

A creative approach TO INNOVATION



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Through innovation comes true creativity, it is said. Can it be true the other way around? **Chris Harris** believes it can, and offers some examples to prove the point

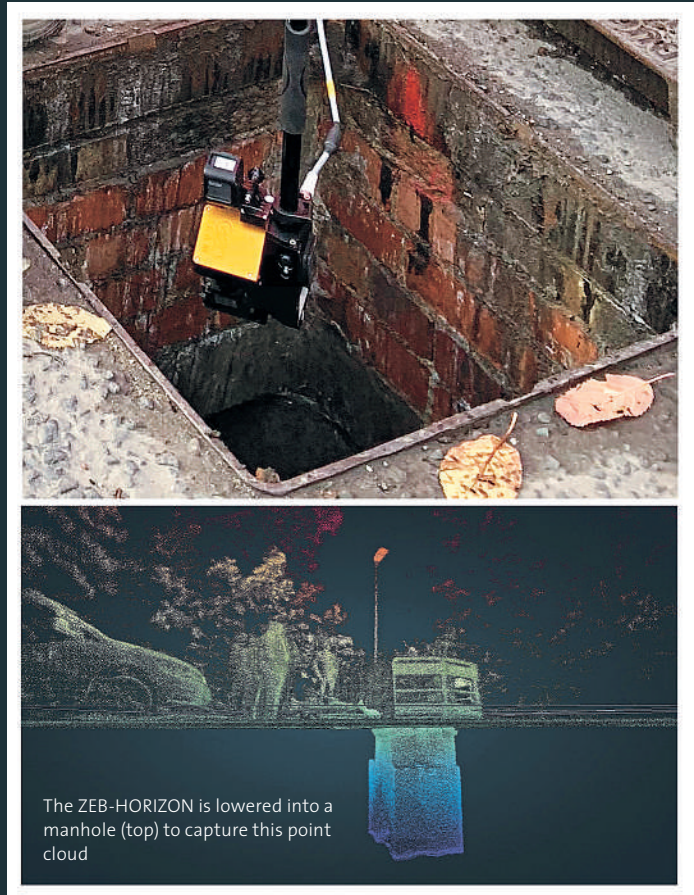
As geospatial professionals, we are sometimes described (unfairly) as techy, nerdy, mathematical characters who require a set goal or a set work 'routine' to operate effectively in our world based on calculations and measurement. Agreed that our projects and instrumentation allow for continual out-of-the-box thinking, but I would say that the more radical the innovation the further we can expand into new concepts, new methodology and new ideas.

If innovation stimulates true creativity, it's certainly true the other way around! Consider two radically innovative (recent) geospatial instruments that give us exactly this.

Laser scanning total station

The holy grail of our customers for many years finally saw the light of day in 2016. Initially, it was treated as a Total Station, or a laser scanner, or a combination of the two, and employed on projects with which customers were familiar. However, in the last year or so the breadth of use has expanded significantly. It could be noted that the product (Trimble SX10) is now regarded as more of an everyday item, with many more in use, but I believe that as soon as people get excited about the new technology they start to get creative about its uses.

- Remote operation, upside down in a chamber? Into a confined space, a tunnel? Control the instrument as if someone was stood behind it but, instead, they are elsewhere or in a position of safety and controlling it from a tablet.
- Difficult tasks. I spoke to a friend the other day who said, "I used the SX10 to measure a building from four other buildings (rooftops or windows) in the city. I could not have done this with my other scanner. I don't think it would have worked with anything else!"
- New working standards. "We don't ever go into the road anymore" reported another adaptable business customer, "We just don't need to as the data will be scanned and it's far safer and quicker. While I make a few notes about my current setup, I've completed a scan and full colour panorama."



The ZEB-HORIZON is lowered into a manhole (top) to capture this point cloud

Handheld laser scanner

We have witnessed a series of launches of handheld scanners over the past few years, the most modern of which, the ZEB-HORIZON was featured in the previous issue of GeoConnexion. This scanner takes things a step further than its predecessor in measuring at much greater distances. The concept is simple: turn on the device with a single button; walk; turn it off; look at a registered point cloud (3D copy of reality, fully measurable). Of course, there is a bit more to it than that, with the science that goes on behind the scenes, namely the SLAM algorithm (Simultaneous Localization and Mapping) making the instrument so effective. Here again, radical innovation has spurred creativity into overdrive:

- Rights of light, a two-minute walk can achieve the same as a full day survey.
- Difficult environments: bridge decks (undersides), above ceiling panels (on a raised pole), powerlines/masts (UAV mounted), the possibilities are endless
- Manhole chambers – one very clever company in the UK not only uses our products to automate STC-25 manhole data collection and delivery but can now 'attach' a 3D point cloud as captured by a handheld scanner of the chamber. Simple, fast and extremely effective.

The more interested we are in what we do the more we will get out of it. Keeping things fresh with new technology not only helps us be flexible, try new things and win more work, it also helps in other ways such as staff retention and job satisfaction.