

GIS Hot Topic

- **GIS professional development:**

Some professionals have 'structured' development goals and targets

- How do we progress/what are the pathways?
- Royal geography society (UK) chartered geographer
- Lack of ongoing PD
- Learn on the job – depends on software, peers – IT existing
- Get to learn a bit of everything – there is support
- Recruitment
 - How difficult is it to get people
 - Poaching to other local authorities or private enterprise
 - Seems like a shortage of skilled staff
- Private enterprise
- Experience V Qualifications (leaving uni with qualifications but need experience to get job)
- PD at Councils seems Ad-Hoc – most councils generally supportive
- In some councils GIS is not even a full time job
- Space to be innovative?
- Still a challenge to communicate to SLT. Improving – but there is sometimes a belief that we (GIS staff) just do maps
- Need time to do Innovation to showcase but only have time for BAU
- Demonstrating value
- Short courses to help improve some skills / support – databases
- Recognition of skills & contribution
- Consideration of chartered status requirements I think this was ALGIM to assist?
- Training can be done through MOOC's (massive on-line open courses)

- **Point Clouds (3D visualisations):**

- Underutilised
- Storage – accessibility, infrastructure & archiving
- Data transfer via networks
- Streetcam 3D
- Creation of **rasters** etc, other derivatives – dissemination, clip, zip, ship tool?
- End use? – web scenes?
- Open data/ Big data
 - Management / education of users
- Processing
 - In house / contract out!
 - Pix4D/D2M/Drone **deploy**
 - Best to have software designed for the job
- Purpose
 - Ground / non-ground? – storage

- Capture
 - UAV / RPAS capture for small areas
 - Cost saving vs surveyors etc
 - Updating for newbuilding etc
- Visualisations (non-ground)
 - 3D modelling of buildings etc
 - Viewshafts
 - Height plain
 - Enables to understanding, engagement, decision making tools
 - Powerful tools, underutilised
 - City engine – parametric modelling, rules based, BIM
- PRIVACY

- **Big Data Visualisation drives:**

Challenges to process data (choose wisely)

- Making sure the IT infrastructure can handle it
 - Storage
 - Back up
 - Replication
- Important to know your result before choosing
- What is the data quality?
- Where is the data being sourced? – LINZ, Stats NZ
- Formatting of big data – is it accessible to everyone?
- Common symbology helps facilitate big data use
- Multiple formats of GIS software in a single organisation
- Many ways to consumes big data sets
 - Live streams
 - Periodic update (data dump)
- Standards are important – common schemes and symbology
- Expanding data can out strip the infrastructure of the organisation
- Existing network infrastructure can hinder the flow of the big data
- Big data is an economy of scare – difficult in NZ
- Private sector is using big data at a greater rate than the public sector
- Proprietary information – is it better to integrate it or just consume it as is (Google)
- We are the collectors of big data – Strava, Facebook (GPD in phones)
- Using big data to make communities better – where people go, when
- How do we know how much of our data is being harvested?
- Stewardship of data – consuming and providing data according to needs
- How we provide the data to users – big data is a double-edged sourced.

- **Remote sensing IoT drives:**

Benefits of RS IoT

1. Data in real time
2. Accessibility – hard to get to areas
3. Connected to my business e.g. farmers, councils etc
4. Predictive analysis / reactive outcomes / prescriptive analysis
5. Multiple types of information available in single moment
6. Informed business discussion

Challenges

1. Connectivity – infrastructure (remote areas)
 2. Cost of devices
 3. Resistance to change
 4. Understanding or lack of knowledge of how IoT works – technical know-how!
 5. Data quality – assurance
 6. Skills shortage (lack of right people to leave innovation)
 7. Lack of funding – same pool – prioritisation
 8. Leaders – lack of vision and understanding, fear of disruption – ideas not made into reality.
- **Automated Processes drives:**
 - Automated cemeteries – funeral directors bookings sites. Either directly or through Customer Service.
 - Automation of 3D – not there yet, mainly one off
 - LINZ LOS
 - Weekly or monthly datasets
 - Public maps
 - Updated – public can easily access
 - Property snapshots
 - **Asbuilt** Process
 - Often still manual
 - Would be good to automate
 - Can be a long drawn out process
 - BIG datasets
 - Not much planning for future automation
 - Network tracing comes back to quality of data
 - Valuation Matching
 - Some automated some manual
 - Need to use LINZ as truth of source for geometry
 - Various departments manage it, e.g. rates or GIS
 - Analytics of Map use data – who's using the data etc.
 - Automated LIM
 - Inhouse, checked over by teams to validate
 - Property files online
 - No push for archives to be loaded
 - Integration/automation with assets/property etc

- **Open Data:**

1. What is open data?

- Local government about **authoritative** data (do we want people to modify it?)
- Something that can be consumed
- Something that can be visualised if not consumed

2. What are the risks?

- Obligations to keep components private
- Copyright
- Misuse – accuracy/currency/content
- Single source of truth
- Data huggers
- Divulging private information
- Trust in those consuming
- Infrastructural requirements
- Resourcing

3. How do you share and manage open data?

- Strong metadata
- Share what we own not others or under creative commons
- Catalogue
- Data classifications about what can or can't be exposed
- Disclaimers
- Website promotion/direction to download
- Web Services

4. What are the benefits/opportunities?

- Transparent government
- Economic development & innovation added value
- Feedback loop for added value products?
- Takes burden from under resourced local government body
- Feedback to data cleanses