Visualization for Ensuring the Efficiency of IT Audit

Jinwon Ho
The Board of Audit and Inspection of Korea

- IT Environment
- Operational Performance of Information Systems
- Importance
- Issues
- Measurement Criteria
- Visualization
- Data Visualization Cases
- Screen shots
- Implications

IT Environment

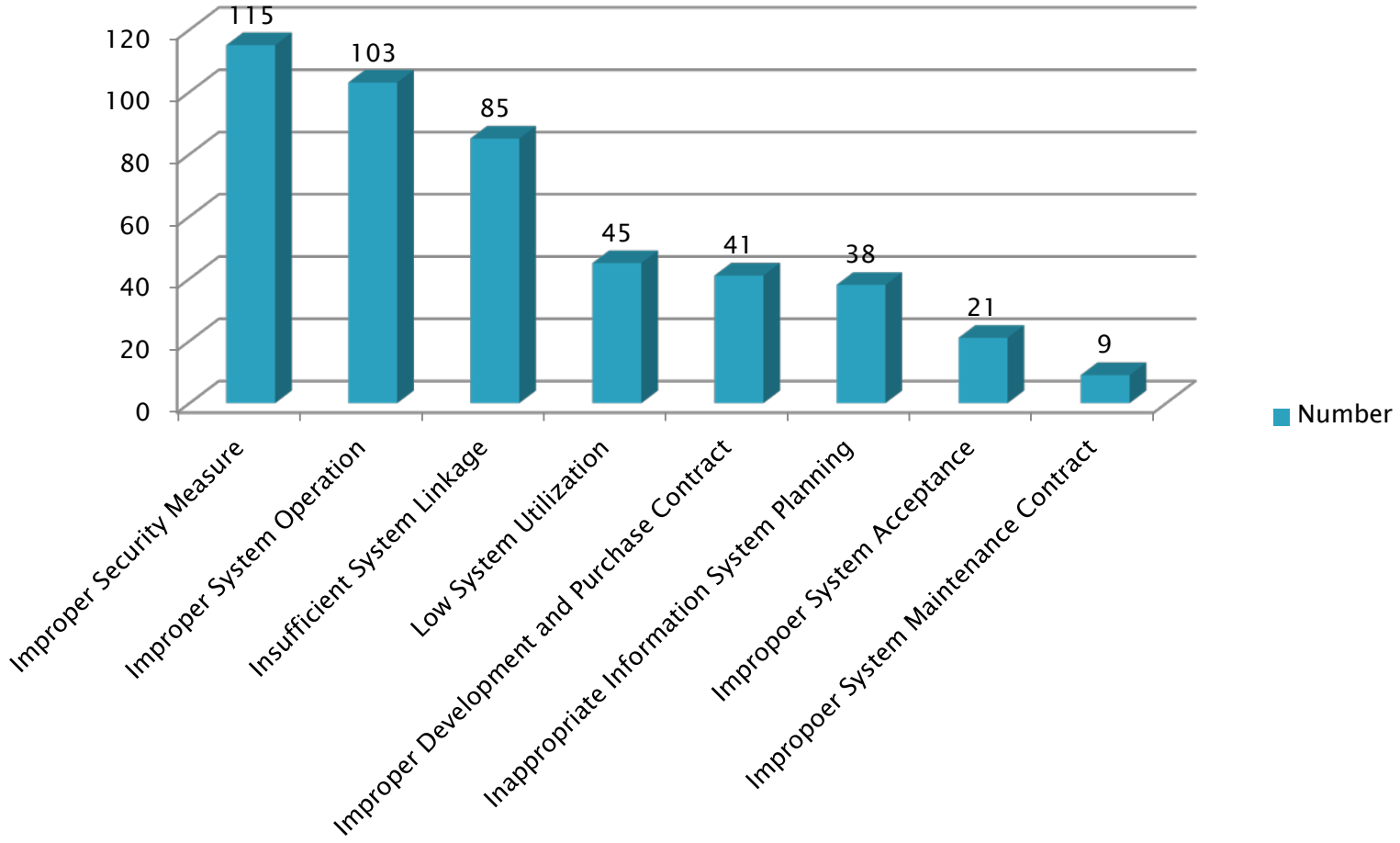
- Continuous increase in IT investment
- Interest in the utilization performance of information systems
- Needs continuous monitoring system
- Requires measurements of operational performance of information systems

Operational Performance of Information Systems

- Measuring the performance based on criteria for determining the operational validity of the information systems
  - “Guidelines of operational performance management information system”
- Successful IT investment is regarded as ensuring the utilization of information systems so that management of information systems is more important than just building of information systems
- Operational effects of the information system is to maximize the efficient and effective use of information resources

Importance of Operational Performance of Information Systems

- Results of IT audit cases by BAI in the past three years



Issues in Information Systems Operation

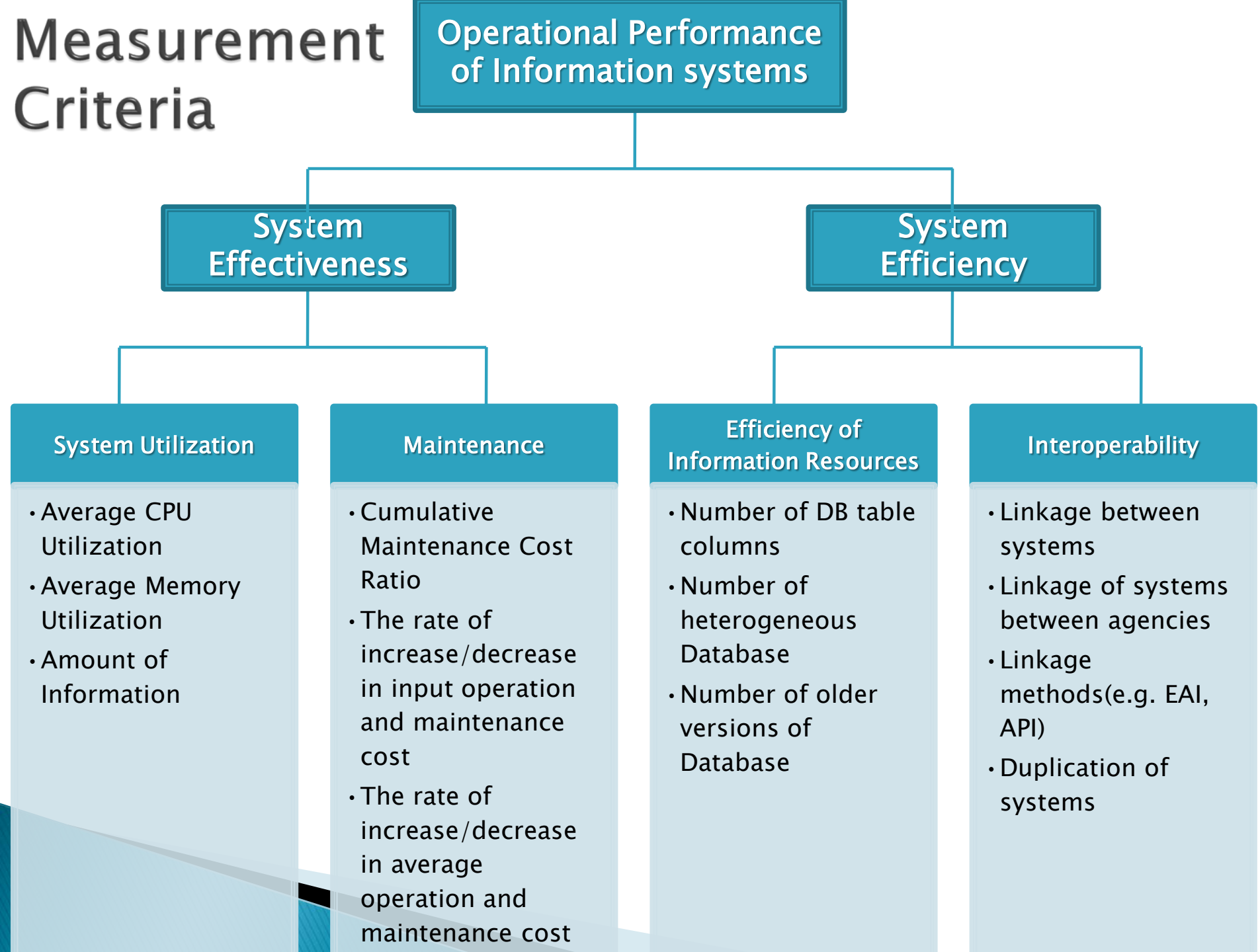
- Scattered criteria and methods of measuring information systems operation in multiple guidelines

- Difficulty of using data through Government-wide Enterprise Architecture (EA) Portal

Issues in Information Systems Operation

- Government-wide EA Portal
  - Review of duplication, overlap, integration between information systems
- But,
  - Current classification system is complex and it is characterized by agencies so that comparisons between agencies are difficult

Measurement Criteria



What You See
Is What You Get

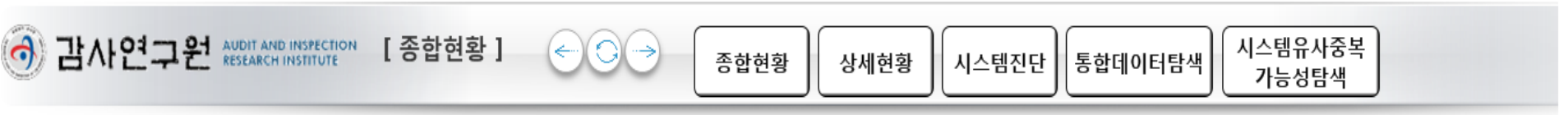
Visualization

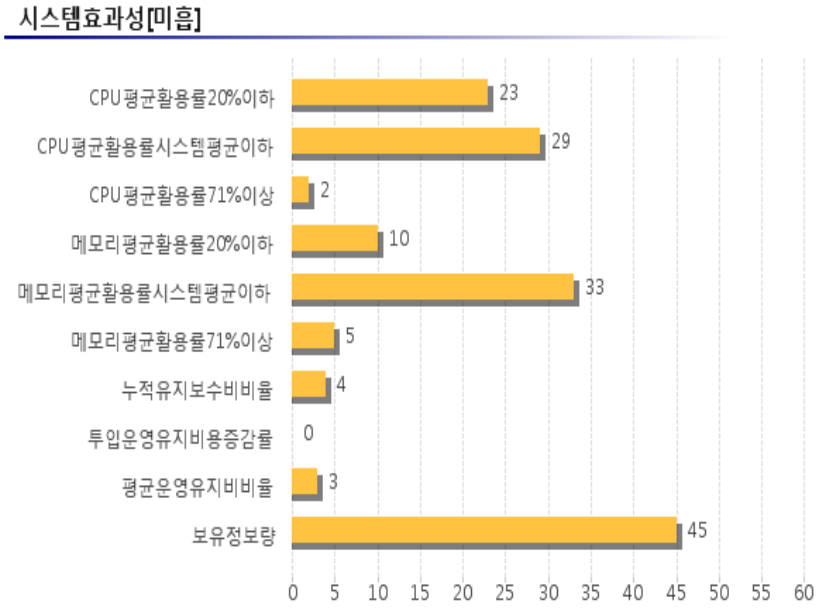
- A de-facto standard as means for strategic decision making
- Presents information in ways that engages the use of the human's cognitive and visual abilities
- Helps auditors gain better insights, draw better conclusions and ultimately improve the audit process
  - Reduces analysis efforts in rapid manner without manipulating underlying data

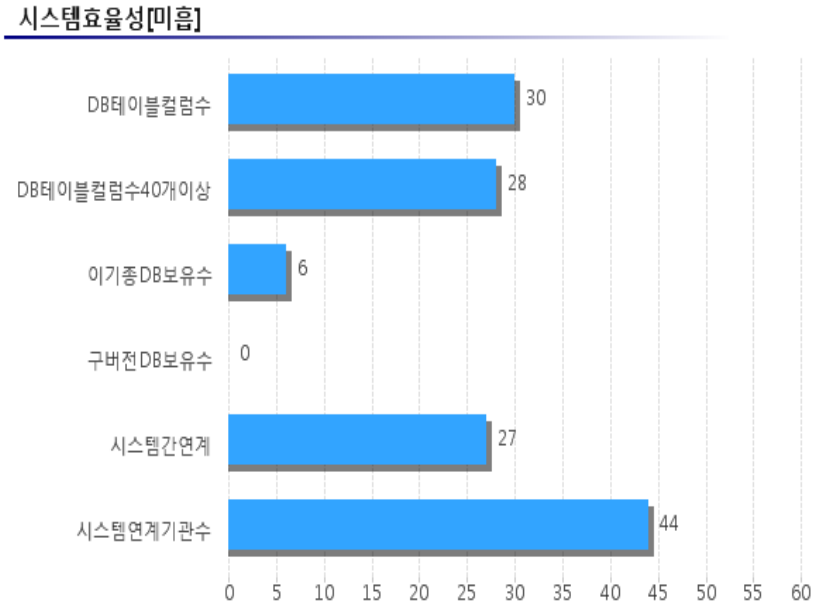
Data Visualization Cases

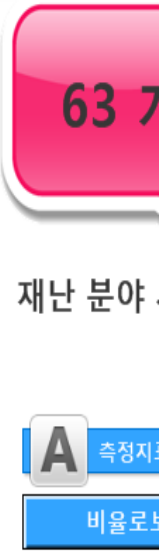
- (USA) Office of Management Budget
- (Japan) Cabinet Secretariat, Information and Communication Technology Strategy Office
- (UK) National Audit Office
- (Australia) Victorian Auditor-General's Office

Screenshot(Overall Status)



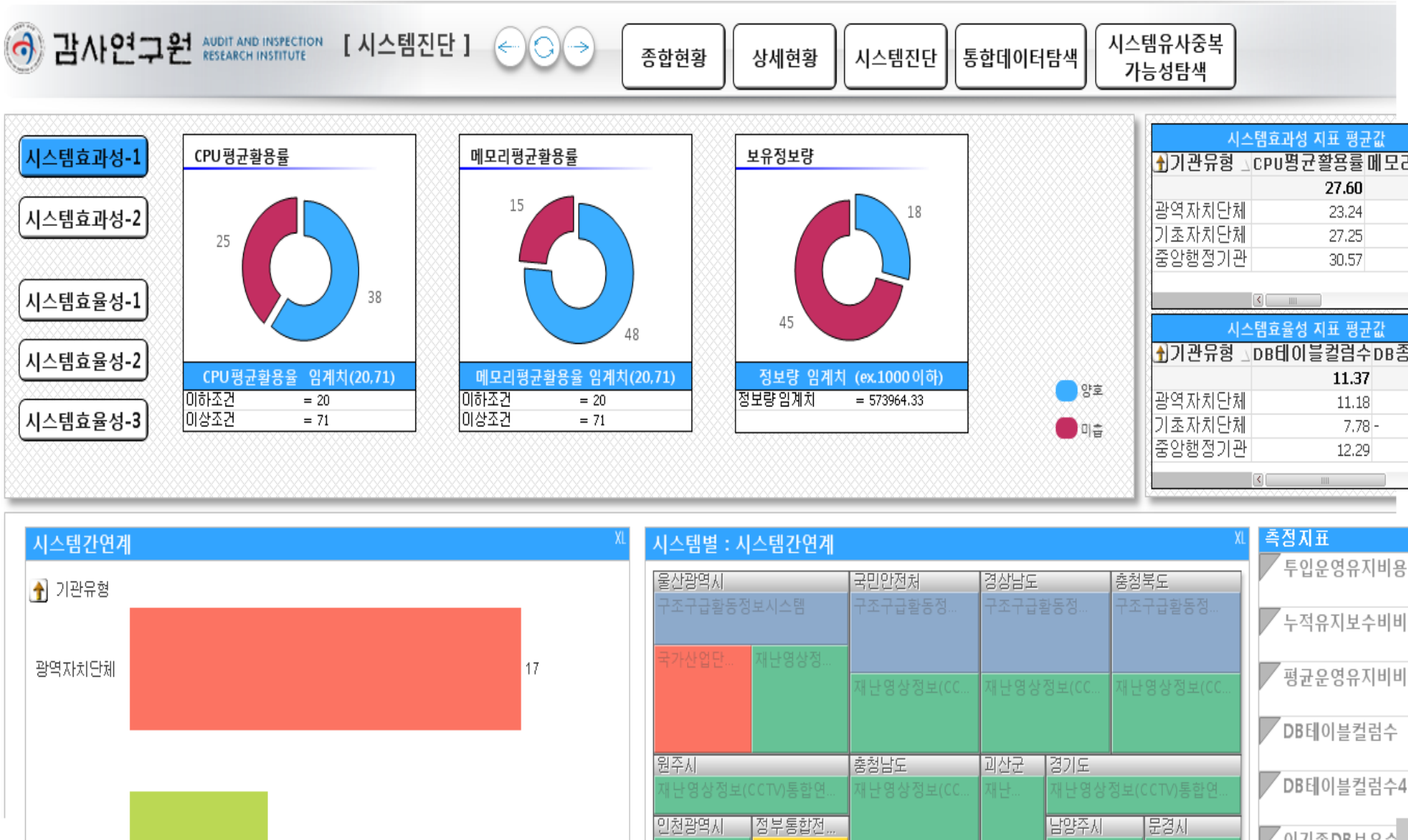






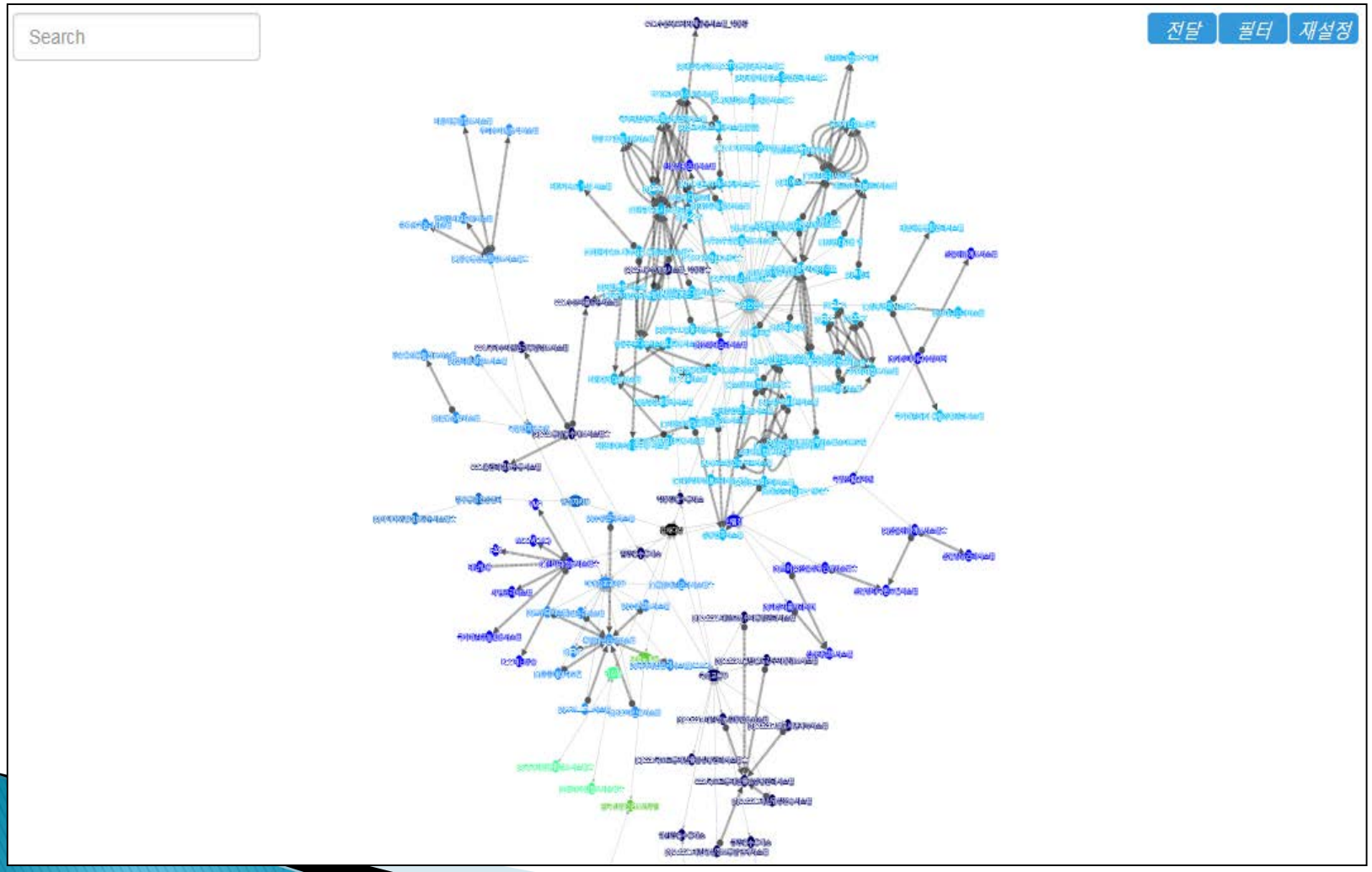
	분야	시스템효과성								
기관유형	측정지표	CPU평균활용률 20%이하	CPU평균활용률 시스템평균이하	CPU평균활용률 71%이상	메모리평균활용 률20%이하	메모리평균활용 률시스템평균이...	메모리평균활용 률71%이상	누적유지보수비 비율	투입운영유지비 용증감률	평균운영유지 비비율
광역자치단체		12	14	1	3	11	1	1	0	
기초자치단체		1	2	0	1	5	0	0	0	
중앙행정기관		10	13	1	6	17	4	3	0	

Screenshot (Interactive data analytics)

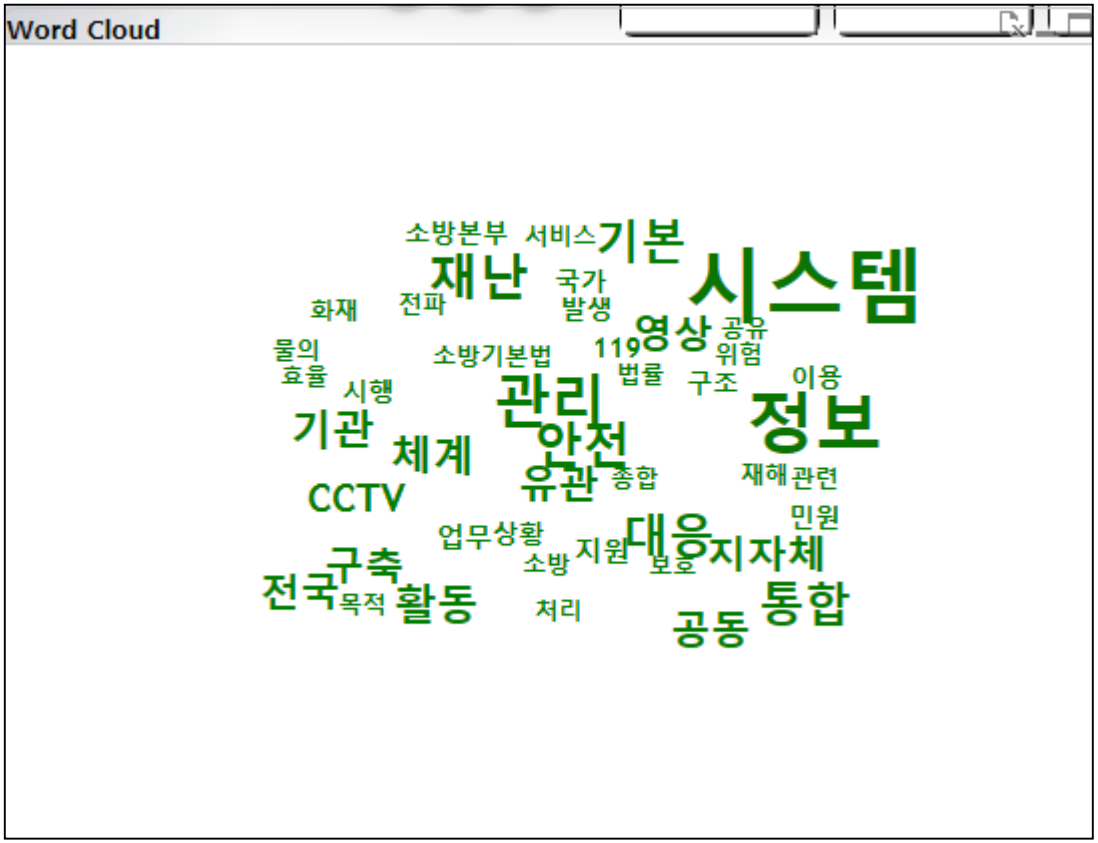


Screenshot (System duplications between agencies)

Screenshot (Systems Relationship Diagram)



Screenshot (Word Cloud)



Implications

- Data quality in Government-wide EA Portal
  - Non-input data, data errors
- Need to provide permanent data collection service to visualization system for auditors
- Development of additional quantitative indicators

thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
dziękuję
bedankt
спасибо
Баярлалаа
рахмат
mersi
barka
welalin
tack
spas
kia ora
faafetai lava
vinaka
спасибі
blagodaram
dank je
misaotra
matondo
paldies
grazzi
mahalo
tapadh leat
хвала
asante
manana
obrigada
tenki
murakoze
kiitos
dankie
nanni
nandri
dhanyavad
hvala
mauruuru
köszönöm
bayarlalaa
gràçie
enkosi
akun
dankon
aciù
djiere dieuf
tau
mochchakkeram
дякую
mamnun
chokrane
chnorakaloutioun
gratias ago
gràcies
sulpáy
go raibh maith agat
sobodi
dēkuji
sagolun
sukriya
kop khun krap
taiku
arigatô
takk
dakujem
trugarez
mèsi
didi madloba
najis tuke
ありがとう
tanemirt
grazie
rahmet
terima kasih
kam sah hamnida
rahmat
diolch
dhanyavadagalu
shukriya
mercé
мерси
তোমাকে ধন্যবাদ
감사합니다
xièxie
ευχαριστώ