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Rich Internet GeoWeb for Spatial data Infrastructure

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Rich Internet GeoWeb Service for Spatial Data Infrastructure

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Content

- Geospatial Web Services for Spatial Data Infrastructure: issues and problems
- The Solution: Rich Internet Geospatial Visual Analytics Tool (RIGVAT)
- Use Case Scenario: Singapore property market
- Toward a User-centric Geospatial Web Services framework
- Q & A

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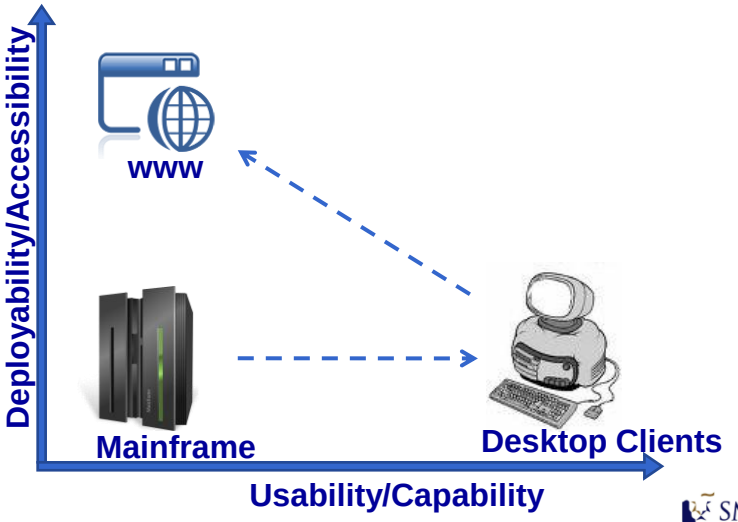
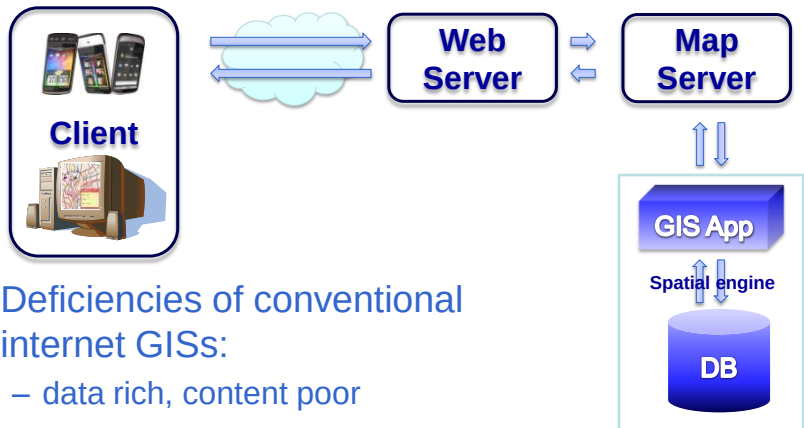
GSDI evolution…

- From desktop GIS to web-based GIS



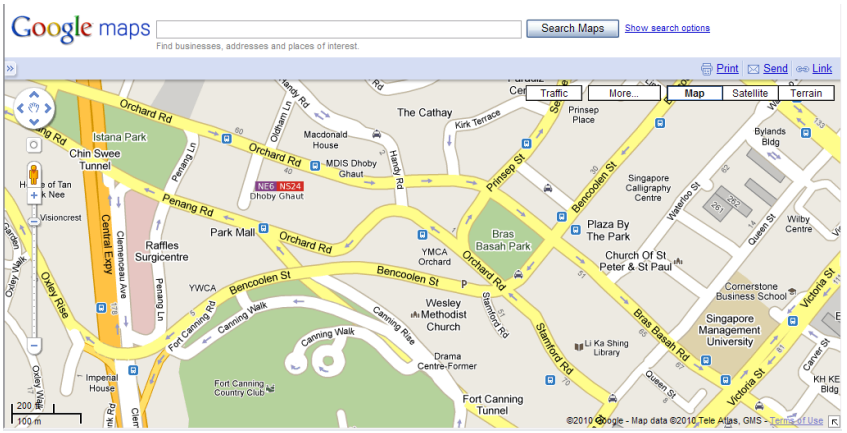
Conventional InternetGIS Architecture



- Deficiencies of conventional internet GISs:
  - data rich, content poor
  - poor usability
  - low client side capability
  - platform incompatibilities

What is Geospatial Web Service

- It all start with Google Earth in 2005



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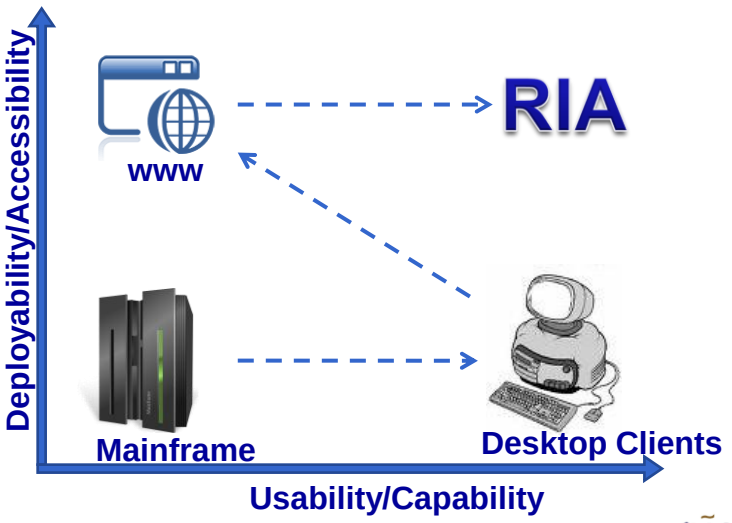
Geospatial Web evolution…



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Interactive API by GIS vendors

- Google Earth API
- Yahoo Flash API
- ArcGIS Flash API
- Mapquest Flash API

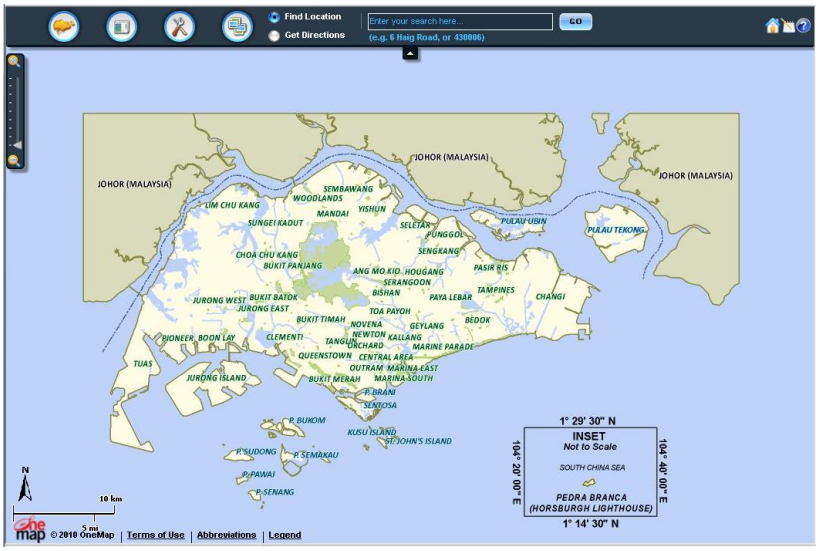
Google™

YAHOO!

MAPQUEST

ESRI

Geospatial Web 2.0



Limitation of API approach

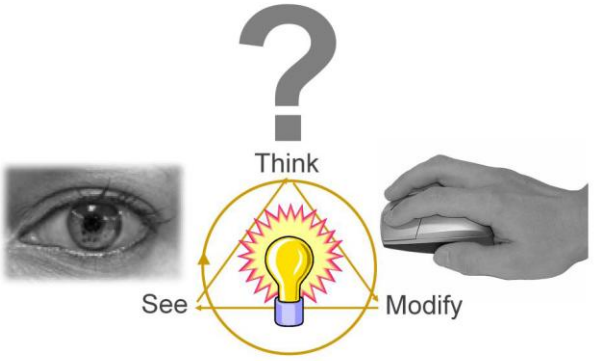
- Inflexible UI - you will quickly recognise sites built from the template. Both the look and feel and animation are a give away.
- The need to customise widgets - widgets have usually been built for a specific purpose, particularly the more advanced widgets such as query builder.
- Locked into a particular internet mapping services or GIS.

What is Geospatial Visual Analytics

- is the science of analytical reasoning and decision-making with geospatial information, facilitated by interactive visual interfaces, computational methods, and knowledge construction, representation, and management strategies

Geospatial Visual Analytics framework

- Maps are used to stimulate (visual) thinking about geospatial patterns, relationships and trends



Geospatial Visual Analytics framework

VISUAL THINKING

Exploration

Confirmation

VISUAL COMMUNICATION

Synthesis

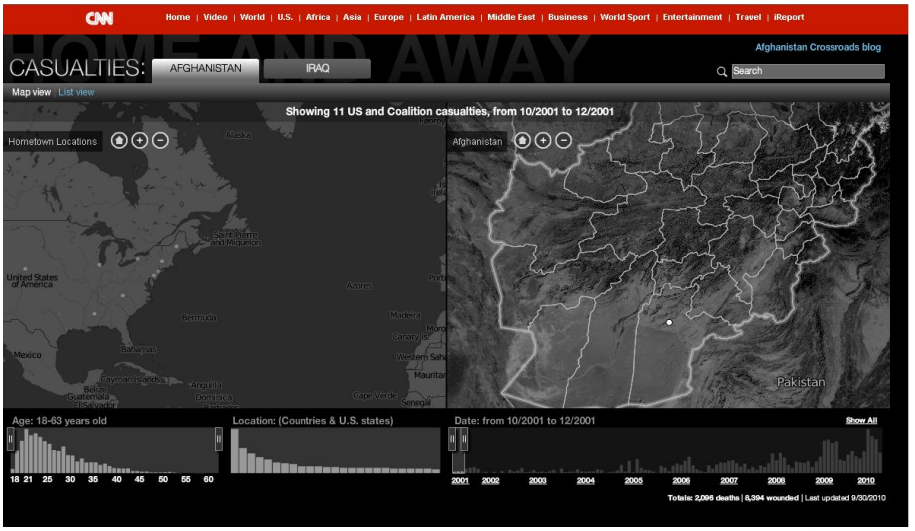
Presentation

PRIVATE REALM **PUBLIC REALM**

Why people Geospatial Visual Analytics

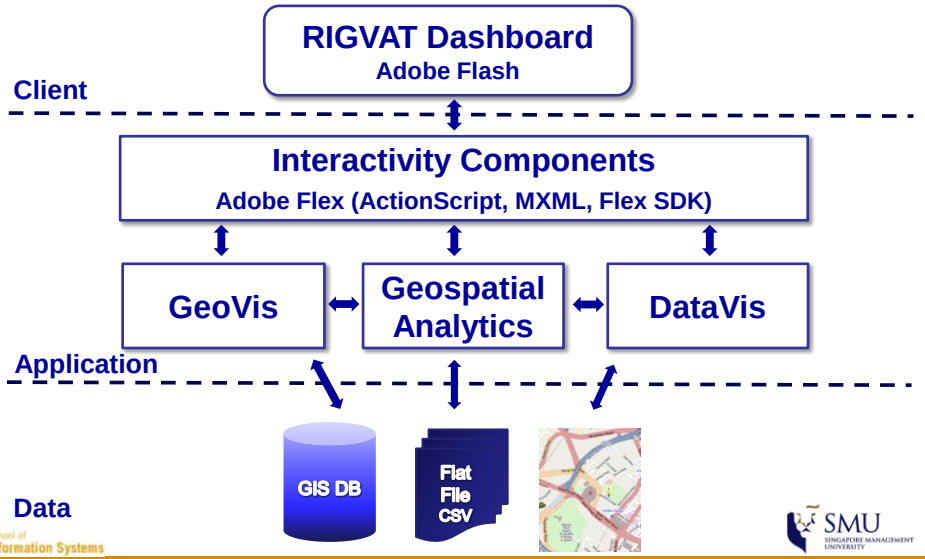
- People use visual analytics tools and techniques to
  - Synthesize information and derive insight from massive, dynamic, ambiguous, and often conflicting data
  - Detect the expected and discover the unexpected
  - Provide timely, defensible, and understandable assessments
  - Communicate assessment effectively for action

Example 1



RIGVAT framework

- Rich Internet Geospatial Visual Analytics Tools



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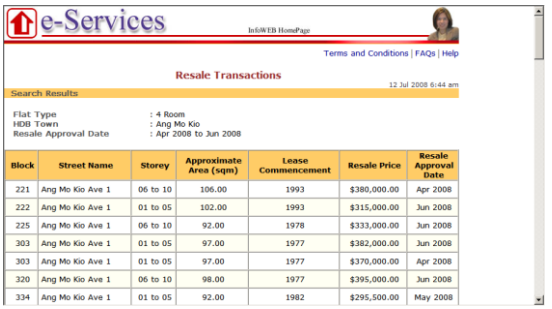
How property data being distributed



e-Services

InfoWEB HomePage

Terms and Conditions | FAQs | Help

Resale Transactions

12 Jul 2008 6:44 am

Search Results

Flat Type : 4 Room
HDB Town : Ang Mo Kio
Resale Approval Date : Apr 2008 to Jun 2008

Block	Street Name	Storey	Approximate Area (sqm)	Lease Commencement	Resale Price	Resale Approval Date
221	Ang Mo Kio Ave 1	06 to 10	106.00	1993	$380,000.00	Apr 2008
222	Ang Mo Kio Ave 1	01 to 05	102.00	1993	$315,000.00	Jun 2008
225	Ang Mo Kio Ave 1	06 to 10	92.00	1978	$333,000.00	Jun 2008
303	Ang Mo Kio Ave 1	01 to 05	97.00	1977	$382,000.00	Jun 2008
303	Ang Mo Kio Ave 1	01 to 05	97.00	1977	$370,000.00	Apr 2008
320	Ang Mo Kio Ave 1	06 to 10	98.00	1977	$395,000.00	Jun 2008
334	Ang Mo Kio Ave 1	01 to 05	92.00	1982	$295,500.00	May 2008

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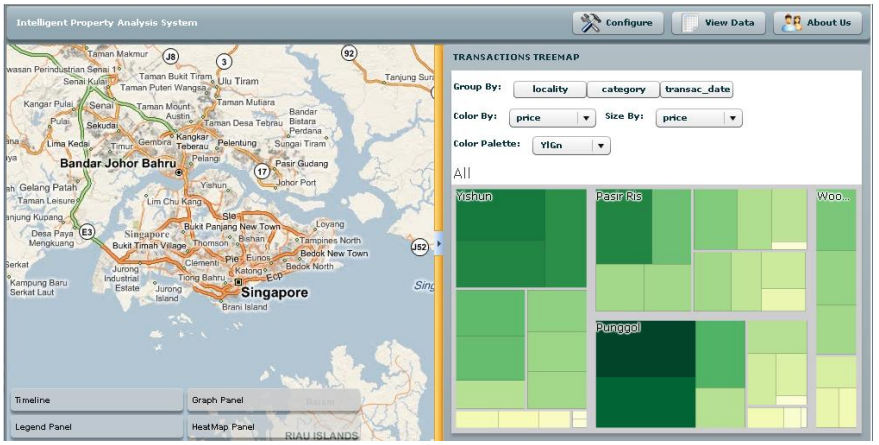
Multiple Coordinated Views

- Pin map + Treemap



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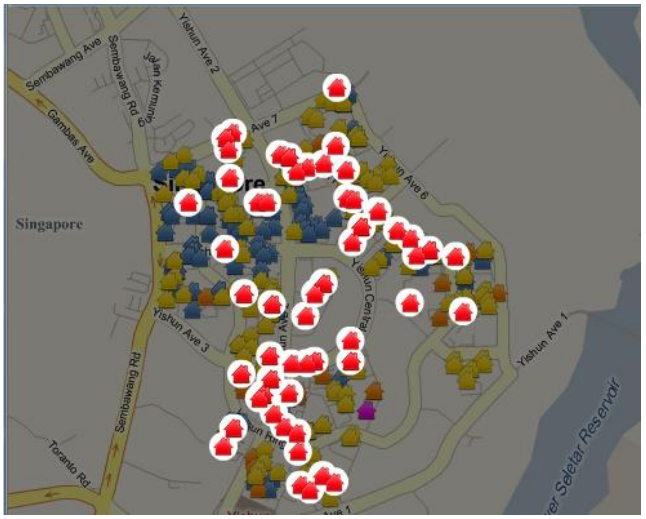
Highlighting

- Now, you can see the trees in the forest



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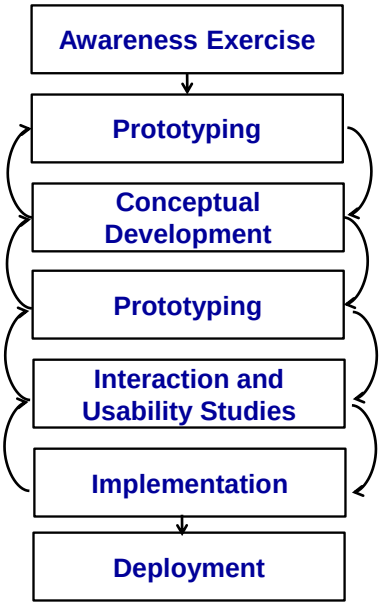
The User-Centered Design Process



In Conclusion

- Geospatial Visual analytics is the next step in visually supporting solving (geo)problems
- Geospatial information solution development should go beyond conventional GIS and system integration approaches