

Shifting Mindsets in an Evolving World: An Impediment by Transformation Processes



FIG-Vice president Stig Enemark with FIG chairs and incoming chairs of FIG-commissions 2, 3 and 7 on the occasion of the FIG Workshop on e-Governance, Knowledge Management and e-Learning, Budapest April 2006.

People in a society are generally unaware of the impact of slowly evolving changes over a long period of time. Evolution, in contrast to revolution, does not tend to create historical milestones. However, our living space, together with spatial and social environments, is changing significantly.

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Paper Maps

There is an enormous reduction in land resources occurring every year, reducing the availability of rural agricultural land. Similarly the paradigm shift of providing spatial information online as opposed to paper maps is changing society's mindsets almost beyond recognition compared to just a few years ago. The processes that underpin our social interactions have changed beyond all recognition in recent years enabling us to use the interrelated parameters of location, space and time. This, together with technological innovation, has supported the creation of a mobile society that requires rapid access to a variety of information and supporting processes. This is just the beginning of the major changes that will confront us in the future. Society will think spatially without realising it. This will be the ultimate shifting of the human mindset.



The International Federation of Surveyors (FIG) supports the current transformation process by providing a platform for networking, transfer of knowledge and sharing of innovative ideas amongst professional surveyors world wide.

FIG, through its ten commissions, focuses on specific topics within the surveying profession. Examples of the commissions work are provided in documents downloadable, from on the FIG website www.fig.net. These include:

- Mutual Recognition of Professional Qualifications;
- FIG Surveying Education Database;
- Hydrography in Ports and Harbours;
- Contributions to sustainable development:

Urban-Rural Interrelationship for Sustainable Development

Best Practice Guidelines in City-wide Land Information Management

Spatial Information for Sustainable Development

Land Administration for Sustainable Development

FIG cooperates closely with a number of organisations including:

- United Nations Office for Outer Space on multiple and integrated satellite systems (GPS, GLONASS, GALILEO);
- Habitat Professionals Forum;
- The Joint Board of Geospatial Information Societies;
- International Federation of Hydrographic Societies;
- UNB on Marine Cadastre;
- United Nations Working Party on Land Administration.

Four Areas

In the field of spatial information management the changes that are occurring can best be observed by considering four inter-related areas: geo-tools, geo-data, processes, and human interactions.

Geo-tools

In the past only experts had the education and training to use complex geo-tools and

large organisations were required to finance the introduction of the technology. Today these tools have become pervasive and are widely used by the general public, often without them being aware of it. Handheld devices, similar to conventional mobile phones (and now becoming incorporated into mobile phones), have become capable of providing knowledge of the user's current geographic position. These tools, and the services they provide, require improved access to relevant databases. The geo-industry is now moving ahead rapidly to provide the appropriate geo-tools to support the growing availability of geospatial information. One of the largest exhibitions in Europe designed to display state-of-the-art geo-tools will take place at the FIG-conference in Munich in October 2006.

Geo-data

More and more geo-data has become available in the public arena in recent years. Within the last decade significant volumes of geo-data have been digitised creating valuable data sources. The impact of this data availability has made significant inroads into social interaction both at the individual and organisational level. The industry is currently working hard to harmonise a number of related reference systems that will ensure the interoperability user friendly data. Users will be able to combine information gathered in the field with positional information derived from GNSS-services (GPS, Galileo) and others. Today, we are already able to address some of the major user complaints by combining data associated with different reference frames and different databases.

One of the challenges to be addressed in the near future will be the transition from 'normal heights' to 'orthometric heights' where the user will find it complex to understand that physical observations of the same water level, does not mean same height. This type of example will require major marketing activities to ensure that the users really understand the complexity of the datasets involved. Without this awareness of the issues surrounding the use of some datasets, misinterpreted data could, during a period of transition to a more

sophisticated society, create a potential weakness for such systems.

Processes

One of the major challenges facing the emerging spatial society is how to improve the processes associated with the wide use and availability of spatial information. In the past the general public was not particularly interested in technical issues with the consequence that decision-making was often regarded as being clouded in mystery. However, within the last decade individuals have been able to experience the benefits to be gained from improved processes such as new public management and e-government initiatives. These public sector reforms have focused public administration's attention on the citizens' interests, promoting the need for comparable services within the public and private sectors. Among the initiatives being devised to improve transparency, copyright and cost issues is EU-INSPIRE.

Modern governance requires transparency and the involvement of communities and citizens in the decision-making process. This also applies to community-based land management processes and development administration in general. Modern spatial information management tools facilitate decentralisation, community empowerment, and citizen participation, which guarantee social cohesion and a sense of belonging.

Visualisation of spatial information can, and will increasingly, be used to optimise the sustainable resources within a given framework. We have to be aware that some societies with various and diverse value systems are naturally under higher social pressure and this requires even more focus on transparent processes.

Human Interactions

A key issue is how we can introduce the improved use of geo-tools, spatial data and processes. Successful organisations tend to encourage employees to adopt common value systems which ensure that the activities of individuals are in line with the mission and vision of the organisation.

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Honorary guests at the Austrian Geodetic conference in Krems, May 2006.

This approach also applies to societies where government initiatives, such as the educational system in Finland, are designed to provide long-term success in this area – a serious investment in creating a shifting mindset.

The approach of customers to processes and services based on spatial information, however, cannot be influenced and training can be difficult to achieve. This is in spite of the fact that this is rapidly changing and there are examples of technical innovations being introduced within the last decade without any training at all. A good example of this is the mobile telephone, a complex technological device sold and used with minimal or no training. Similarly services like access to spatial information provided by 'Google Earth' do not require any knowledge of GIS.

This trend tends to suggest that technology is no longer the challenge, nor is it impeding the take-up of these systems. The real challenge is to understand people's approach to the utilisation of services and to make decisions at the policy level. This may well lead to a situation where there is a need for society to undergo a fundamental change in the way that it thinks about jobs and service delivery.

Knowledge

Several things are needed to transform to a knowledge value society. One of them obviously is knowledge, which has always been a trigger for the development of a society. The introduction of a systematic education system for the general public in Europe a few hundred years ago created the base for many of the innovations responsible for transforming the agro-oriented society to an industrial society. We can assume that 'Knowledge' is closely linked with the educational system and Life Long Learning (LLL). Europe has a long tradition of cultural and educational diversity. Educational systems have developed to meet the specific requirements of individual States. There is considerable variation in the amount of control over the professions administered

by the State which in turn has led to the situation where licences to practise are required in some jurisdictions, and this has a negative impact on the mobility of surveyors.

Improvements have already been achieved on the educational level where the Bologna process has been initiated to ensure a harmonised academic education standard across Europe allowing young people to become more flexible. Degrees awarded across Europe will provide certified levels of education and encourage cross border recognition, which in turn will provide greater work force mobility. On the professional level CLGE (Comité Liaison des Géomètres Européens – www.clge.org), as well as the ECEC (European Council of Engineers Chambers – www.ecec.net/java/seiten/index2.jsp) are working on the harmonisation of professional qualifications in geodetic surveying.

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Focus for the Future

Knowledge sharing processes will be, and already are, a central feature of the functioning of governments as well as of many organisations. The importance of knowledge sharing has become even more evident with the rise of e-government projects, as these have a networking effect on bureaucracies, bringing together individuals from different organisational units, with different models, to work on a common goal: the implementation of a project. With multiple agencies and multidisci-

plinary knowledge coming together, it is necessary to combine and reconnect the required knowledge. The implementation of inter-institutional projects requires a balanced mix of exploration and exploitation of knowledge, where exploration is more important in the conceptual phase, and exploitation becomes more fruitful in the implementation phase. Good ideas come from people with talent working together. Professionals, such as Tabberer, emphasise the need for organisations to be not only reasonably good at managing data (maps) and information (planning processes) but also at managing knowledge (or: profiting from 'lessons learnt' in a way others can readily use). This approach applies not only to institutions but also to whole regions such as the European Union, and also to the worldwide non-governmental organisation of professional surveyors, FIG.

Knowledge Artefacts

Whenever people communicate they convey knowledge and skills highly contextualised to their and their partner's current work situation. The way of creating, managing and disseminating knowledge artefacts (for example a protocol of a meeting) has already changed considerably in recent years. The integration of spatial information with all the temporal aspects will increasingly be embedded in decision-making processes leading to optimised decision making and transparency. Communication, cooperation and networking as bases for knowledge sharing processes will create a shifting mindset that is more efficient and dynamic enabling geodata to be used more effectively in the development of a modern society.

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