

Evolutionary Process of the Development of Spatial Data Infrastructure (SDI) in Hong Kong

Agenda

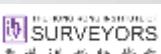
What, **W**hy necessary,
Who is responsible & **W**ay forward

Dr Conrad Tang

Dept. of Land Surveying & Geo-Informatics
The Hong Kong Polytechnic University

Mr Lesly LAM

Land Surveying Division
The Hong Kong Institute of Surveyors



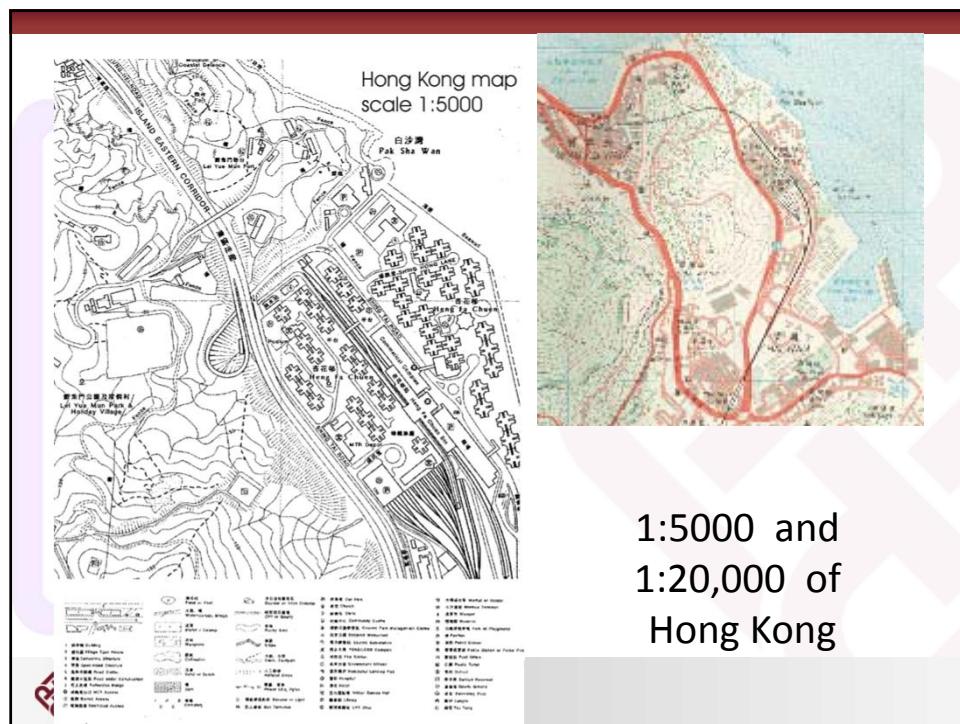
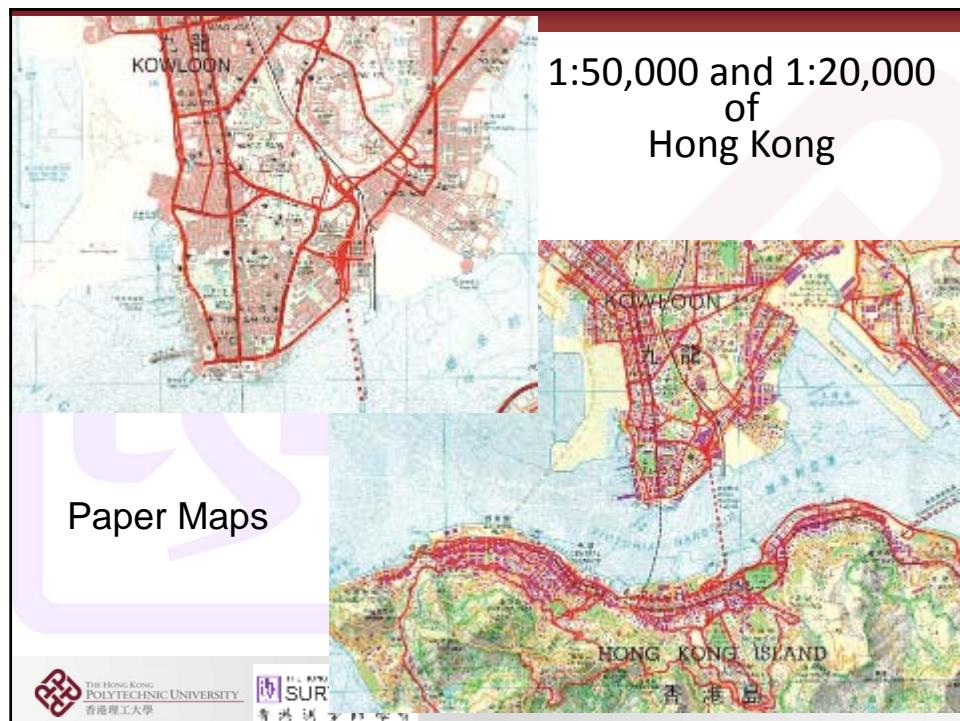
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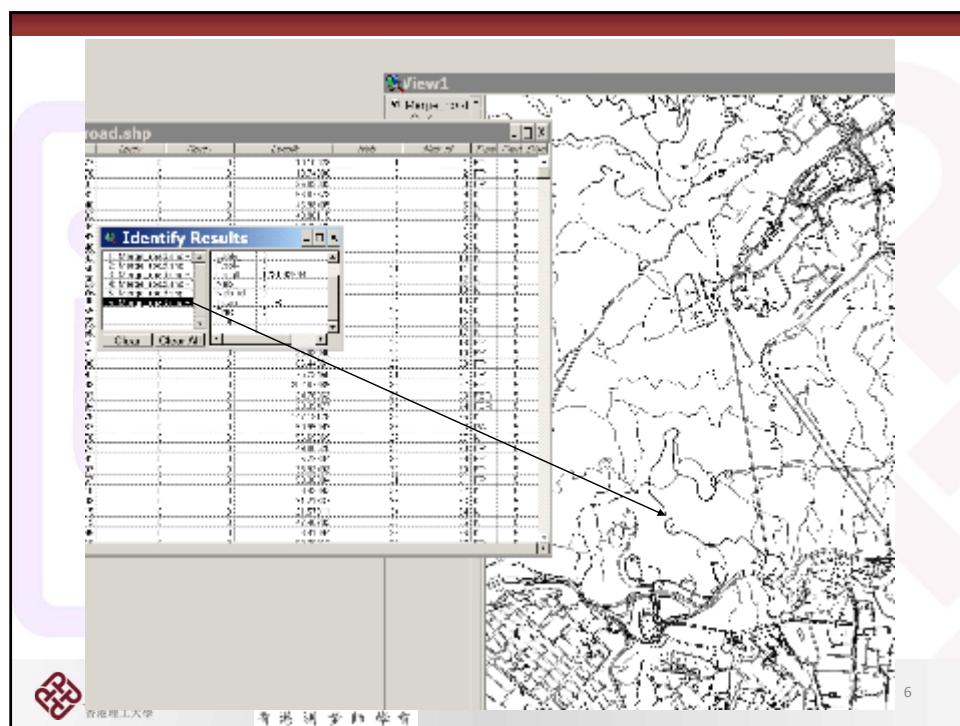
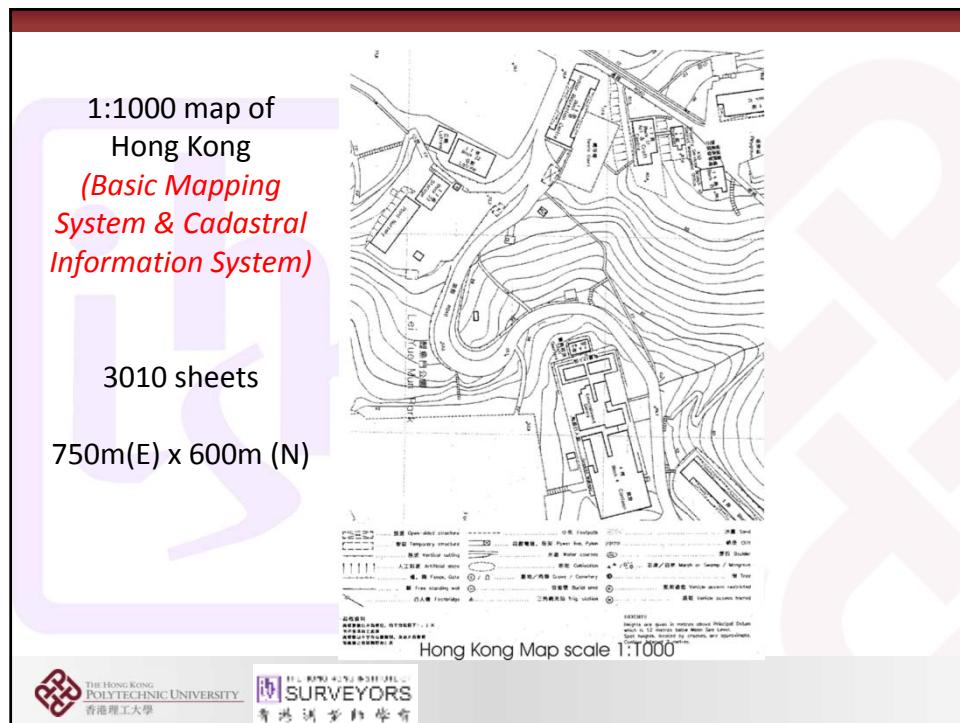
What is SDI in HK now?

- **Hong Kong SAR Government**
- **Geospatial Information Hub (GIH)**
- 2004. GIH is a web-based geographic information portal within the government.
 - digital maps and aerial photographs
 - lot boundaries and land use zonings
 - Dangerour slope; trees; population & health data...
- A Lands Department initiative



2





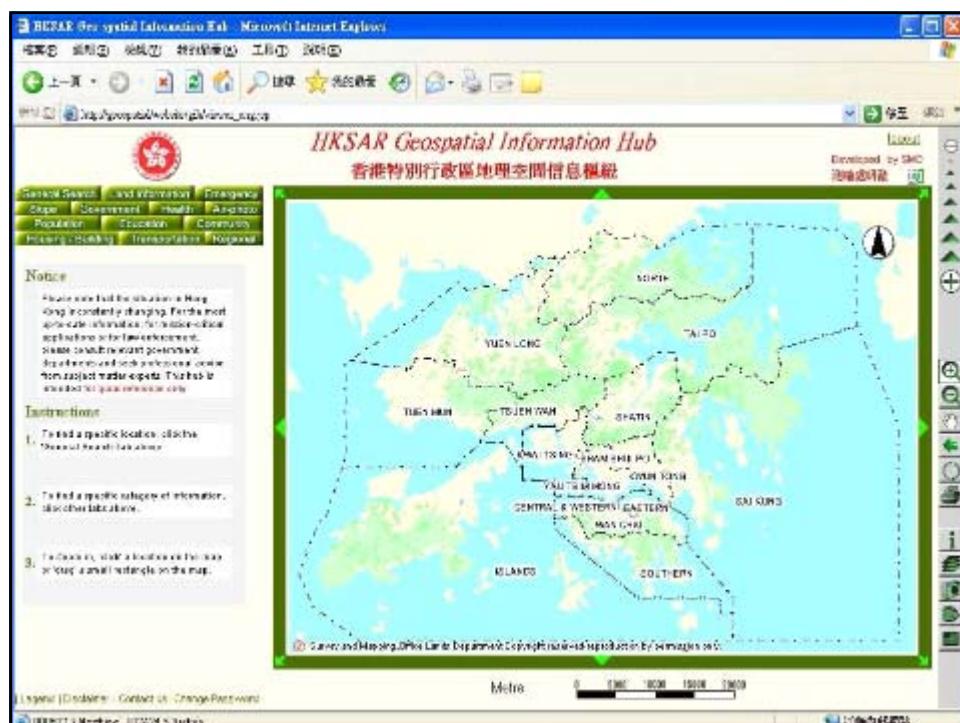
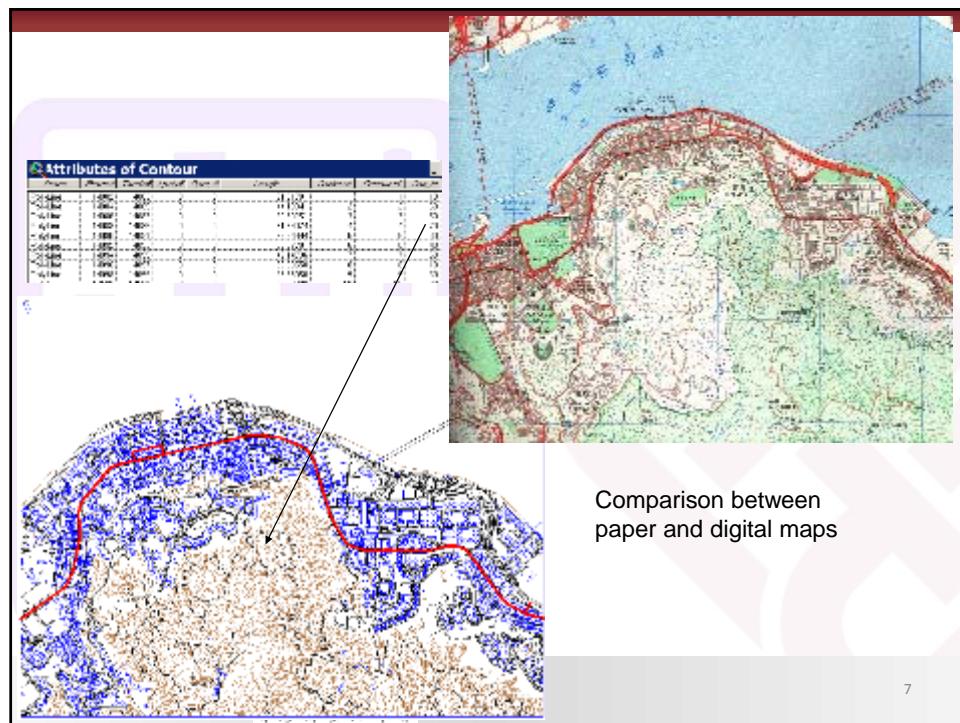


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Sydney, Australia, 11-16 April 2010

Lands Department

Computerized Land Information System
Geospatial Information Hub

Data Alignment Measure
Data Dissemination System



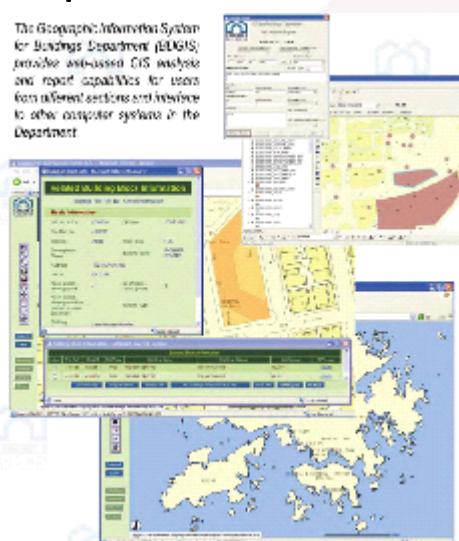
Buildings Department



Geographical
Information
System for
Buildings
Department

BDGIS

The Geographical Information System for Buildings Department (BDGIS) provides web-based GIS analysis and report generation for users from different sections and interface to other computer systems in the Department.

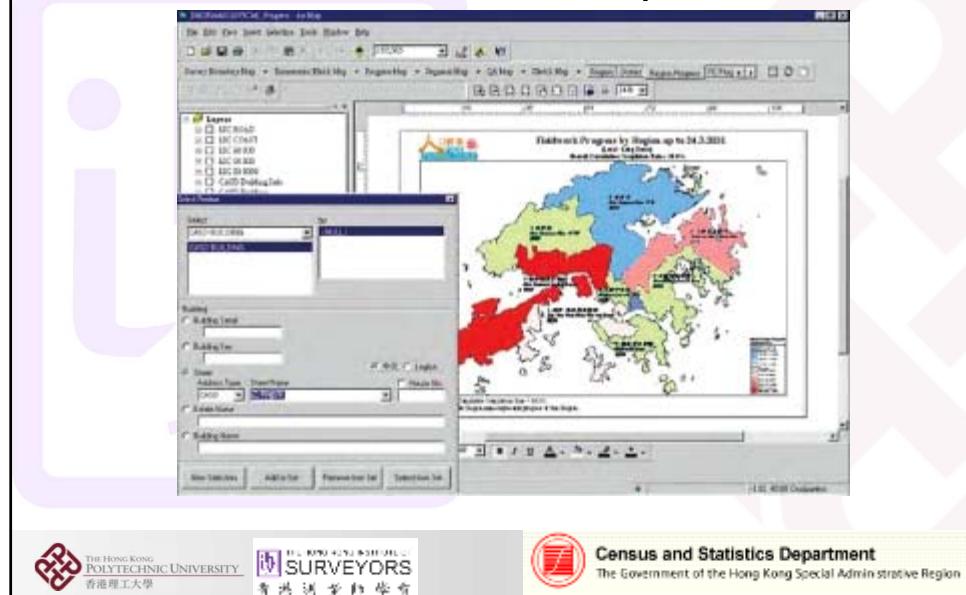


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10

Census & Statistics Department



Planning Department



Route Search - Map Search

Route Search - Text

From: To:

Route Search - Result

Route Number	From	To	Distance (km)	Duration (min)
1	Bus Stop 1	Bus Stop 2	2.5	15
2	Bus Stop 3	Bus Stop 4	3.0	20
3	Bus Stop 5	Bus Stop 6	2.0	12
4	Bus Stop 7	Bus Stop 8	1.8	10
5	Bus Stop 9	Bus Stop 10	2.2	14
6	Bus Stop 11	Bus Stop 12	2.8	17
7	Bus Stop 13	Bus Stop 14	2.0	12
8	Bus Stop 15	Bus Stop 16	2.4	16
9	Bus Stop 17	Bus Stop 18	2.1	13
10	Bus Stop 19	Bus Stop 20	2.3	15
11	Bus Stop 21	Bus Stop 22	2.6	17
12	Bus Stop 23	Bus Stop 24	2.7	18
13	Bus Stop 25	Bus Stop 26	2.9	19
14	Bus Stop 27	Bus Stop 28	2.5	16
15	Bus Stop 29	Bus Stop 30	2.2	14
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247	Bus Stop 493	Bus Stop 494	2.8	19
248	Bus Stop			

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Facing the Challenges – Building the Capacity

Sydney, Australia, 11-16 April 2010

Mobile GIS – “Locating Jetso”

立即開始搜尋以下項目

所有卷數	1
白動餐券數	0
火燒券數	0
中環及故宮券數	0
日韓美食券數	0
西式美食券數	0
菜園甜品券數	0
其他飲食券數	0
所有信用卡券數	0
信用卡飲食券數	0
信用卡購物券數	0
信用卡旅遊券數	0
你設定的信用卡是 中國銀行, 恒生銀行	

你現在位於銅鑼灣區的銅鑼灣廣場附近範圍:

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Typical Spatial Data

AECOM

Digital Topographic Model

Geological Map

High Resolution DEM

Aerial Photo

Landslide Incident

HPA Catchment

Orthorectified Aerial Photo

District Information System (DIS)

Borehole

Land Status / Lot Boundary for Land Ownership Value

GIS to Present Different Spatial Factors

Support Decision Making during Landslide Study

Data Acquisition: Digital aerial photo

Courtesy of ARSC



- ❖ Y-5 is a small, single-engine, general-purpose bi-plane with good low altitude performance. In China, it is used for 1:500 scale for digital photogrammetry.



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1:500 Digital Ortho Map



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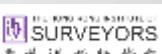
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Courtesy of MTR 18

1:500 Digital Line graph



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Courtesy of MTR 19

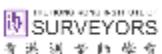
Data Acquisition: Mobile Mapping System



Web Browser Interface for Real-time Data Logging and Application Software



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Courtesy from Topcon HK 20



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Courtesy from Topcon HK 22

Why is SDI necessary?

- Intuitively, it is a part of our daily live.
- For mutual understanding of the phenomena
(What do I mean = What do you mean)
- For data sharing
- For consistency in management
- For avoiding duplication in data capture
- For resource saving



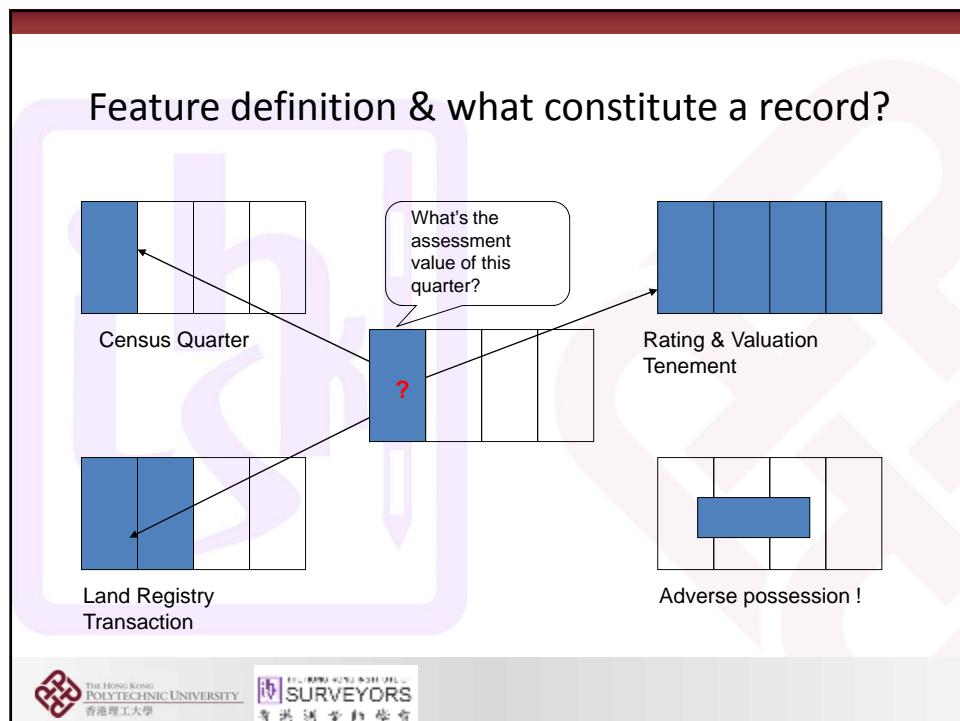
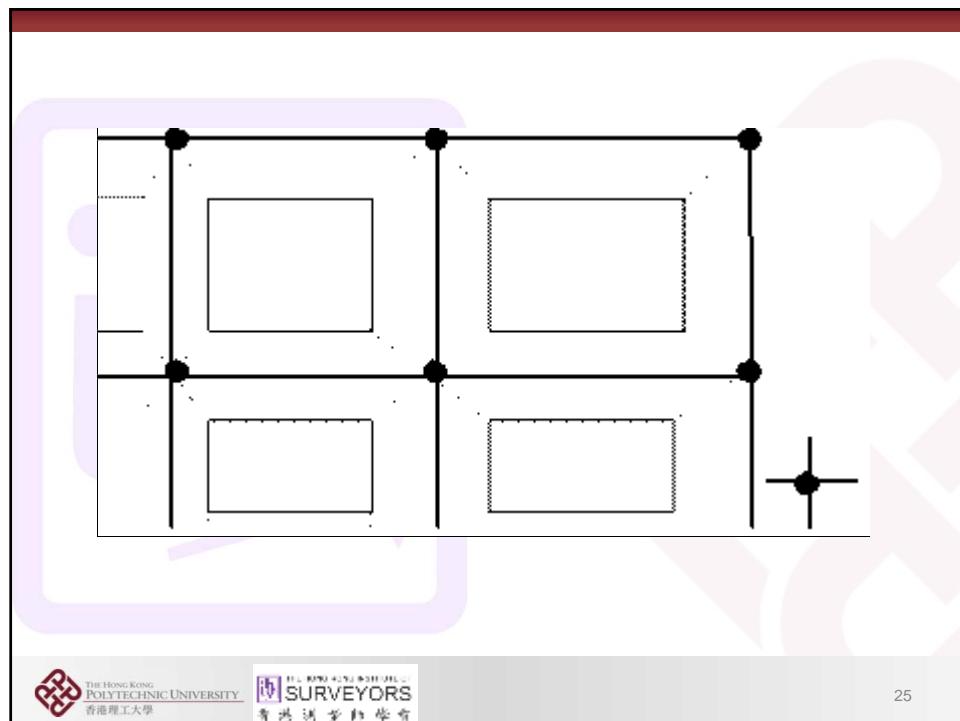
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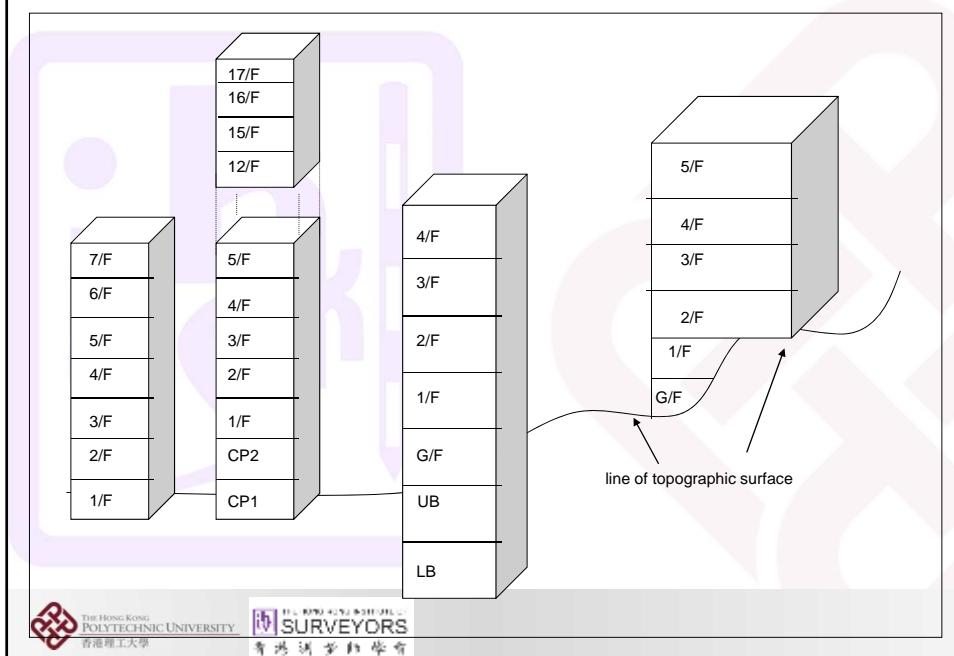
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23



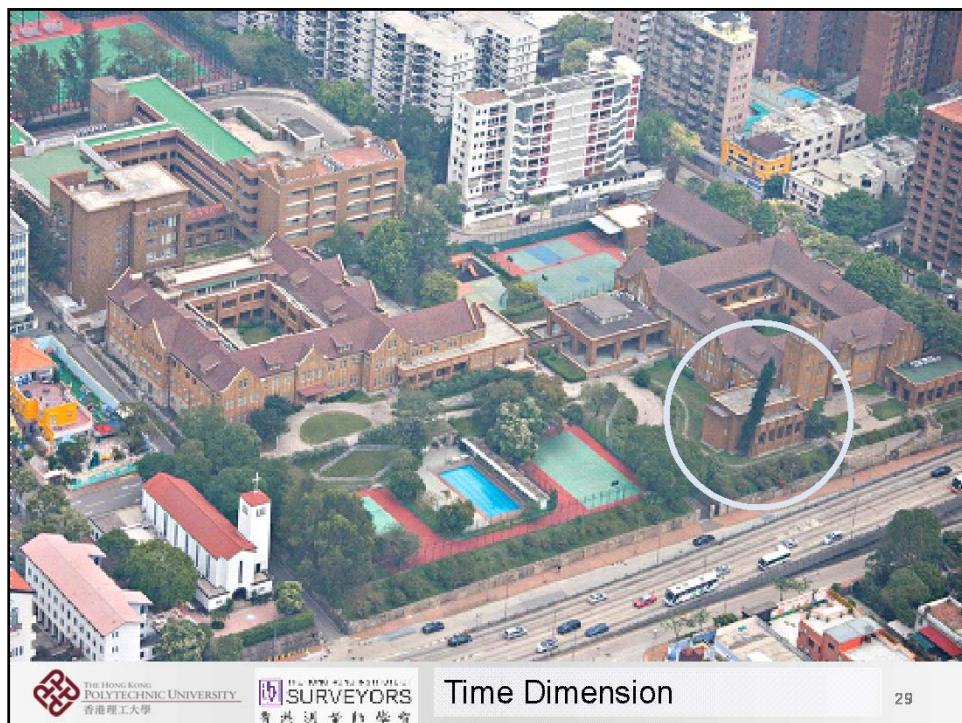


Floor Description Problem



SEE THE DIFFERENCE





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Time Dimension

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30

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Sydney, Australia, 11-16 April 2010

Spatial data

Spatial data consideration :

- Could we have free data accessible on web?
- Could we have aerial photos, terrestrial photos, or even specific photos of the tree?
- Could we have the law and regulation information accessible?
- Land Object concept in Cadastre 2014



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31

Who is responsible?

Intuitively, infrastructure should be provided by the Government.

Technically, the stakeholders:

- Spatial data suppliers / owners / custodian
- Users
- Integrators



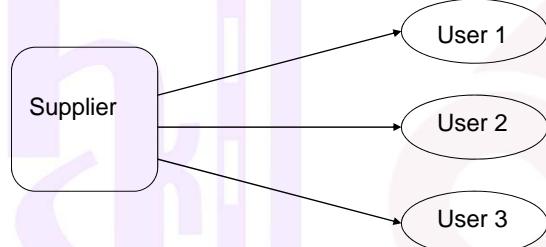
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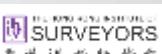
Model 1 – Supplier-User Uni-directional Relation



Digital mapping products in the early 1990's



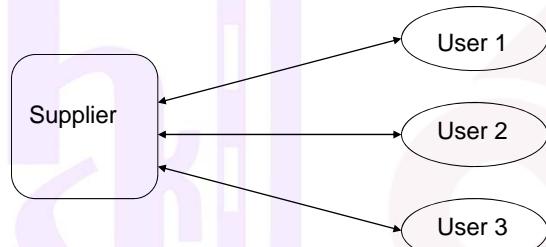
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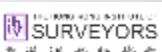
Model 2 – Supplier-User Bi-directional Relations



Digital mapping products in the late 1990's
feedbacks and updates



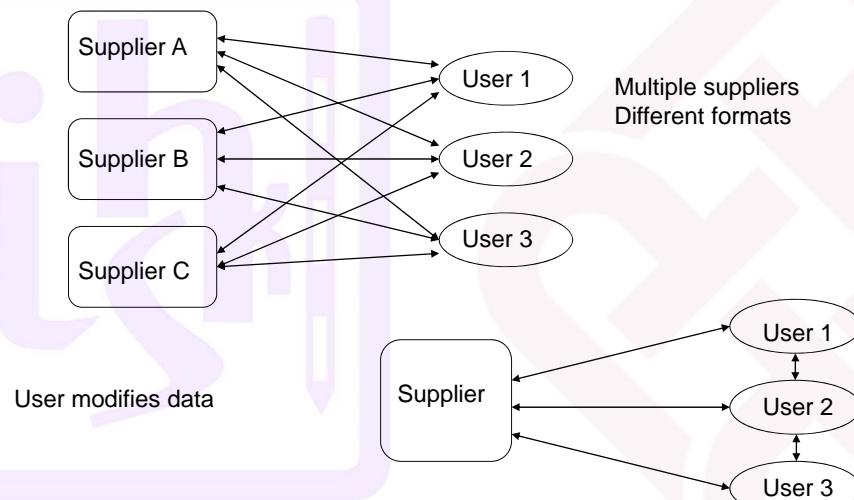
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34

Model 3 – Multi-Suppliers & Users Networking Relations



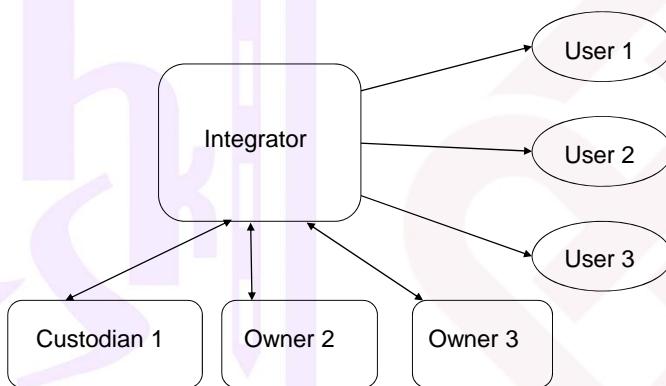
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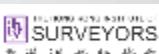
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Model 4 – Owner-Distributor-User Tripartite Relations



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36

The Way Forward

A SDI policy which unites:

Government organizations, Data custodians,
Policy makers, Professional bodies, Academics

- Intrasectoral development
- copyright and legal issues
- location privacy
- institutional reorganization
- education, research & development



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Position of spatial data within overall IT strategy

- Intrasectoral development
- copyright and legal issues
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Position of spatial data within overall IT strategy

- 5D Spatial Data

- DOM /TDOM True Digital Ortho Map
- DEM Digital Elevation Model
- DSM Digital Surface Model
- DLG Digital Line Graphic
- DRG Digital Raster Graphic



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39

