Time and Predicting the Future of Geomatics

One of the challenges in writing a column for Geomatics World, with a publication date that is a couple of months into the future, is to ensure it is relevant and current for you now as you read this. It can be frustrating as well as fun and possibly even thought-provoking to consider the future but also prone to spectacular mistakes. In the 1940's, an IBM executive predicted that there might be a market for about five computers, and even as late as 1977 the founder of Digital Equipment Company (DEC) could see no reason for people to have computers in their home. Predictions that have been way off are not confined to fast changing technology. Alfred Nobel in 1871(dynamite), Gatling in 1877 (the machine gun), Marconi 1912 (radio) and Oppenhiemer 1945 (Atom Bomb), all considered their inventions as bringing an end to war.

So my approach is to either cover some general topic that has little time sensitivity or to focus on a particular item that will hopefully be of a timely nature and of interest.

I could relate the argument for more data, big data even. However, let's start with a specific item that is definitely time sensitive. The RICS survey of the profession.

The RICS has instigated a comprehensive review entitled the 'Future of the Profession' which seeks to gain the views and input of the membership and the wider community of stakeholders. Governing Council seeks to identify trends within the marketplace and showcase how the profession must adapt so that it can continue serving the public interest in the decades to come. The review will help the RICS identify and respond to the opportunities and risks of the external world. Some of the input is case studies and experiences but also there is the opportunity to comment and answer a survey to assist the RICS in developing a picture of what the profession may need to consider in the future. Please help by taking a few minutes to respond to the survey. More information can be found at http://rics.org/futureprofession. The main page is http://www.rics.org/uk/news/news-insight/comment/the-future-of-the-profession/. The survey is here https://consultations.rics.org/consult.ti/fututeoftheprofession/consultationHome. RICS survey and review of the profession has a deadline of mid October 2018.

In the UK, Ordnance Survey is again under the leadership of Neil Ackroyd who has again taken the reins up, this time on the departure of Nigel Clifford. Who'd have thought ten years ago that the sales of map products would be seeing a resurgence. For the year 2017/18, the OS sold over 1.7 million paper maps - an increase of 7% on the year before - exciting times.

This resurgence is great for the nation as the public re-discover their love for the outdoors without digital devices. The most popular maps are of Snowdon, the English Lakes, and the Peak District. However, spare a thought for the least popular map which is apparently the one for Motherwell and Coatbridge. It also coincidentally includes a trig point in honour of Major General Roy who surveyed much of Scotland and whose maps contributed to the establishment of the OS itself back in the latter half of the 18th century.

The resurgence in map purchases reflects the survey industry which currently perceives a bright future.

The Survey profession and the wider geospatial industry sentiment is currently very positive. It is 10 years since the 2008 financial crisis and the introduction of new technologies and systems has supported a continual transformation and development of new methods and data products by the profession is benefitting the wider community.

Laser scanning, UAVs, infrastructure, BIM, and surveying are all elements and areas in demand as are various geospatial related solutions for agriculture, energy, and mining. The combination of lidar and drones represent an emerging line with potential solutions for uses across an increasingly wide range of applications and sectors. Consequently, investment in drones and other remote and robotically controlled platforms, data sensors and geo-related software is likely to be required to support all this growth.

Satellites are one technology that has transformed the life of many surveyors. There are now in excess of 100 satellites in the global systems and regional augmentations. With the expansion and increase in users, especially in Asia, it will be interesting to see how the competing systems get adopted. More satellites mean potentially more observations and big data. More data may be welcome with some increase in availability and resilience but signal jamming is becoming more of a recognised threat that not only affects the critical positioning services (European skies are due to open up through the Sesar initiative this year), but

also the time dependent units supporting much of the world's IT and telecommunications infrastructure. This edition of GW covers many of the key developments of this critical technology in these exciting times.

However, I suspect that surveying work is gradually migrating away from having staff using GNSS units in the field as increasingly data collection uses automation and robotics that require the survey companies to develop beyond the core use of measurement and signal technology and to strengthen quality control, data analytics and spatial advisory consulting skills. There may be a change to the key skills required of a surveyor, but as *GIM International* magazine noted recently "given the seemingly insatiable need to capture our reality, the future of the geomatics professional does not appear to be under threat... it is one that will be catapulted by all the technological innovations that are happening."

So your contribution to the review of the profession is timely and necessary so as to ensure relevance and support for standards, education and the right appreciation of the importance and influence of new and emerging technologies.

Highlighting education and the need to attract young minds has been a theme that is often revisited in the pages of GW, so it is important to ensure that the newer and younger survey professionals contribute to the review. Their fresh views, energy and experiences will be of significance as they represent a key demographic that we must include, value and encourage to participate for the future.

So it's not just data collection and analysis, we also need to promote Surveying, Geospatial engineering, Geomatics, Photogrammetry, Cartography, Remote Sensing, GIS and Geodesy (amongst others and apologies if I've missed you) with respect to the value and benefits for our customers and clients, in order to sustain a distinct profession that contributes in so many ways.

The ubiquity of some of the sensors, the falling costs of location systems and the democratisation of the visualisation and rendering of images and sensor data will continue. However, more data may not be the answer alone. For professional measurement purposes some degree of quality assessment and reference to standards must surely give assurance and support the boom.

As Ray Bradbury (the author of Fahrenheit 451) said when asked to predict the future, "Predicting the future is much too easy anyway. You look... around you... and predict more of the same. To hell with more - I want better."

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https://www.gim-international.com/content/article/time-and-predicting-the-future-of-geomatics