

FIG Working Week
17 - 21 May, Bulgaria
From the wisdom of the ages
to the challenges of modern world
SOFIA 2015

FIG CHAMBER OF GRADUATED SURVEYORS

The Development of a Performance Assessment Model for Cadastral Survey Systems

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FIG International Federation of Surveyors
Fédération Internationale des Géomètres
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FIG COMMISSION 7
Cadastre & Land Management

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In a Cadastral Survey System

- Key player: Cadastral surveyors
- Core function: Provide spatial-related cadastral datasets to society
- Role: An indispensable land administrative function



Cadastral system evaluation

1990s ~ 2010s

FIG7 continuously benchmarked cadastral systems

2014 ~

We build an self-assessment platform to

- Evaluate the performance of **individual** cadastral survey system; and
- Compare understandings from **involved stakeholders**.

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Two highlighted principles

1) Enemark et al. (2014) defined

The land administration system should be **fit-for-purpose**

- Flexible
- Inclusive
- Participatory
- Affordable
- Reliable

Enemark, S., Lethmen, C., & McLaren, R. (2014). Building fit-for-purpose land administration systems. Proceedings of the XXV FIG International Congress, 16-21 June, Kuala Lumpur Malaysia.

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2) Williamson (2000) defined

Key performance indicators for a successful cadastral system / land administration system are :

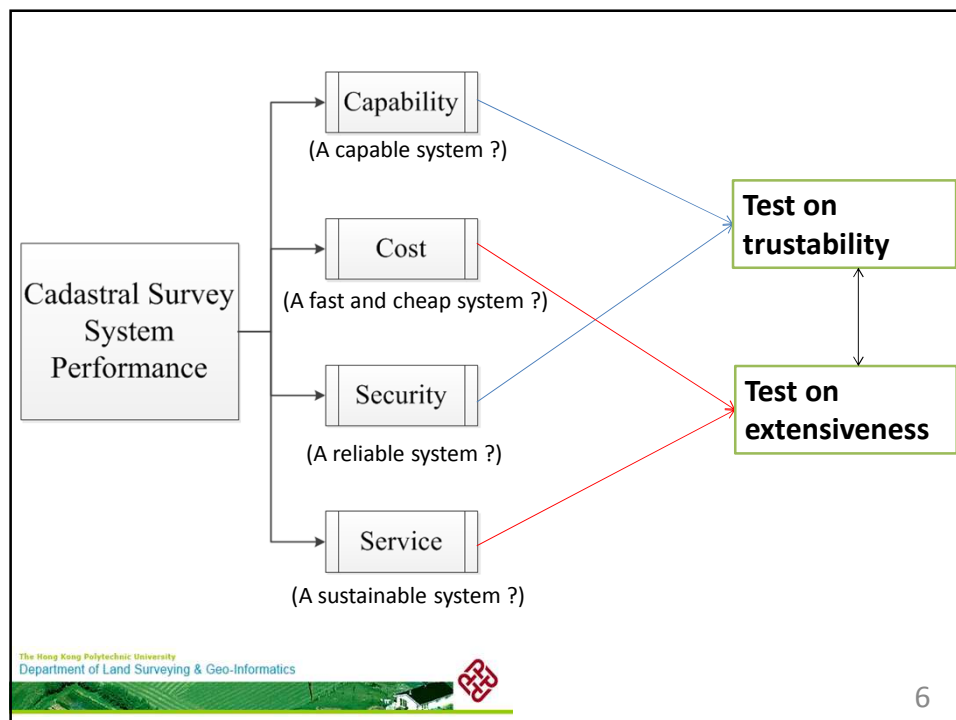
- whether it is **trusted** by general populace
- whether it is extensively **used** by stakeholders

Williamson, I.P. (2000). Best practices for land administration systems in developing countries.
International Conference on Land Policy Reform, 25-27 July, Jakarta Indonesia.

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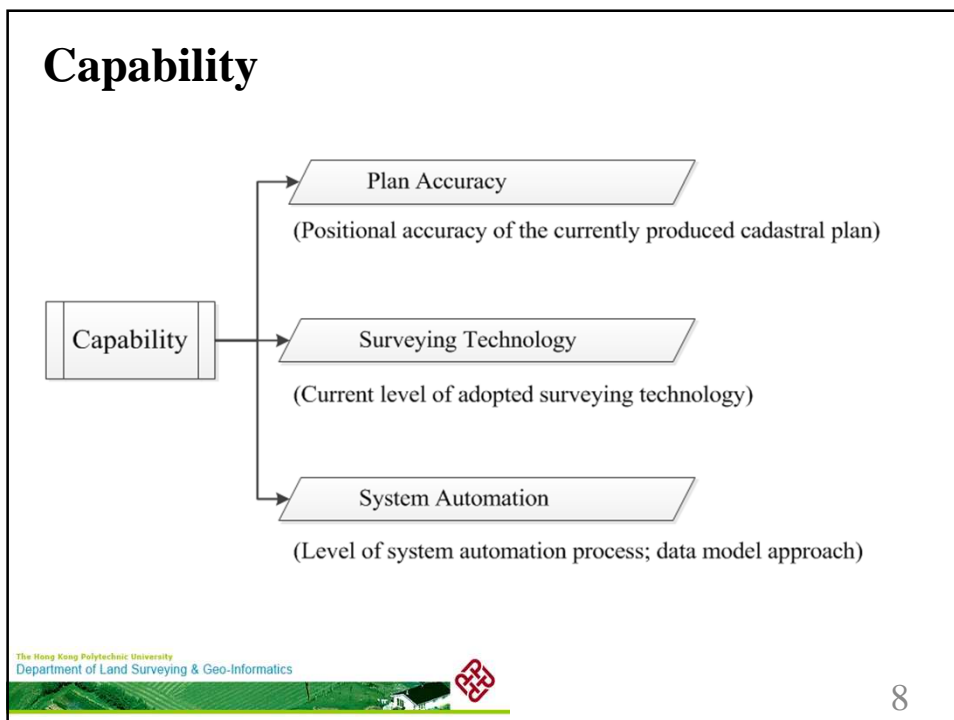
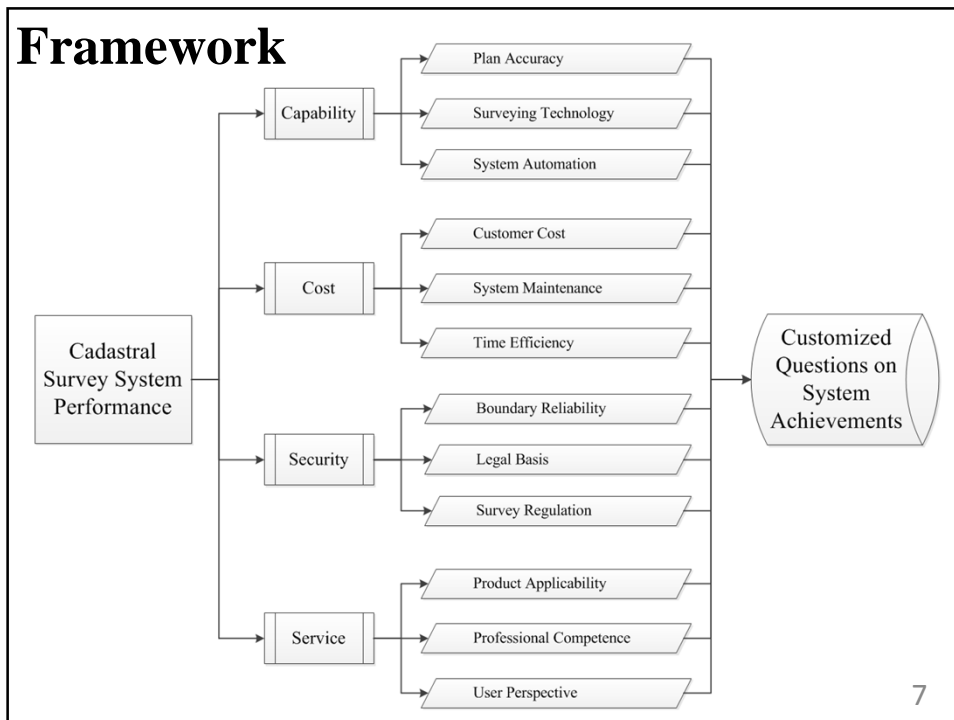
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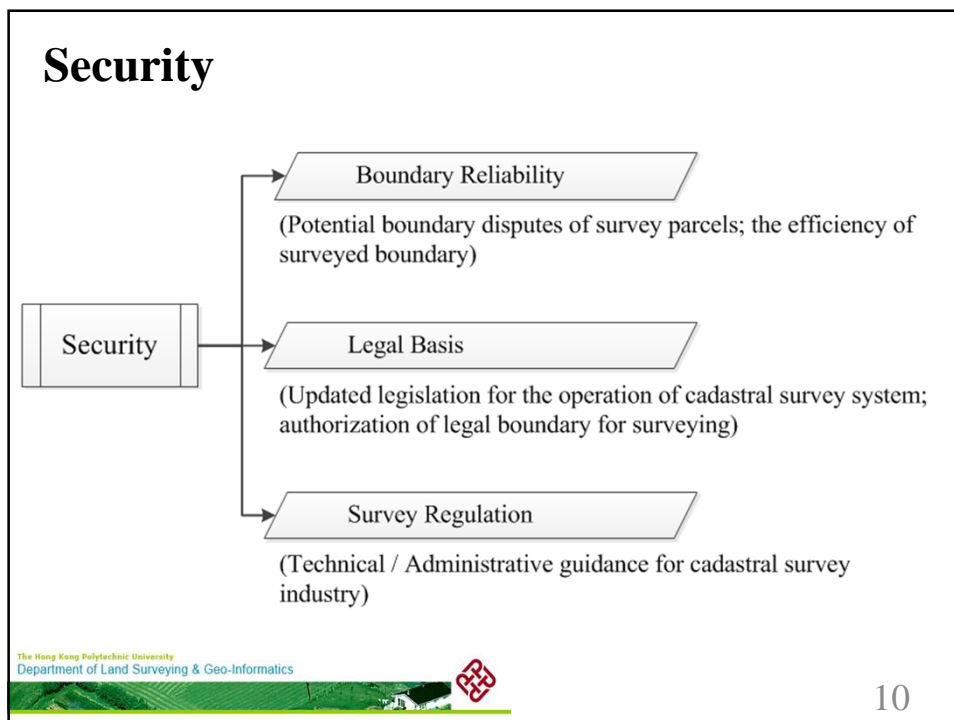
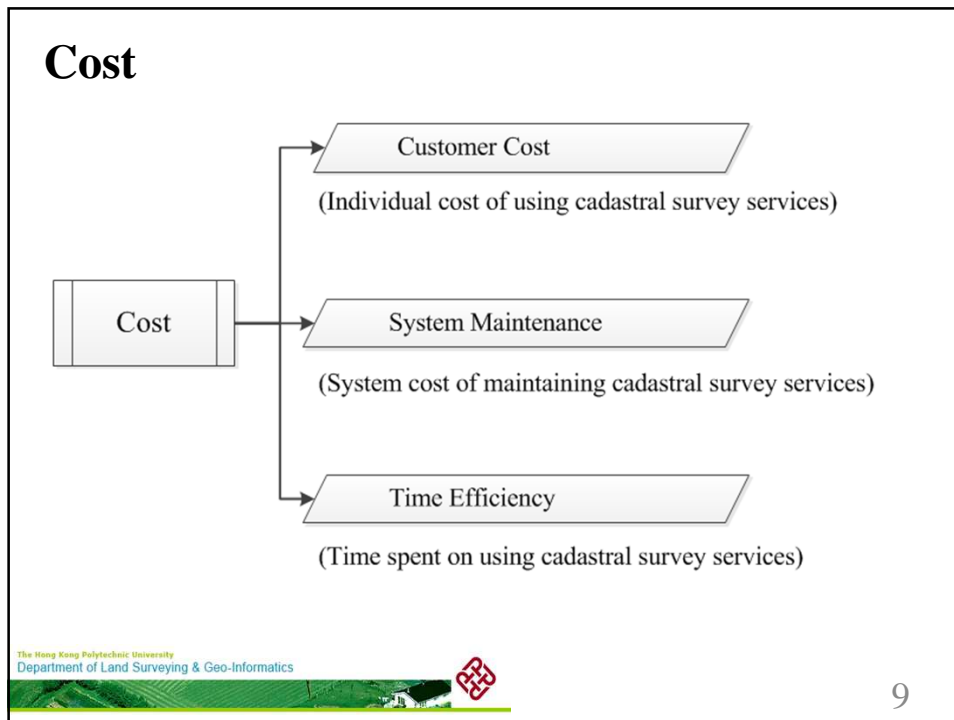


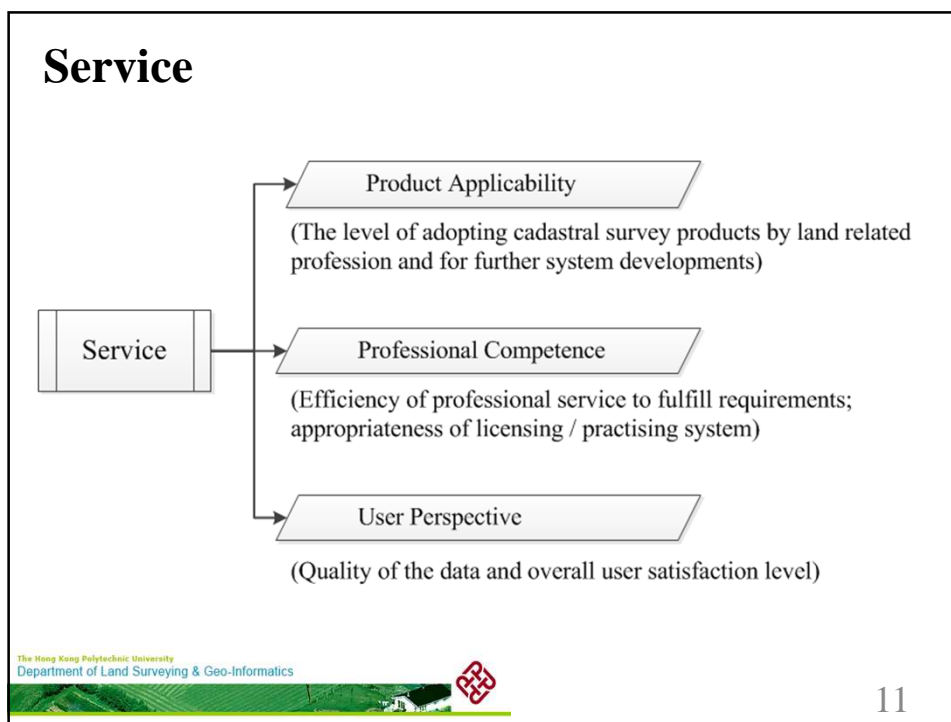
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Assessment Method

- Collect sufficient inputs from involved stakeholders
 - On-line Questionnaire (easy to input)
 - Privacy (anonymously processed)
- Analytic Hierarchy Process (AHP) to evaluate the judgements of participants
 - Pairwise comparisons

Saaty, T. L. (1980). The analytic hierarchy process: planning, priority setting, resource allocation. Texas: McGraw-Hill.

Individual Outputs

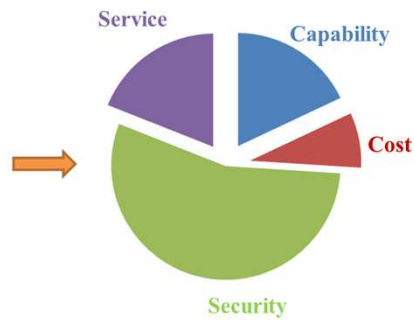
1) Criteria weight determination

Pairwise Comparisons

Please the appropriate value

	← Increasing Importance					Increasing Importance →												
Capability	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Cost
Capability	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Security
Capability	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Security
Cost	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service
Security	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service

Weights



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2) Performance gap evaluation

Direct rating in the context of: Plan Accuracy

Performance Achieved
The system achieved performance under current system design.

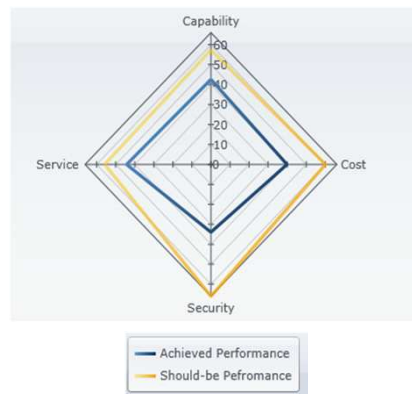
Performance Should-be
The optimum society required performance under current system setting.

...

Direct rating in the context of: User Perspective

Performance Achieved
The system achieved performance under current system design.

Performance Should-be
The optimum society required performance under current system setting.

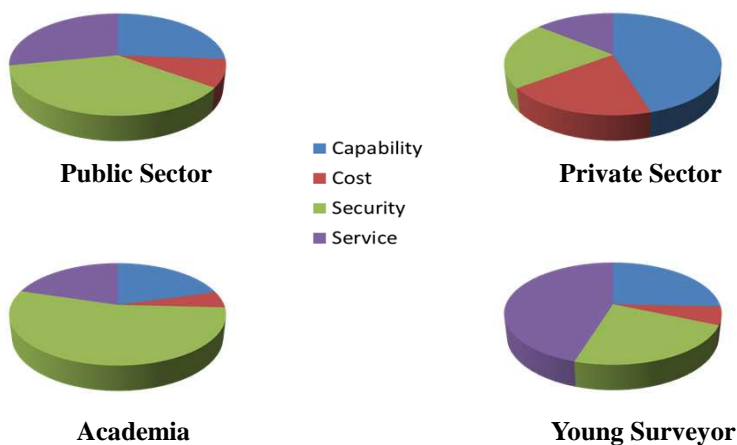


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Group Analysis

- A platform represents different understanding:

Preliminary results in Hong Kong (by May 14 2015)



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Model Implementation

Case Study in Hong Kong

1. International Expert Panel – Comments on Methodology and Criteria

2. HKIS LSD Members – Online Questionnaire

(Hong Kong Institute of Surveyors, Land Surveying Division)

3. Invited Stakeholders – Online Questionnaire or Interview


International Cooperation

1. Endorse the project by FIG Commission 7


Endorsed by FIG7 in 2014 FIG7 Annual Meeting, Quebec City, CANADA

2. Invite FIG7 members to join


3. Provide this testing package to all FIG7 institutional members for their operation



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THANK YOU

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Online Questionnaire: <http://goo.gl/forms/O34LVGyTbQ>