

**The Future Role of Governments for the
Future Geospatial Information Societies
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Greetings

Mr Chairman,

Distinguished delegates,

It is my pleasure to join you here at the 2nd High Level Forum on GGIM. The Singapore Land Authority and I are deeply honored to be given this opportunity to share with you our thoughts on the future role of governments for the future geospatial information societies.

Future Role of Governments

2 Only 10 years ago, Google Maps did not exist. Today, consumer-based mapping and

location-based services are embedded in everyday life, thanks to companies such as Google, Microsoft, Apple, Amazon and ESRI. The internet, social media, and location-based services are now new sources of geospatial information.

3 As geospatial technology moves mainstream, geospatial information is increasingly being recognized around the world as a strategic resource and tool for social, economic, and sustainable development.

4 At the same time, technological developments have exponentially increased the volume of geospatial information available. 50 years ago, it was thought that only public agencies could collect and use geospatial information. Today, this thinking is obsolete.

Geospatial information is no longer the exclusive preserve of the government.

5 I believe that these trends in geospatial technology will create new opportunities for governments in providing and managing geospatial information.

Geospatial Data Facilitator

6 Today, many governments and national mapping agencies around the world, including Singapore, have implemented National Spatial Data Infrastructures (NSDI). Map portals have also been developed to share high quality geospatial data. Governments are mostly perceived as the authoritative providers of accurate geospatial data.

7 In Singapore, while public agencies have made a concerted effort to contribute more than 400 data layers to our NSDI, this is just the “tip of the iceberg”. Why do I say this? In 2012, there were more than 2.4 billion internet users¹ and 6.2 billion mobile subscribers² worldwide. In the third quarter of 2012, global mobile penetration reached a peak of 91%. What if every internet user and mobile subscriber starts to, consciously or unconsciously, volunteer location-based information? We would immediately have close to 9 billion information sources! And we have not even counted the sources from the business and the non-government sectors!

8 You may see this as either a half-full or half-empty glass, either as a huge problem or an

¹ <http://www.newmediatrendwatch.com/world-overview/34-world-usage-patterns-and-demographics>

² <http://sourcedigit.com/1264-global-mobile-penetration-q3-2012/>

emerging opportunity. I prefer to be optimistic. There is clearly significant untapped potential for growth. To realize it, or if you like, to uncover more of the iceberg, governments need to evolve from collecting data and providing information to facilitating data and information. Today, I want to share with you 3 key areas where this can take place.

Geo-Data Platform Infrastructure

9 First, governments can facilitate a **geo-data platform infrastructure** where data can be shared and used among the public, private and people sectors. This is no different from how governments build infrastructures to support economic and social development, be they at national, regional or local levels. Roads, railways, airports are built to facilitate the free movement of people and goods. Offices,

factories and warehouses are built to house economic activities. Similarly, the government can build a geo-data market to facilitate the free movement of data and information.

10 In this market, geospatial data, not just from the governments themselves, but from all sources, can be shared among the government agencies, businesses and individuals. In other words, this is not one way traffic; it is a multi-directional flow, with super highways and high-speed trains, with mega exchanges and giant depots. Just like the transportation and real estate market systems, we also need to pre-empt congestions, choke points and space crunch in the data market system. Hence, governments would need to create a strong policy and legal environment to facilitate the smooth workings of this information market.

Proliferating the Innovative Use of Geospatial

Data

11 I am not about to assume all the creative brains are within the government. Yes, we may have our fair share, but it is probably the business and people sector which has the greatest motivation to develop innovative solutions. Just look at the hundreds of thousands of apps³ on Apple Apps Store and Android Play Store, how many are from governments? Just look into your smart devices, how many of them are developed by governments?

12 To unleash the power of geospatial data, let the business and people sector get their hands on them. Let us as government encourage and incentivize them to develop geo-solutions. In Singapore, we are still thinking of how best we

³ http://news.cnet.com/8301-1035_3-57521252-94/can-apples-app-store-maintain-its-lead-over-google-play/

can do it. Some interesting ideas have already emerged in a hackathon recently organized by a private company and supported by government agencies. In the hackathon called Urban Prototyping Singapore, or UP Singapore, many private and public organizations contributed data to a unique and unprecedented sandbox. Over 10,000 work-hours, 250 creative brains created 30 solutions⁴ to improve urban sustainability, to improve the way we live as a Smart City.

13 Here's another example of the powerful innovation possible, when government and commercial data is unlocked and used by talented thinkers to address real-world challenges. Last year, New York organised a hackathon called "Reinvent Green"⁵. The theme was also on sustainability. City agencies and

⁴ <http://www.upsingapore.com/up-singapore-2012/>

⁵ <https://www.hackerleague.org/hackathons/reinvent-green>

other organizations opened up hundreds of datasets through the NYC open data website⁶. The hackathon generated 15 ideas to build digital tools and applications to empower New Yorkers in leading greener and greater lives.

Data Interoperability and Authenticity

14 As more data flow on the information highway, there is a need to overcome issues like interoperability and authenticity. Geospatial technology without guiding policies and quality standards definition is like driving a car without a map or street signs. The government must help to steer the car by putting in place the data policies and standards. But counter-intuitively, crowd-sourcing can also be a key driver to data authenticity.

⁶ <https://nycopendata.socrata.com/>

15 This reminds me of a case study I read recently. -Landgate⁷. Landgate is the government authority responsible for land and property information in Western Australia. It manages a huge database of geospatial data which needs to be kept up-to-date. So, Landgate innovated and built a crowd-sourcing map where users from different agencies could review and authenticate the changes made to the geospatial data. It completely re-distributes the effort to maintain content to its users. This is an interesting concept which can potentially reduce the government's spending on maintaining data.

Capacity Building

16 Finally, beyond putting in place institutional and infrastructural supports, there remains a more fundamental role for the government to

⁷ <http://opengeo.org/publications/landgate/>

play. As geospatial information and technology becomes an important underpin of national development, governments will need to invest in capacity in areas such as research and education. We need strong government leadership in these areas to accelerate the geospatial agenda and overall increase the number of geospatial users and innovators. This will, in turn, spur the demand for more geospatial-related products and services.

17 From this perspective, in the days ahead, governments will need to collaborate more with academic institutions and industry to develop a deeper pool of talent – geospatial experts to be our next generation of thought leaders, technologists and users.

Closing

18 Today, I have offered some ideas on the future role of governments in geospatial information societies. I hope I have sown the seeds for further ideas and thoughts on how governments can play, not a greater, but an OPTIMAL role in ushering in the next era of the geospatial world – a world where the presence of geospatial information is not noticed but the absence is.

19 We have come some way down the geospatial road, but we still have plenty to look forward to. Going forward, new trends of geospatial technologies and information will continue to emerge. The pace of development can only intensify.

20 There will be more complex challenges. But I believe governments will evolve successfully to overcome them. We will improve frameworks. We will grow capabilities and we will forge new partnerships. But we need not do this alone. GGIM is well-poised to help world governments learn from each other, share best practices and collectively, unlock the full potential of geospatial information.

21 On this note, I thank you for your attention.