CONFERENZA 2013 AMFM GIS ITALIA

How BIM can benefit from *the vast amount of* geospatially enabled datasets

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(Bart De Lathouwer)

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Topics

- Introduction to the OGC

  - Standards work

- Relationship GI - BIM

- How BIM can benefit of geospatially enabled datasets

  - Use of up-to-date, authoritative, interoperable, cross-border, reference geo-information in BIM projects

- Looking ahead

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What most people think about standards work!

Alphabet soup

- WMS WFS CityGML WPS WMTS OWS TC PC ORM ER ISO 19115 19139 OpenLS KML NetCDF GeoXACML SE LandXML ebRIM GeoAPI PUCK SWE GeoSMS WKB WKT WCS GML 19136 CS-W GeoSPARQL SOS SensorML WaterML SLD CEN TJS GEOSS CRS WCPS SES GMS SFS CTS CAT FGDC CSDGM 07-110r4 O&M

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Standards are like parachutes they work best when they're open.

Mary McRae, OASIS

OGC

- **The Open Geospatial Consortium (OGC)**

  – Not-for-profit, international consortium of 467 industry, government, and university members

- Founded in 1994

- Work is based on collaboration and consensus!
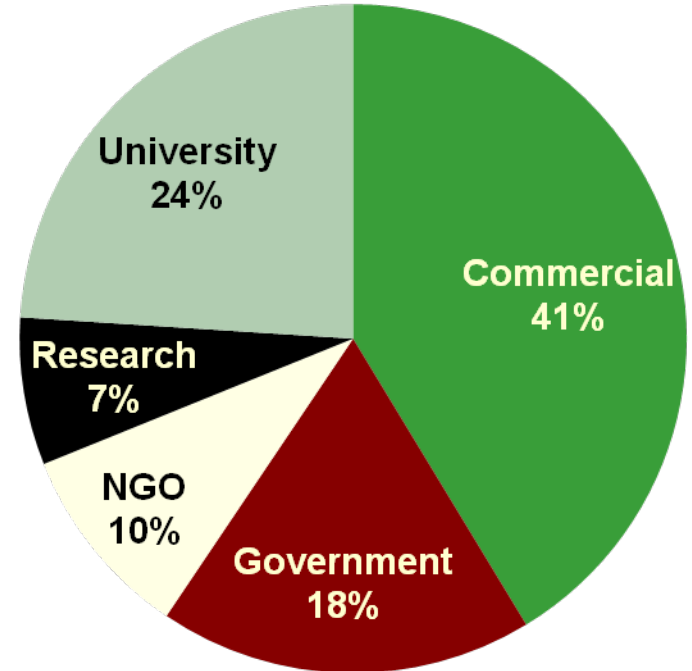
OGC Mission

Our core mission is to deliver interface specifications that are openly available for global use, and which are used by Geospatial data producers and software transparently to the users.

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OGC at a Glance

Not-for-profit, international voluntary consensus standards organization; leading development of geospatial standards

- **Founded in 1994.**

- **467 members and growing**

- **38 standards**

- **Hundreds of product implementations**

- **Broad user community implementation worldwide**

- **Alliances and collaborative activities with ISO and many other SDO's**

University 24%

Commercial 41%

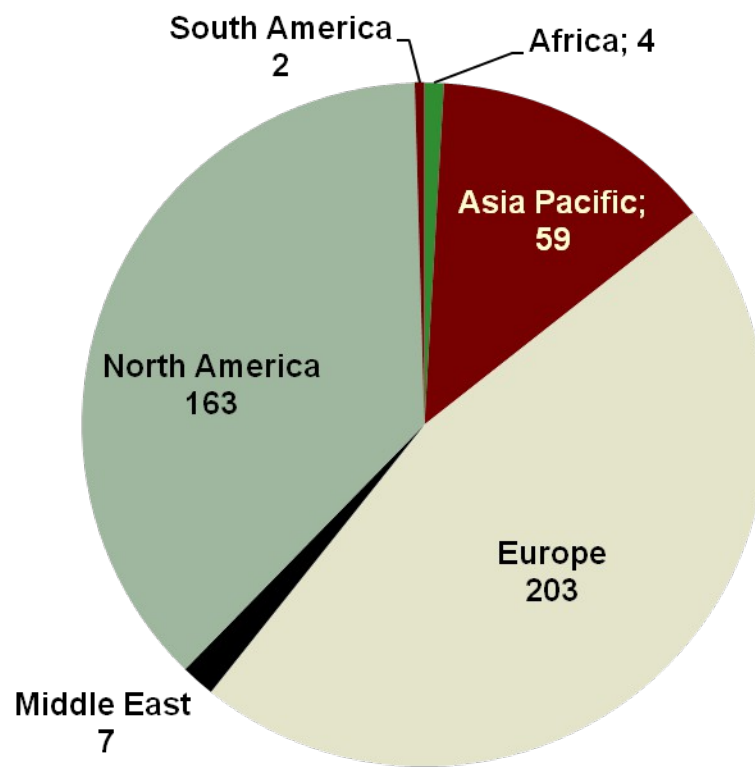Research 7%

NGO 10%

Government 18%
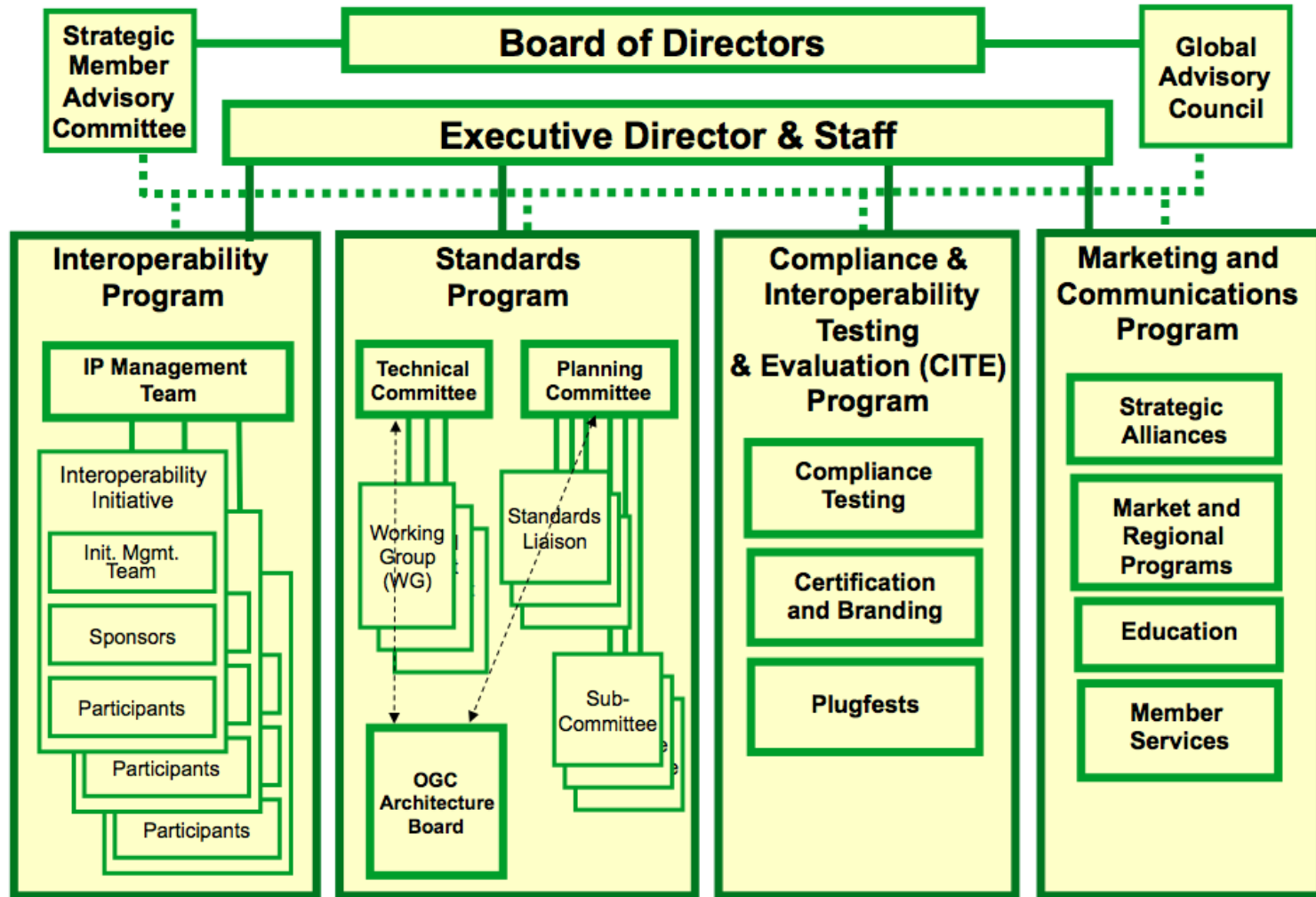
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Pie chart:
- South America 2
- Africa; 4
- Asia Pacific; 59
- Europe 203
- Middle East 7
- North America 163

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OGC Programs

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BIM – GI By Scale

Geospatial — 36000 ft

Civil Eng. — 5000 ft

AEC — 500ft

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Photo by MOMA Design
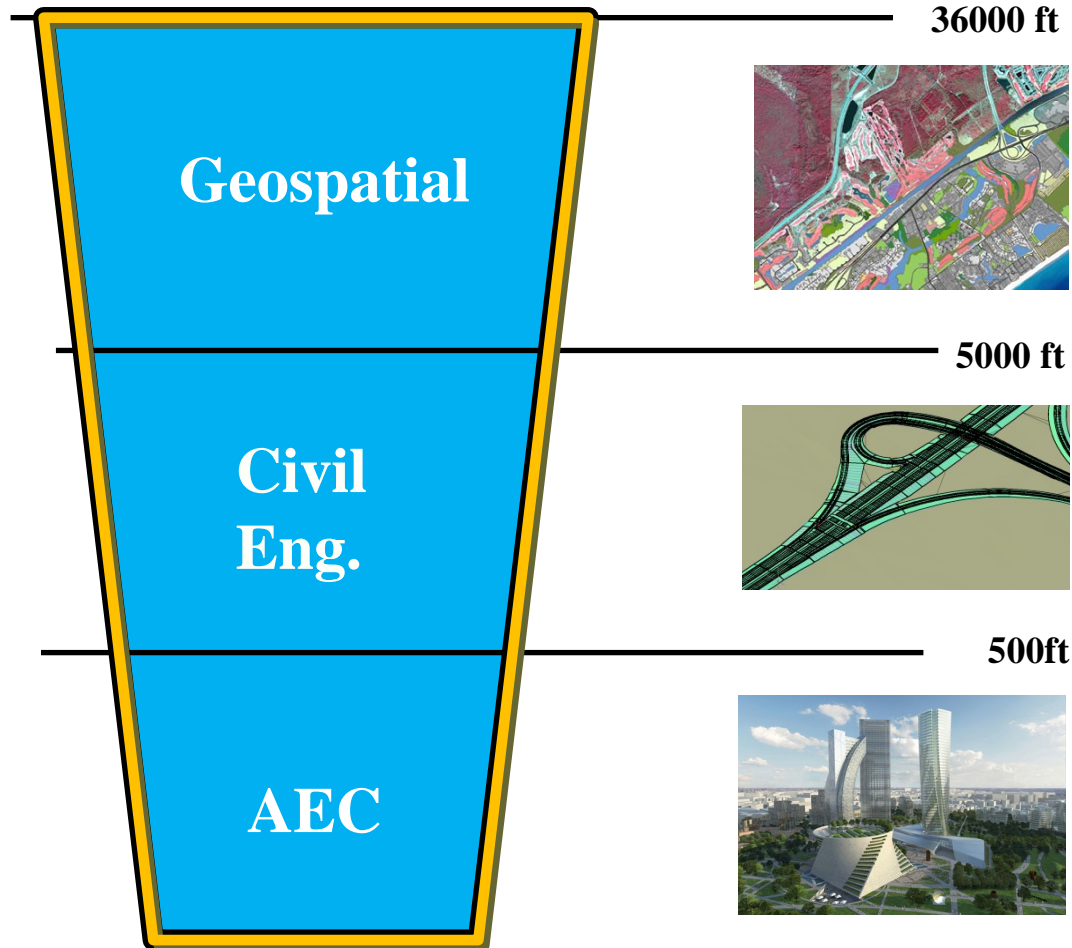
Some observations from the Building world

- Moving from human readable formats to machine readable formats
  - 30% productive, 70% unproductive (moving stuff)
  - Building industry now implementing IT (on site)

- BIM
  - 12%+ failure costs
  - Technology / mind set
  - Solved on site
  - Try to do more before, than during (costs increase)
  - Currently delivered as bulk on site, shift towards prebuilt
  - No vendor lock in
  - "Knowledge loss" in workflow
  - Little BIM is happening, Big BIM not yet
  - Information exchange not service oriented (sneaker net)

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BIM and GI

- MoU
  - ISO / TC 211, SC 13, buildingSMART International, OGC
- BIM is happening!
  - IFC for Design – City GML for Conceptual Design and Management
  - LandXML for Land and Infrastructure Development
- BIM to benefit of GI infrastructure
  - Experience with WebServices (3DIM) (INSPIRE)
  - INSPIRE Catalogs to find authoritative Geospatial information
- BIM to benefit of geospatially enabled datasets
  - Better contextual information, see the bigger picture
  - Simulation Capabilities
- Open Data
 - PSI Directive (E.L.F.)

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E.L.F.

- European Location Framework
  - Creation of innovative value-added services - Deliver up-to-date, authoritative, interoperable, cross-border, reference geo-information for use by the European public and private sectors.

  - Versatile cloud and cascade supporting architecture to provide a platform of INSPIRE compliant geo-information, harmonized at a cross-border and pan-European level.

Rapidly changing world?
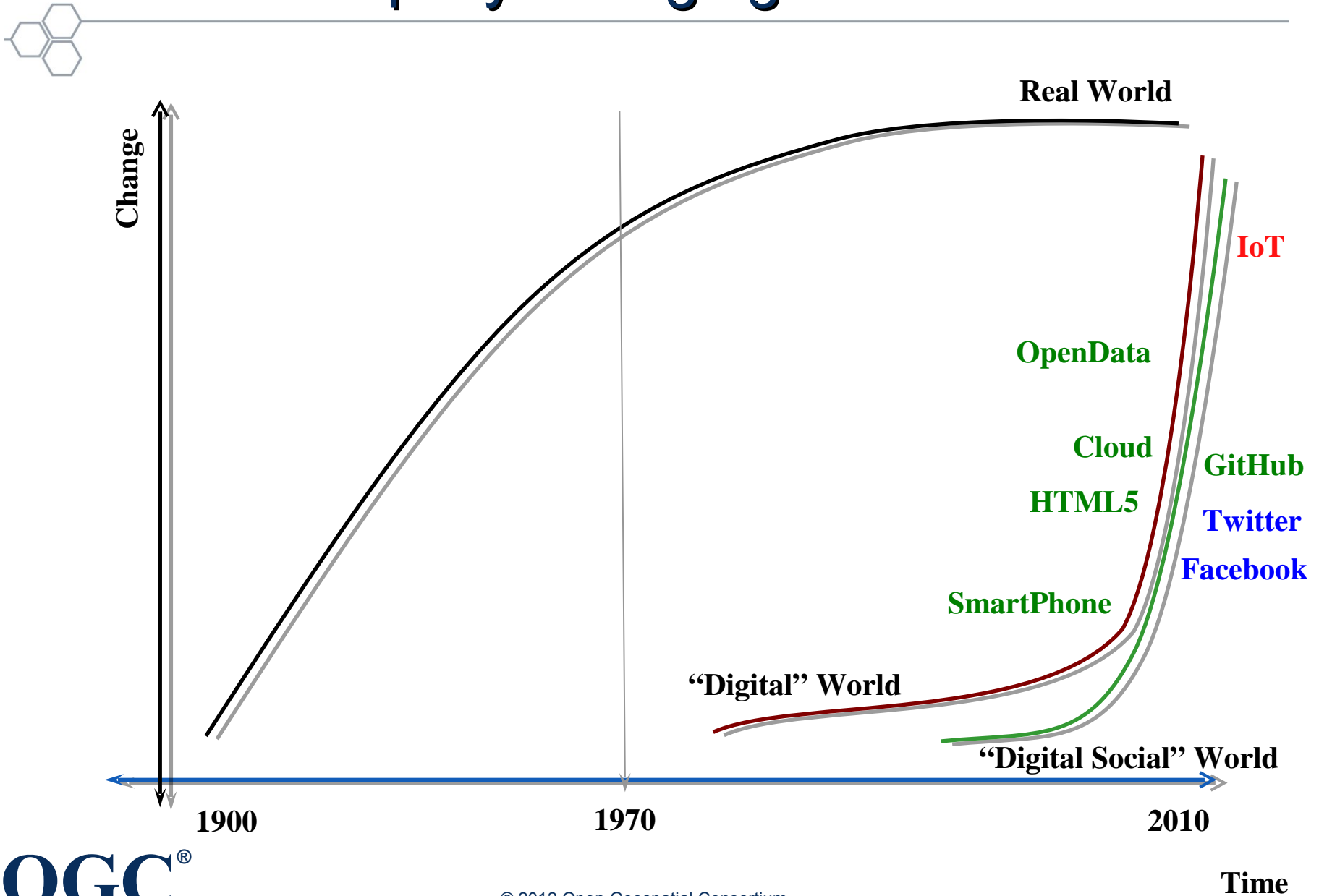
BIM – GI – IoT !

- Internet of Things (IoT) is the next big thing
  - SmartCity enabler
  - Connecting the "Real World" with "Digital World"
    - "Administrative view" closer to real world
    - Database will contain historic information
  - Sensor Web Enablement (SWE) (SWE for IoT)
  - Augmented Reality AR (ARML SWG)
    - GI + BIM + Sensors
  - Indoor navigation (IndoorGML SWG)

Tomorrow: The Internet of things

Location apps

Sensor webs

Location marketing

Indoor/outdoor location

Building information models

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bSa

IETF

Web3D

W3C

OASIS

Standards

Environmental monitoring

Predictive maintenance

Machine-to-machine communication

Augmented reality

Smart buildings

Smart pipes

Smart grid

Today's Internet

3 things to remember

- GI Information for BIM

- BIM – GI – IoT

- Join OGC and help shape Standards

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- Questions?

- Thank you

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