 Competency Types and 40 Assessment Elements



Understanding of ICT (3 types and 15 elements)		ICT Use (4 types and 15 elements)		ICT Leadership (3 types and 9 elements)	
Understanding ICT Policies (8)	Gov3.0 Master Plan	PC Management (3)	Executing Security Functions of PC	Diffusion (3)	Exploring Opportunities
	Smart Government Action Plan		Setting OS Environment in PC		Propagating the Need
	Local Informatisation Master Plan		Setting Internet Environment in PC		Promoting Policies
	Work Efficiency	OA Use (6)	Hangul Programs (Korean Word Processor)	Practice (3)	Making Efforts to Adopt Information Technologies
	Impact of G4C Services		Excel		Encouraging Use of Information Technologies
	Smart Work		Power Point	Finding Solutions to Problems	
	Open Data and Data Sharing		Image Editing Programs	Finding Out Needed Competency	
	Copyright Infringement		Video Editing Programs	Providing Opportunities for Competency Development	
Cloud Computing		Mobile Applications	Competency Development Support (3)	Providing Support for Adaptation	
Understanding Latest Technologies (3)	Big Data	Internet Use (3)	Information Search		
	IoT		Social Network Services		
			Information Systems		
Understanding Personal Information Protection Act (4)	Personal Information Processing Standards and Procedures	Mobile Device Management (3)	Executing Mobile Security Functions		
	Personal Information Management Standards and Procedures		Setting Mobile OS Environment		
	Standards and Procedures for Ensuring Information Holder's Rights				
	Personal Information Infringement				

02 7. Job-based ICT Competency Assessment

10 Competency Types and 61 Assessment Elements



OS (8)	Server Platform Cluster Management	Understanding of System Management Software	UNIX System Management	LINUX System Management	Windows System Management	Cloud System Management	Understanding of Integrated Servers and Virtualisation Technology	System Compatibility Management
DB (6)	Database Tuning	Database Operation and Management	Database Backup and Recovery	Database Architecturing	Understanding of SQL and PL/SQL	Data Quality Management		
Security (15)	Understanding of Information System Security	Response to Security Incidents and Framework Building	Understanding of Network Security Methods	Computer Forensics	Reverse Engineering	Understanding of Information Security Management System	Secure OS Use	Understanding of Database Encryption
	Understanding of DLP	Web Server Security Review	Understanding of DDoS	Understanding of Mobile Security	Establishment of Security Architecture	Understanding of Secure Coding	Understanding of Network Access Control	
Project Management (6)	Project Planning	Software Test	Configuration Management	Project Performance Evaluation	E-Government Project Management Office (PMO)	Information System Audit		
ERP (2)	SAP ERP Management	Oracle ERP Management						
Middleware (1)	Use of TP-Monitor							
Network (6)	Understanding of Wireless Facilities	Understanding of Network Types	Network Planning and Design	Network Equipment Operation and Management	Understanding of VOIP/IPT	Use of Applications		
Program Language (4)	Basic Understanding of Programming Language	Use of Shell Programming	Use of Tools for Integrated Management	Understanding of Smart Phone Applications				
Web (2)	Use of Web Servers	Use of Web Application Servers						
IT Strategy (11)	IT Governance Establishment	Understanding of ITSM	Establishment of IT Architecture	Understanding of Information System Audit	Business innovation	Understanding of SOA	Understanding of Domestic and International Standards	Understanding of IT Terms and Concepts
	Understanding of IT Educational Trend	IT Education Planning	Evaluation of IT Education					

02

[Reference] Thailand's ICT Competency Standards

13



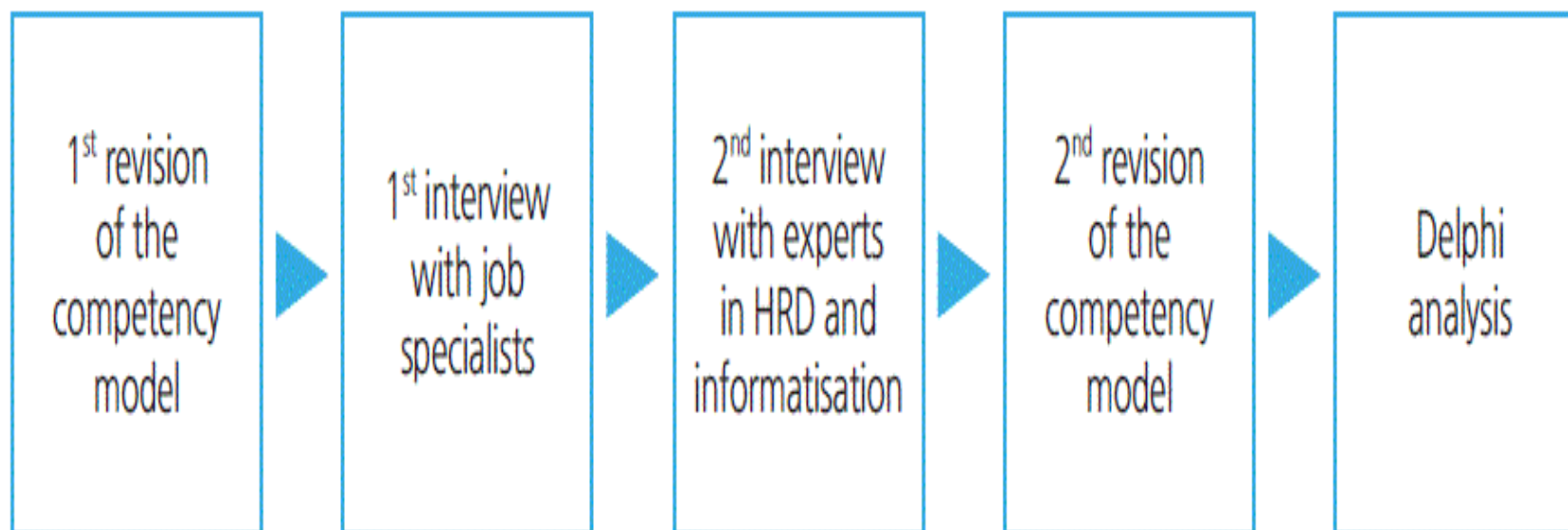
Category	ICT Professions	Number of Levels
1. Hardware (11 professions)	ICT product design and development	3
	ICT sourcing and procurement	2
	ICT production and quality assurance	3
	Computer and computer system service provider	3
2. Network and security (10 professions)	Technical supporter	4
	Network and computer security system manager	3
	Computer network system manager	3
3. Software and application (11 professions)	Software tester	2
	Software developer	3
	ERP software	2
	Software architect	3
	Software quality control	4
4. Animation (14 professions)	Animation editor	2
	Animation sound designer	2
	Animation artist	2
	Animation project management	2
	Animation modeler	2
	Animator	4
	Animation scriptwriter	3
	Animation storyboard artist	2
5. Telecommunication (15 professions)	Radio Base Station (RBS) technician	4
	Microwave link technician	3
	Optical Distribution Network (ODN) technician	2
	RBS technology officer	2
	Microwave link technology officer	2
6. Project management (5 professions)	IT project management	5

02

8. Procedures of Developing ICT Competency Assessment Model



improved through analyses of IT trends, national informatization policies and interviews with experts



03 Use of the Assessment Results

03 Use of the Assessment Results



Analysis of Assessment Results

Provision of Reports

- Determine a set of competency individuals need to develop
- Guide individuals' ICT competency development
- Prioritize areas for education
- Determine a set of competency working staff need to develop
- Guide coaching and encouraging staff
- Prioritize areas for education
- Determine a set of competency organizations need to develop
- Guide organizations' ICT competency development
- Prioritize areas for education

Use of Reports

- Develop individuals' ICT education plan
- Coach working staff's ICT competency development
- Develop organizations' ICT education plan

Public Officials

Manager -level Officials

Heads of Organizations

Thank you
