

# A CHANGING WORLD

## GEOFF SAWYER SUGGESTS WHAT INFRASTRUCTURE IS NEEDED TO TAKE ADVANTAGE OF NEW TECHNOLOGY AND OPPORTUNITIES AND STIMULATE THE EARTH OBSERVATION MARKET

What will be the future for earth observation (EO) services? Where do they fit in an increasingly connected world, with an Internet of Things (IOT) delivering more and more data? Despite its promise of democratisation and global connectivity, digital business is becoming more and more dominated by a few giant players. Against this background, what are the key issues for companies seeking to build a business around the use of satellite data?

It is now more than 40 years since satellite images first became available to civilian users. Since then, the number of satellite missions has grown steadily. Images have become more precise, and are available more quickly and more frequently. The number of satellites has also increased phenomenally, as has the variety of sensors and data types.

The European flagship programme Copernicus is setting new standards in operational remote sensing with six Sentinel missions offering a large diversity of measurements which are guaranteed for the long term. The data and information from Copernicus is freely available, which is stimulating many new ideas and applications. The volume of data is huge but the introduction of a new service for data and information access (DIAS) means Big Data technologies are being applied to deal with it. Five DIAS are being established, of which four are fully private, the other public. Some rationalisation is likely and great care should be taken to ensure that the commercial services are operated on a level playing field.

Generating products and services using satellite data has largely been a bespoke business

that has required human intelligence to extract the information in imagery. It is still much the case today but as machine algorithms become more capable, online processing will have the potential to transform the business of EO and geospatial services.

Hence, we see a strong trend to merge geospatial data services, including EO services, with the wider digital services industry dominated by a few huge companies.

### WILL THESE COMPANIES REMAIN INDEPENDENT IN A NICHE MARKET OR WILL CONSOLIDATION ALONG THE VALUE CHAIN CREATE NEW PLAYERS?

This raises many issues. Will these companies remain independent in a niche market or will consolidation along the value chain create new players? Copernicus and the initiatives that surround it have stimulated a strong innovative culture, so there are many 'green sprouts' of start-ups, new entrepreneurs and spin-offs in Europe.

How best to help these bright, young SMEs to thrive and develop? R&D funding, whether through ESA or through the European H2020 programme, has been the main tool and is clearly an important instrument for the future. Yet more important is the environment into which these youngsters are emerging; waiting six months or more to learn if an idea has been selected for funding as a project proposal is way too long – the market is moving too fast. New instruments are available, and more use must be made of small grants, competitions and prizes.

The oxygen of publicity should be harnessed with support to help these new companies promote themselves. EARSC can help here and has several initiatives underway including developing a new marketplace where their services can be promoted.

New finance must be deployed to help the companies grow. A lot is being done but it is currently far too little. The more private finance, the better, but public support can help

underwrite some of the risk. New expertise is needed in public bodies, which can adjudge business proposals transparently and neutrally.

Finally, open data has been a cornerstone of the Copernicus programme and is crucial to helping many of the new ideas to be commercially feasible. More action is needed here to open up public datasets and enable public and private organisations to work together in clearly understood roles. But transparency, communication and a mutual respect is critical to ensuring that open data is used to create new business opportunities and not to impede them.

The next five years promise to be an extremely dynamic and exciting time to be in this sector.

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