WHY USE CROWDSOURCING IN SURVEYING?

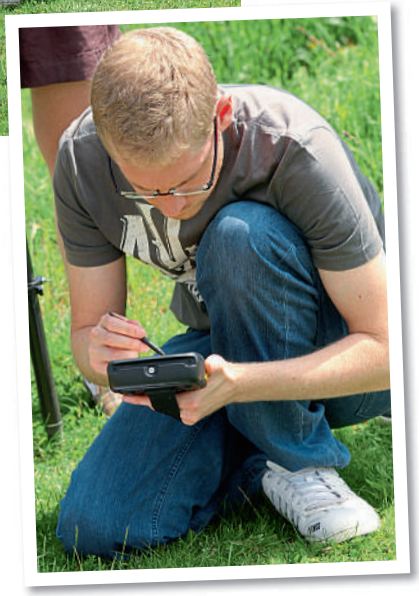
CROWDSOURCING IS ABOUT DOING WHAT WE ALREADY DO BUT BETTER – AND ABOUT IMPROVING OUR SKILLS, ARGUES **CHRYSSY POTSIOU**

Since the launch of the Internet and the creation of the online world in the 90s, a new branch of economics called the 'digital economy' or 'web economy' gradually emerged. Digital networking and communication infrastructures have provided a global platform over which people and organisations devise strategies, interact, communicate, participate, collaborate and search for information. Within a few decades a plethora of user-generated content, such as images, videos, text and audio, most of it with geospatial referencing information, has been posted by users on online platforms, with little or no filtering by professionals resulting in the era of 'volunteered geographic information' (VGI).

Thanks to this growing connectivity, it is now easier than ever for individuals to collectively contribute ideas, time, expertise, funds and information to any project, including surveying and mapping. A massive creation and consumption of structured and unstructured geo-data has been enabled, and the extended use of affordable smart devices has allowed us to reach out to people in even the most remote corners of the planet with information and services at high speeds.

The impact is broad and has dramatically influenced the way we think, the way we live and the way we work, in a manner similar to the impact of the invention of electricity and the telephone. UAVs, smartphones and digital cameras have the potential to unlock the geographer in everyone. Individuals and organisations can now obtain geospatial products and services from a large, relatively open and often rapidly-evolving group of internet users.

Crowdsourcing and VGI initiatives can assist in acquiring missing and out-of-date land and tenure information, conditions that could be due to the lack of human, budgetary or other resources, as in developed countries



Long-term goals

The coming together of this new, powerful and affordable technology with surveying is rapidly aligning with the long-term strategy of the UN and its 193 member states as well as their national mapping agencies. Using the latest technology combined with crowdsourcing, surveyors are encouraged to provide reliable, appropriate and affordable geo-spatial information, tools and services in a timely manner to support all 17 sustainable development goals (SDGs) and the 169 targets of Agenda 2030. This may also help with the operation of smart cities, and the management of natural and manmade disasters, as well as the management of epidemics.

The establishment of property rights is one of the drivers of economic growth and economic freedom. Crowdsourcing techniques may help to secure tenure and property rights on land, real estate and natural resources for all, while eliminating the economic divide between the 2.5 billion people who can register property rights and the five billion people who cannot. Meeting these challenges requires feasible exchange of information between various stakeholders. Linking crowdsourced information with location in the framework of geospatial information infrastructures and management can deliver highly valuable methods for designing and implementing appropriate solutions to humanity's problems.

Surveyors must adjust and redefine their role in this era of VGI and crowdsourcing. The investigation of the potential of crowdsourcing in our work, the development of guidelines and the sharing of principles and trends in legal and policy frameworks is vital, as we assist nations and institutions to take steps to achieve a digital transformation.

Governments can involve their peoples in a powerful way – they can enable the collection and processing of geospatial data in order to increase the usability of such data. With the participation of the public, the full potential of the digital economy may be achieved.

The benefits

The apparent principal advantage of crowdsourcing is that more heads are better than one, and everyone has something of value to contribute. How, then, is crowdsourcing a benefit to surveying?

The theory is that work may be done faster and cheaper but most importantly, it enables data to be collected that would have been impossible to collect using traditional methods. In many cases, this data would enable the delivery of better services with even fewer errors when validation systems are in place.

When crowdsourcing is used in surveying, its primary value is in geo-data collection. But the issue of validation is critical and it may require the preparation and training of volunteers. Several studies to work out who the 'crowd' is, when crowdsourcing is used for surveying, mapping and/or land administration; others have looked at the motivation and evaluation of volunteers and their potential not only for collecting data, but also for editing geo-data, as well as in defining policies and procedures.

But to what extent is crowdsourcing suitable for the various surveying tasks? How will the best methodology and tools for its implementation be defined to maximize the benefits? How, up to what level, and for how long will volunteers be motivated to participate?

FIG Commission 3 has investigated this issue and produced a report, *New Trends in Geospatial Information: The Land Surveyors Role in the Era of Crowdsourcing and VGI,* that explores the value of crowdsourcing to the surveying profession. It focuses on the current practices within the land surveying, mapping and geo-science communities, at a practical as well as theoretical level. It includes the aspects of spatial data infrastructures (SDIs) in general and the crowdsourcing of geospatial data collection in particular. User-generated geographic and geo-tagged digital information data-sources established and maintained by private citizens are addressed, as is the fact that the updating process of SDIs is now gradually shifting to an event-based and not a cyclical time-based process, as it is for authoritative data.

Geospatial data quality and reliability are important for users and producers. However, very often geospatial data users, and especially amateurs, do not understand data quality. More specifically, the report discusses aspects related to the quality of crowdsourced geospatial data and information, and emphasises that it is important to be able to evaluate the applicability of available information to maximise the benefits.

The right way to crowdsource

The implementation of geospatial crowdsourcing is critical according to the type of project. Surveyors who intend to integrate crowdsourcing in a project should be able to plan the appropriate methodology, while choosing the right tools to collect, record and validate data. The report also looks at issues such as the choice and engagement of people for a project, how they are motivated to participate, the extent of current crowdsourcing initiatives of various national mapping agencies, examples of the potential implementation of crowdsourcing in surveying and mapping in developed and less developed countries, and a review of several typical case studies.

The aim has been to increase awareness among surveyors about their new role in the era of VGI. In fact, it's about using the latest technology, as well as information derived by non-professionals, and developing the appropriate tools and methods to do what we already do – but better. It is about serving society's economic and environmental needs. It is all about improving our skills..

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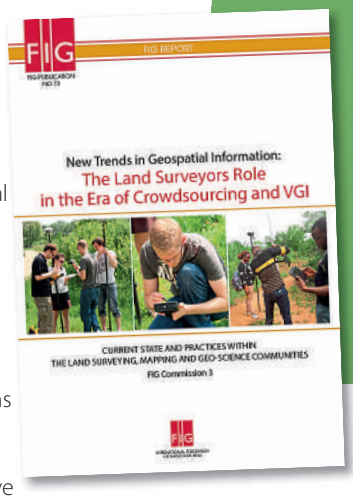

DOWNLOAD THE REPORT

FIG publication 73, *New Trends in Geospatial Information: The Land Surveyors Role in the Era of Crowdsourcing and VGI*, is available to download from: **tinyurl.com/figpub73**