



A WORD TO THE WISE

WE MAY BE HITTING A TIPPING POINT IN THE REMOTE SENSING INDUSTRY AS BIG AS THAT CREATED BY THE GUTENBERG PRESS, SAYS ALISTAIR MACLENAN

With a name as elaborate as Johannes Gensfleisch zur Laden zum Gutenberg, the father of the modern printing press certainly had the right motivation to create a way of mass-producing the printed word.

Saving himself the pain of repetitive strain injury aside, the eponymous Gutenberg Press changed the world. By allowing the economically-viable mass production of books, information that had been jealously guarded by the few was now available to the masses. It took time of course but with that information, people started to make informed choices and became, to use an almost exclusively misused modern term, empowered.

Since that revolution in the mid-15th century, the decentralisation and distribution of the written word has continued to increase and people all over the world have been able to improve their lives as a result.

Today, access can be achieved using mobile devices and the price of that access continues to fall; many literary masterpieces of the past are now freely available in paperless format. An almost limitless number of ideas, information and knowledge are available to anyone with an internet connection.

But words are not the only form of information and it is often said (to the point of becoming a cliché) that a single picture is worth a thousand of them.

Three hundred years after Gutenberg, brothers Joseph-Michel and Jacques-Etienne Montgolfier demonstrated manned flight for the first time, in their 'globe aerostatique'. Only 50 years later, Gaspard-Félix Tournachon realised that seeing the world from the air was a new and valuable source of information. He loaded the basket below his newly constructed 6,000m³ balloon (called *Le Géant* for fairly obvious reasons) with a camera and a darkroom and created the world's first aerial photograph.

Access to the photograph was limited to all but a handful of scientific bigwigs and the price of access was the commissioning of a purpose-built balloon including a full photographic production suite. He was somewhat off that Gutenberg event that would transform the remote sensing industry that he had just invented into something that would benefit everyone.

But it may just be that that tipping point is approaching.

NASA launched Landsat 1 in 1972. It was the first of the longest continuous-running series of earth observation satellites launched into orbit around the planet. Equipped with a new type of sensor – the multi-spectral scanner – it created non-photographic images of Earth's surface but those pictures came at a substantial price. Today, many of the images from the far more advanced Landsat 8 are available via the cloud for free.

Where once the cost of creating an earth observation satellite would be in the hundreds of millions of US dollars, now it is possible to build and launch one for less than ten million. And that cost continues to reduce.

The number of sensors in orbit is increasing year-on-year which concomitantly creates more and more information about the surface of the planet, and the quality (or resolution) of that data increases.

Google Maps has seen a generation of internet users become perfectly comfortable users of satellite images and the Esri ArcGIS Platform is striving to make advanced geospatial technology as common place as Microsoft Word. Most recently, the supply of drones or unmanned aerial vehicles (UAVs) has reduced the entry price into remote sensing to a toy, a GoPro and an iPad!

As Einstein rightly pointed out; 'information is not knowledge' but I'd argue (with Einstein?) that it is impossible for anyone to gain knowledge without access to information. The remote sensing industry is providing more information to more people than it ever has done in its 150-year existence.

A huge opportunity now exists for people and companies who understand how to wring the knowledge out of these pictures and provide the expertise needed to make this wealth of information the starting point for decision-making. And it won't just be traditional organisations such as national governments who will need this specialist support but small communities, even individuals who can and will want to use remote sensing data to support decisions on how to best use their land, natural resources and monitor changes.

The remote sensing industry must continue to innovate and create new services; it would be a huge waste if the momentum that has built up was wasted by a lack of both financial support and changes of direction in national strategies.

Remote sensing data is no longer just for specialists – it has become an information source for the masses who will use it to change their lives. Just as they did with words.

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