



Geospatial Information and the Knowledge Economy

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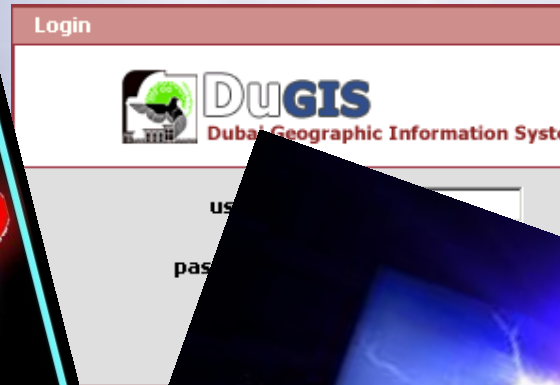


*Map Middle East Conference
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The Knowledge Economy

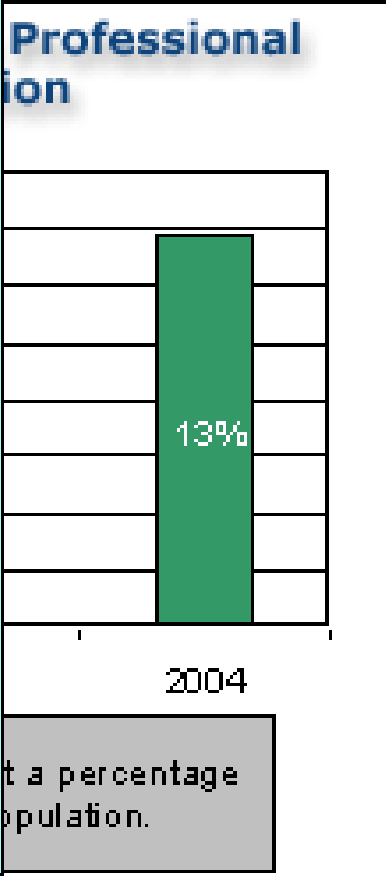
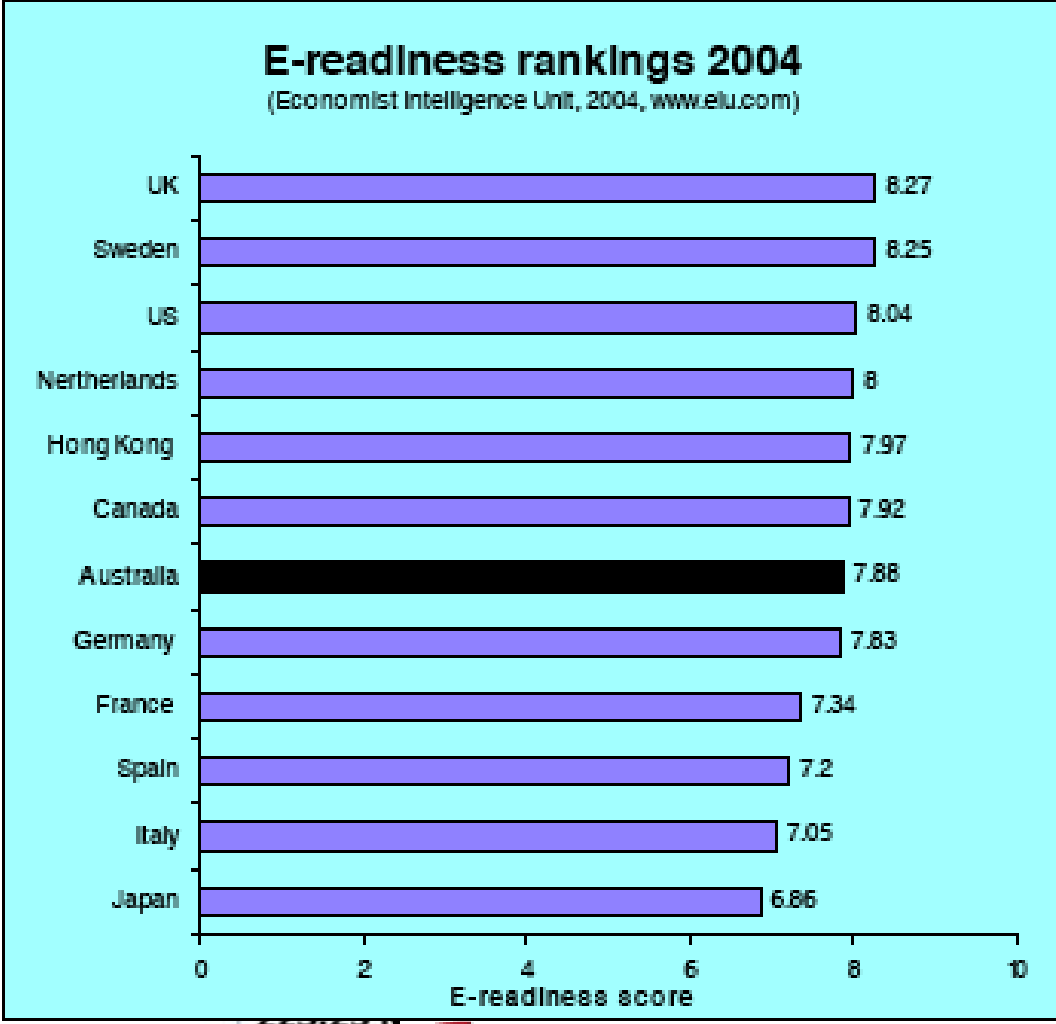
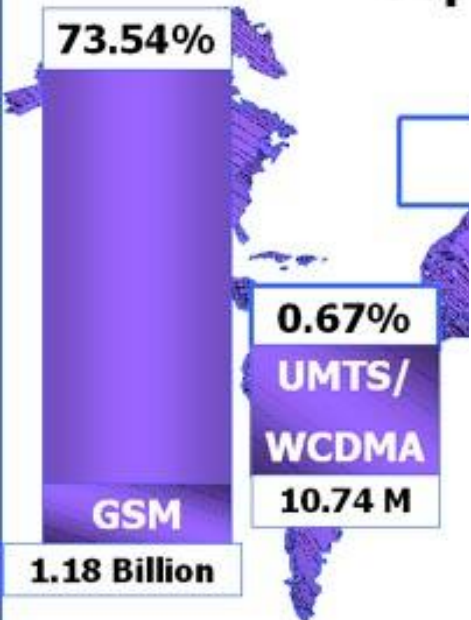
✧ Using *knowledge* to produce economic benefits



Measuring the Knowledge Economy



World Cellular Database
Sept '04



Characteristic Factors

✧ Knowledge

✧ Globalization

✧ Economic Dynamism

✧ Transformation to a Digital

✧ Technological Innovation Capacity

- IT Employment
- Education Levels

- Export Orientation
- Foreign Investment

- No. of Fast-Growing Firms

- Sta
- % of Pop
- Technolo
- # “.com”

- Scientists/Engineers in Workforce
- Patents issued
- Industry Investment
- Venture Capital



TODAY...

- Data-rich environment in more developed nations, with focus on next generation of data discovery and location-based services
- Interoperability and standardized products
- E-commerce, E-government and E-governance
- Growing concerns over “Digital Divide” between Rich vs. Poor ; Urban vs. Rural

... in surveying,
administration

... digital mapping
... packages
... collection

... ment
... working projects

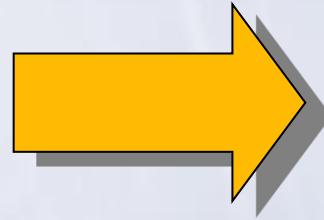
... sharing and

✧ Stage 4 (circa 1998 onwards)



Contributions

**Geospatial
Information**



**The
Knowledge
Economy**



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Contributions of GI to the Knowledge Economy

Criteria	Contribution
<i>Knowledge Jobs</i>	High tech employment in remote sensing, mapping and surveying hardware; software development; IT consulting; application development; geospatial data collection; and project/program management.
<i>Globalization</i>	Companies in Europe, North America and Australia are partnering with IT and mapping firms in India, China and elsewhere to take advantage of a highly qualified workforce prepared to work at very competitive rates of pay.

Contributions of GI to the Knowledge Economy

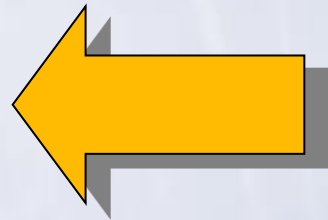
Criteria	Contribution
<i>Economic Dynamism and Competition</i>	<p>SDI evolution encourages creation and growth of new high-technology companies:</p> <p>Stage 1 and Stage 2 -- New hardware, software and data collection firms to support government mapping and data collection projects.</p> <p>Stage 3 -- Focus shifts to IT consulting firms as interest increases in data maintenance, enterprise GIS; data distribution and interoperable systems.</p> <p>Stage 4 -- Emphasis on applications development, specialized data collection, and location based services.</p>

Contributions of GI to the Knowledge Economy

Criteria	Contribution
<i>Transformation to a Digital Economy</i>	<p>Real property information component now driving applications in E-Government.</p> <p>Data related to address-matched road networks driving applications in Location-Based Services and E-Commerce.</p>
<i>Technological Innovation Capacity</i>	<p>New capital investments and returns from intellectual property tend to be focused on geospatial firms involved in hardware / software development, location-based services, and situations where the firm has a monopoly on management and distribution of key datasets.</p>

Contributions

**Geospatial
Information**



**The
Knowledge
Economy**



"It is people who will shape the future, not machines or capital."

- His Highness Sheikh Mohammed Bin Rashid Al Maktoum

Generation Title	Born between...	Characteristic	Comments
GI Generation	1901 - 1924	Civic	Responded to social crisis (WW2); Focussed on common good, community, and “rebuilding the world”.
Silent Generation	1925 - 1942	Adaptive	Flexible; sensitive to diversity (told by parents during WW2 ‘Stay out of the way, we’re busy’).
Baby-Boomers	1943 - 1960	Idealistic	Spiritual awakening; Beginnings of global awareness; Aiming to ‘carry things forward’
Generation X	1961 - 1981	Reactive	Cynical, pragmatic, questioning
Millennials	1981 - 2000?	Civic	Optimistic, success-oriented, conservative

- from work by Neil Howe and William Strauss



The “Millennial Students” now moving into the Workplace

- ✧ Based on the research of Neil Howe and William Strauss.
- ✧ Newest books – ***Millennials Rising – the Next Great Generation*** and ***Millennials Go to College: Strategies for a New Generation on Campus***
- ✧ *“The Millennials say they want to use technology. They want to use the web as a means to access information and one another. They want to work on solving problems that matter and they want to do this in collaborative teams.”*



The Millennial Generation

- ✧ Sociable, optimistic, talented, well-educated, collaborative, open-minded, influential, and achievement-oriented.
- ✧ Have always felt sought after, needed, indispensable.
- ✧ Arriving in the workplace with higher expectations than any generation before them.
- ✧ Well-connected -- if an employer doesn't match their expectations, they can tell thousands of their colleagues with one click of the mouse.



Unlike any other youth generation in living memory....

- ✧ Most "structured" -- involved in organized activities since the age of 3
- ✧ More affluent and better educated
- ✧ More ethnically diverse
- ✧ Accompanied by "Parent Advocates"
- ✧ Manifesting a new array of positive social habits: **teamwork, achievement, modesty, good conduct**



The Millennials...

- ✧ Challenge our perceptions re self-sufficiency and self-direction
- ✧ Have difficulty managing time, making good choices
- ✧ Highly competitive yet cooperative
- ✧ More confident and optimistic about their future
- ✧ Have high expectations re: service & quality



The Millennials...

- ✧ Are trusting and accept authority
- ✧ Follow rules -- juvenile crime rates down.
- ✧ Want independence, yet display dependence
- ✧ Looking for a “quick fix” to every problem.
- ✧ “Drive-through mentality” – Things must be *quick, easy to access, and “anonymous”*.



Implications to Future Geospatial Services?

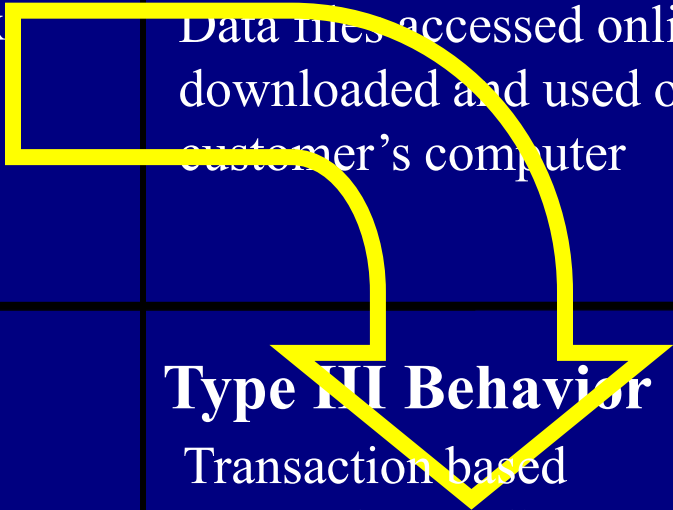
Must be...

- ❑ Quick
- ❑ Anonymous
- ❑ Authoritative
- ❑ Delivered “Just-in-Time” (“Use it and lose it”)
- ❑ Easy to share on-line with friends and colleagues.



Changes in On-Line Usage Behaviour

Data Usage	Data Access	
	Off-line	On-line
Off - line	Type I Behavior Data ordering by mail, fax or telephone for use on customer's computer	Type II Behavior Data files accessed online downloaded and used on customer's computer
On - line		Type III Behavior Transaction based approaches to discovery, access and on-line usage of geospatial and associated attribute data



QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Expecting Authoritative Data

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Geocoding and Sharing Experiences



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Geospatial Information & the Knowledge Economy

- ✧ Are current SDI services oriented to continue affecting Knowledge Economy Indicators?
- ✧ Will the “look and feel” of SDI services change as expectations of Millennial Generation begin to dominate the market?
- ✧ What indicators will determine the success or failure of SDI over the next 10 years?
- ✧ Roles of Government as SDI evolves?



