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Geo Data Management, a New Area of Activity for Surveyors

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Thursday, 01 June, 2017, 16:00 – 17:30

Topics of Presentation

- The traditional role of surveyors (FIG)
- Surveyor 2.0 – a new paradigm? (FIG)
- Geo-Data Management, new opportunities for surveyors

FIG Definition of the Functions of the Surveyor

A surveyor is a professional person with the academic qualifications and technical expertise to conduct one, or more, of the following activities;

- to determine, measure and represent land, three-dimensional objects, point-fields and trajectories;
- to assemble and interpret land and geographically related information,
- to use that information for the planning and efficient administration of the land, the sea and any structures thereon; and,
- to conduct research into the above practices and to develop them.

Source: FIG, 2004

Source: BMI 2011

FIG Definition of the Functions of the Surveyor

The surveyor's professional tasks may involve one or more of the following activities which may occur either on, above or below the surface of the land or the sea and may be carried out in association with other professionals.

1. The determination of the size and shape of the earth and the measurement of all data needed to define the size, position, shape and contour of any part of the earth and monitoring any change therein.
2. The positioning of objects in space and time as well as the positioning and monitoring of physical features, structures and engineering works on, above or below the surface of the earth.
3. The development, testing and calibration of sensors, instruments and systems for the above-mentioned purposes and for other surveying purposes.
4. The acquisition and use of spatial information from close range, aerial and satellite imagery and the automation of these processes.
5. The determination of the position of the boundaries of public or private land, including national and international boundaries, and the registration of those lands with the appropriate authorities.

Source: FIG, 2004

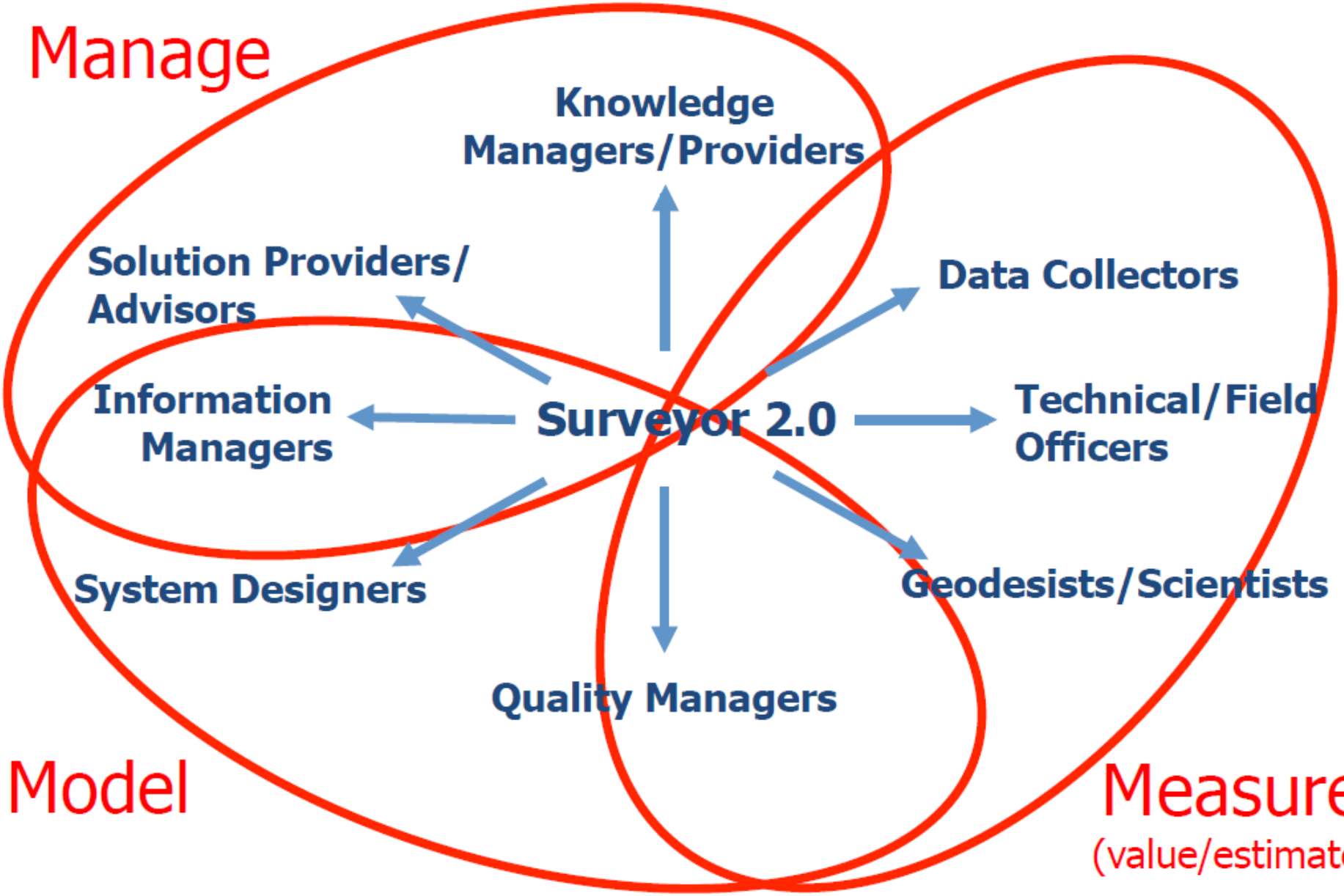
FIG Definition of the Functions of the Surveyor

6. The design, establishment and administration of geographic information systems (GIS) and the collection, storage, analysis, management, display and dissemination of data.
7. The analysis, interpretation and integration of spatial objects and phenomena in GIS, including the visualisation and communication of such data in maps, models and mobile digital devices.
8. The study of the natural and social environment, the measurement of land and marine resources and the use of such data in the planning of development in urban, rural and regional areas.
9. The planning, development and redevelopment of property, whether urban or rural and whether land or buildings.
10. The assessment of value and the management of property, whether urban or rural and whether land or buildings.
11. The planning, measurement and management of construction works, including the estimation of costs.

In the application of the foregoing activities surveyors take into account the relevant legal, economic, environmental and social aspects affecting each project.

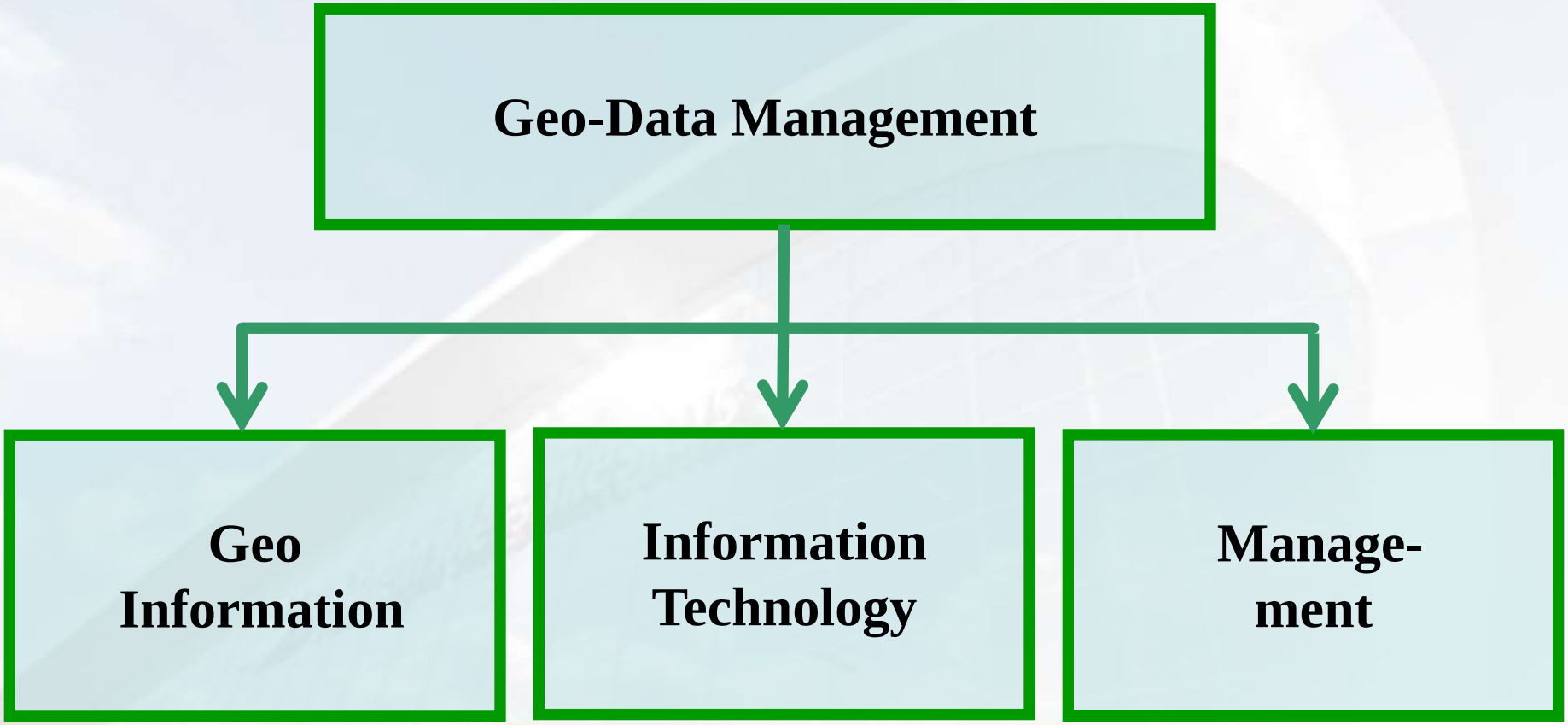
Source: FIG, 2004

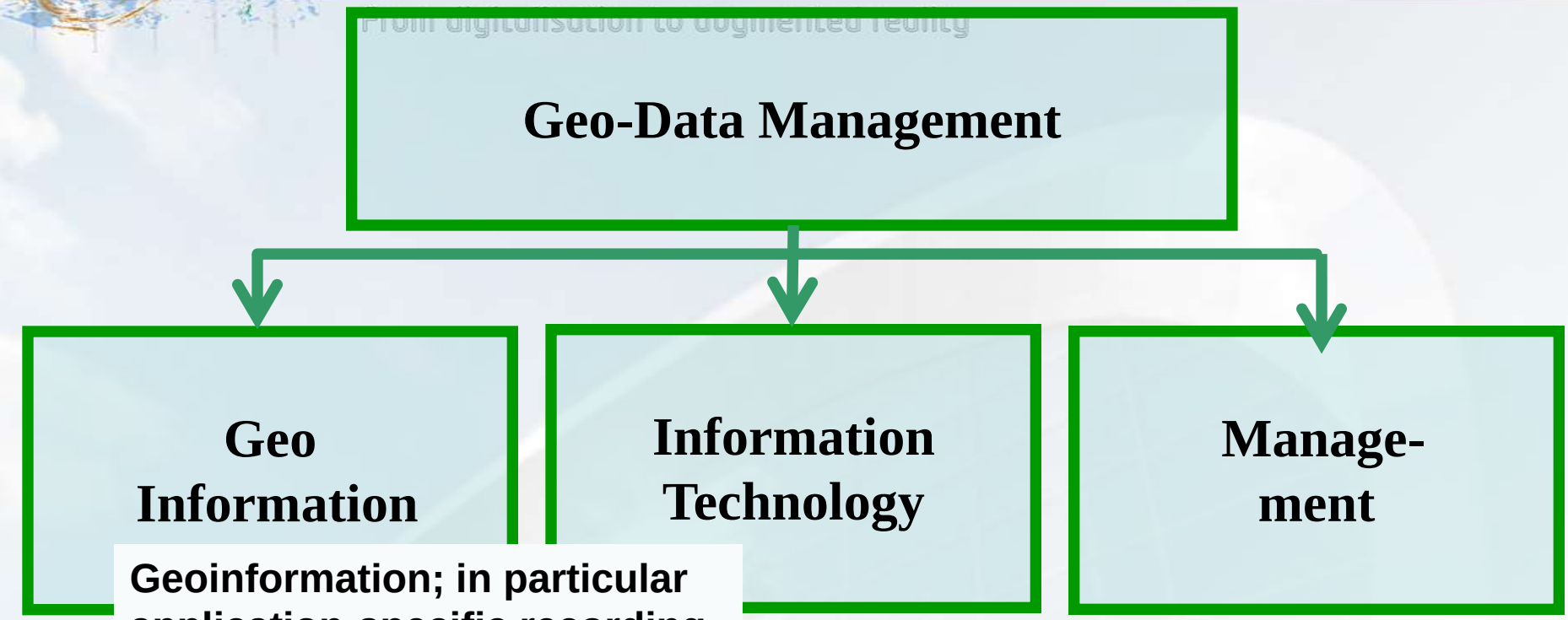
Source: Lemmen et al., 2012



Source: Lemmen et al., 2012

The Triad of Geo-Data Management (German DVW Working Group, 2017)





Geoinformation; in particular application-specific recording, quality assurance, analysis and presentation of spatial objects based on the geodetic spatial reference of position, height and gravity (Geo skills)

Geo-Data Management

- **Geo Information**
- **Information Technology**
- **Manage-ment**

Information technology; in particular technology of data and systems, design and implementation of technical solutions, development of service-oriented architectures and systems, modeling, coding and automation of data exploration, by methods of information and communication technology (IT skills)

Geo-Data Management

Geo Information

Information Technology

Manage-ment

Management; in particular strategic development, structuring, coordination and control of processes, by communication with all involved parties (management skills)

Detailed Functions of a Geo-Data Manager

(German DVW Working Group, 2017)

Professional Skills

1 Establishment of a framework for the comprehensive use of geospatial data

2 Identification of spatial data needs, as-is analysis and data collection

3 Data processing, administration, management and updating

4 Application-specific exploration of spatial data, process integration and information management

5 Design of new data products

6 Development of production methods

7 Definition of the general data production environment, particularly for marketing and sales activities

8 Implementation and operation of an IT infrastructure to manage spatial data (GeoIT infrastructure)

9 Design and development of services and applications

10 Quality management and quality control

11 Basic, advanced and further training

Detailed Functions of a Geo-Data Manager

(German DVW Working Group, 2017)

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Detailed Functions of a Geo-Data Manager

(German DVW Working Group, 2017)

Methodological and Social Skills

1 Project Management

3 Moderation

2 Coordination

4. Conclusions

- The traditional role of surveyors is changing
- Surveyors have the potential to perform high quality geospatial data management
- The surveying profession should take the chance to step into the new fields

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Thank you for your attention!