Positioning Services in Web 2.0

TS 7C – New Techniques and Sensors for Positioning
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Strategic Integration of Surveying Services
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Introduction

- Person of the Year 2006 of Time Magazine --YOU.
- "You control the Information Age. Welcome to your world."

- 2006 is a story about community and collaboration on a scale we never seen before
- The Web 2.0
- The Information & Communication Technology (ICT) as part of everyone's life
- A New Challenge

Agenda

- Trends and Challenges of Web 2.0
- Impacts to Surveying Industry
- New Ways to provide Positioning Services
- ADD YOUR IDEAS HERE

Trends & Challenges

- Digital data generated
  - IDC (2007)
    - 2006: 161 exabytes (1 exabytes = 1 billion GB)
    - 2010: 988 exabytes
- Digital Convergence
  - Everything in 1s and 0s
  - Moving towards the same network – the Internet

Image Source: OGCIO, HKSAR Government
The Digital 21 Strategy 1998

Trends & Challenges

- The World Connected as One
  - e.g. Second Life

Image Source: Second Life - http://secondlife.com

Image Source: Reuters - http://secondlife.reuters.com

Image Source: BBC News - http://news.bbc.co.uk

Trends & Challenges

- The Emergence of Web 2.0

Image Source: "The huge cloud lens bubble map web2.0" by Angermeier, M. (2005)

- *"Web 2.0 is a set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet – a more mature, distinctive medium characterized by user participation, openness and network effects."* [Musser et al (2006)]

Trends & Challenges

Image Source: eBoy XV - http://hello.eboy.com/eboy/

Image Source: web2logo.com - http://web2logo.com/

Trends & Challenges

- User-centric
  - YOU create and manage it
    - YouTube, Blogs …
  - "Collaborative intelligent" (or "Collaborative stupidity")
    - Wikipedia …
  - Interactions between users
    - Tags, Flickr …
  - "The Long Tail"
    - Amazon, eBay …

Trends & Challenges

- The way of Information Sharing
  - Sharing changed the Information flow
    - One-way broadcast vs. Responsive interactions
  - RSS & Perma-links made Sharing easier
    - Feed Subscriptions
  - The Wiki-mode

Image Source: BusinessWeek - http://www.businessweek.com

Trends & Challenges

- Copyright vs. Copyleft
  - Clarify & Protect the rights of use, modification and redistributions
  - Rebalance of rights for authors and users
- GNU License terms
  - Used by Wikipedia
- The Creative Commons project
  - "No rights reserved"
  - "Some rights reserved"
  - Share, reuse, and remix – legally

Image Source: Wikipedia

Trends & Challenges

- The Geospatial Battlefield
  - Google, Microsoft, Yahoo… again
  - Location Search, Open Geospatial data & service platform for mash-ups
  - Stimulated development of innovative applications
- Location-Based Services
  - Location-specific information: 2nd in the most-wanted list (2005)
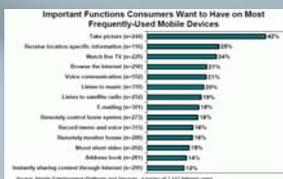 - GPS – the next "must-have" item for mobiles

Important Functions Consumers Want to Have on Most Frequently-Used Mobile Devices

Image Source: Parks Associate (via ZDNet)- http://blogs.zdnet.com/ITFacts/?p=8552

Trends & Challenges

- Everything 2.0
  - Science 2.0, Enterprise 2.0, Management 2.0 …
- Where are the Surveyors ??
- Where 2.0
  - "Location is going everywhere"
- Who to lead the positioning technology?!

Image Source: Brimicombe (2002) "GIS: Where are the frontiers now?"

Image Source: Where 2.0 Conference - http://conferences.oreillynet.com/where2007/

Impacts to Surveying Industry

- Review and Find our New Roles under Wikinomics
  - Mass collaboration transforming the services and changing business models of every industry
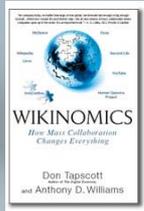 - We will have our New Roles

Image Source: -
http://www.wikinomics.com

Impacts to Surveying Industry

- Evolution to Positioning Services
  - Active positioning will take over the passive measurements
  - ICT integrated into the core of positioning services

Image Source: Table of Surveying, from the 1728 Cyclopaedia, Volume 2
(via Wikimedia Commons) http://commons.wikimedia.org/wiki/Main_Page

Impacts to Surveying Industry

- Paradigm Shift: User-Centric
  - From One-way services for Professionals
  - To Innovative & Dynamic applications to all
  - The Web 2.0 Service model:
    - Build a critical mass of users
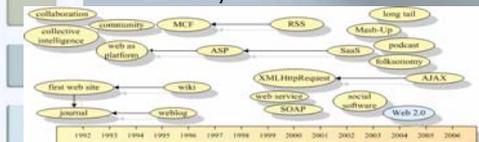   - Be ready for the "Long Tail" users
    - Get everyone involved

Image Source: -
http://www.scill.de/

Impacts to Surveying Industry

- Paradigm Shift: From Focus to Pervasive
  - Let the services works together
  - Mash-ups and Strategic Integration
  - GPS/GIS/RS integration cannot be realized without the Internet
  - Key of Success: Comprehensive Spatial Data Infrastructure + Positioning Infrastructure for the Community

New Ways to provide Positioning Services

- More than Measurements
  - We can do more than these…
- Total Positioning Solution
  - Automated service to provide accurate position and location-based information to anyone, anytime, anywhere
- New sensors and technologies:
  - Pseudolites, Cellular phones, Wi-Fi positioning, RFID …
- Surveyors, are you ready??

Image Source: Survey & Mapping Offices
-http://www.landsd.gov.hk/mapping/

New Ways to provide Positioning Services

- Services in the Trend of Web 2.0
  - Integrating the positioning services with the Web and Internet
  - Adopt ICT Practices: e.g. Ntrip (Network Transport of RTCM via Internet Protocol)
  - Adopt the Web 2.0 core concepts:
    - User-centric, facilitate sharing and collaborative uses …
  - Don't be outdated!

Image Source: veryweb -
http://www.veryweb.it

New Ways to provide Positioning Services

- Collaboration in building the Positioning Infrastructure
  - FIG Commission 5: Proposed "Positioning Infrastructures" Working Group
    - *Investigate these technologies ... of the future positioning infrastructure*
    - GNSS, CORS networks, pseudolites, RFID, Wi-Fi, Assisted-GPS ...
    - Establish the contact with telecom & ICT partners

Conclusion

- ICT Development induce cultural changes
- Trends and Challenges of Web 2.0
- Impacts to Surveying Industry
- New Ways to provide Positioning Services
- Positioning Service Providers ...
  - Apply technologies in an innovative way
  - Nurture revolutionary mindsets
  - Proactive in developing strategies for new business models
  - Pragmatic in supporting clients and serving the community

-- THANK YOU --

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