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1 Raising the Profile of the Spatial Industry

This report documents the results of two surveys and research undertaken by Megan Stanley of Aurecon and Jose Diacono of Communica on the need to raise the profile of spatial information and technology in the wider community and with professional colleagues. This was driven by many comments at spatial events that “nobody understands what we do”, “they just don’t get it”, “we cannot build a business case”.

We also researched current awareness raising initiatives and opportunities in Australia and around the world. Some of these are mentioned in the report but we are constantly finding more. Information and links can be found on www.communica.com.au

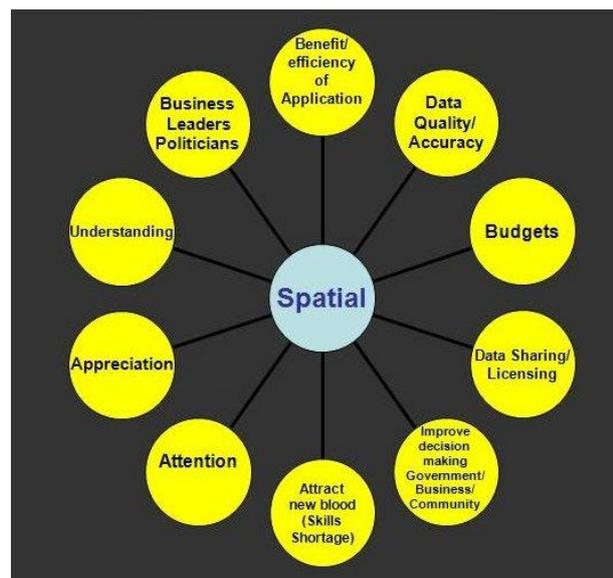
We presented these findings at the 2009 Surveying & Spatial Sciences Institute (SSSI) Conference with some initial recommendations.

We hope that this report will initiate discussion, cross pollination and collaboration within our industry to communicate the value and power of spatial information and technology for society, community and the economy. Success in this will enable our industry to gather resources, grow the skills pool, secure budgets and expand markets.

Thank you to all those who responded to our survey, many taking extra time to write detailed comments and to SSSI for distributing the survey to its members.

2 Why do we need to raise the profile?

While **we** know that spatial technology can help just about every facet of society and the economy, it is still far from universally embraced or understood by the mainstream. “If people are confused, they say no, especially lawyers” said Kevin Pomfret of the OGC consortium. Business managers or politicians will not invest if they cannot see the benefit. Too many managers are still trying to make sense of tabular data instead of visualising crucial relationships on maps; university course intakes are down, policy makers and scientists are grappling to make sense of huge amounts of interdependent information. Integration projects fail and business cases don’t get off the ground. For those selling spatial solutions, the market could be much larger.

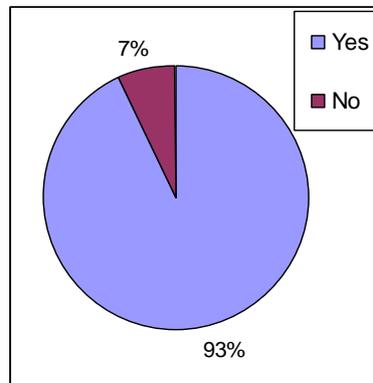


3 Public Survey

This was an online survey using www.kwiksurvey.com which took 5 minutes to complete. It was distributed by SSSI and to our own contacts. A draft survey received 13 responses. The final survey a further 183. Questions were multiple choice with an opportunity to add comments. Respondents could optionally give their contact details. 98 did this and will receive this report by email.

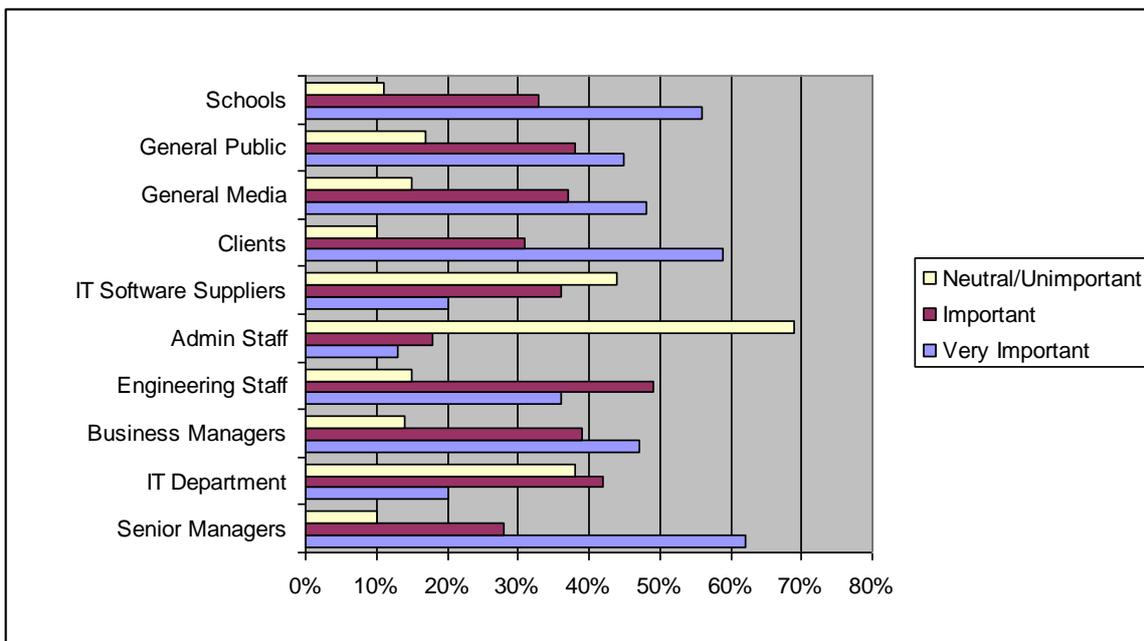
3.1 Is raising the profile important?

93% said yes. Several commented that it was not the industry as such that needed to raise its profile – but rather the overall value and benefits of ‘spatial’ that need to be communicated. *“It is less about the profile of the spatial industry and more about the importance of spatial data to an organisation”.*



Raising the profile of the actual industry is problematic because we are such a diverse collection of technologies, services and applications represented by different associations, groups and agencies. Several questioned whether we are in fact an industry at all.

3.2 Who do we raise it with?



Rated Very Important were 62% senior management 58% clients, 56% schools

The most important groups were school children and senior managers. There is some duplication in the ‘clients’ category since they fall into senior managers, business managers, IT etc. School children are crucial because we are faced with a serious skills shortage and need

new blood in the industry, senior managers because they ultimately hold the purse strings.

“It has to be about ensuring that the people responsible for preparing budgets understand the importance of a spatial framework to their business”.

“If they understood just a little more they would demand more”.

IT did not rate so highly overall, but some comments indicated that lack of understanding in IT groups can be a serious impediment. IT suppliers need to understand the importance of address validation so that addresses in Customer Information or Billing systems match up to actual land parcels (properties) in the GIS. For example, a customer calls in a fault, but their address doesn't translate into a location on the network.

The message is we do need to raise our profile across the board.

3.3 What do you have difficulty explaining?

The two main areas of difficulty are the **Value of Spatial Information** and **Data issues**

3.3.1 Value of spatial information

- How it helps organisations make better decisions, save money, target customers, reduce risk.
- Its ability to integrate and create knowledge with other disciplines such as science, maths, engineering, finance.
- The power of combining and visualising ones' own data with that of others – and the mutual benefits of sharing.
- How spatial gives context to information. “Where am I, in relation to everything else?” where are my assets, my customers, my spare parts, my workforce, my competitors, environmental threats, growing populations.

“People need to understand how it impacts on their life and work”.

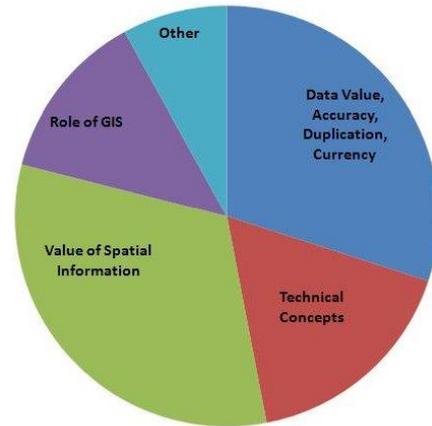
“Spatial data is only known as maps in the broader community. There is very little understanding as to what else is possible with spatial data”

“New communication needs to focus on reducing the time required to go from introduction to inclusion in corporate budgeting processes”

3.3.2 Data Issues

These include reliability, accuracy, duplication and currency

- The value of data itself and the importance of maintaining it – accountants do not put a dollar value on spatial data (or any data for that matter) so when budget requests are made to improve it, it is seen as a cost rather than a valuable asset.
- Quality of data and the impact of duplication within and across organisations
- Determining accuracy of data required for the purpose being used
- Backroom tasks such as the research and preparation required before most field tasks can commence.
- The true cost of data



While it is generally agreed that the proliferation and ease of use of Google Maps and SatNav has helped create awareness, Spatial is still not mainstream IT.

*“In the wider community 'mapping' is about pictures or imagery. Little care is given to underlying accuracy, duplication, currency etc of data that underpins the mapping. **It is taken for granted.** Yet it is what makes 'spatial' expensive”*

“Unfortunately, these [Google Maps and SatNav] also have a very negative impact because they give the impression that data and images are cheap, easy to obtain, don't need maintenance, and are easy to use”. So the profile has been raised but it is still very difficult to obtain approval for data maintenance type business cases, “which is the backbone of the business paradigm: data into information, into knowledge, into wisdom”.

Less challenging but still important were technical concepts and the role of GIS in a project. This latter aspect was covered in more detail in the Aurecon survey.

3.4 What successes have you had?

Many respondents had undertaken awareness raising activities

- The Institute of Surveyors careers expo
- School visits, career expos, presentations to careers teachers and geography teachers
- Collaborative projects and demonstrations to solve business issues
- Working with industry and professional associations in Urban Planning, Agriculture, local government and Property Management
- Business cases, arranging for respected experts to talk to senior managers, preparation of reports which mapped spatial tools to business needs
- Speaking at Probus club
- Through intermediaries that are already entrenched as suppliers in these (non GIS) industries.

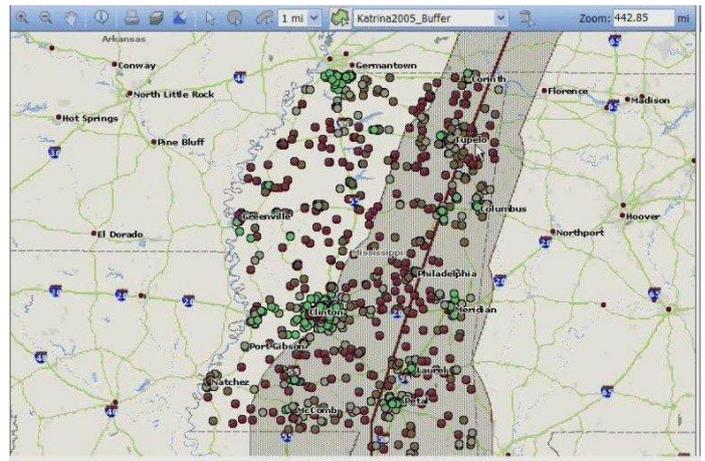
However, many felt activities are fragmented and often lose momentum when roles change, spare time or short term funding runs out.

3.5 What helps?

3.5.1 Keep it simple & relevant

Google Maps, in-car navigation and Virtual Earth have helped considerably. *“Google Earth is a good example that can be used to explain simple concepts to the greater public”.*

Those who have had success have gone back to basics and explained things very simply in terms that mean something to the listener, with relevant examples and multidisciplinary case studies. *“It takes a good deal of explaining and use of examples”* said one. *“In most instances communications must be visual and be accompanied by real life, client specific demonstrations”.*



“Focus on the value” Professionals want to know how they can improve their decision making by integrating knowledge from their own and other organisations. An insurance company wants to know its exposure to an approaching hurricane or spot potentially fraudulent claims outside the affected area, a council is concerned about the impact of rising sea levels or wants to reduce the load on customer service staff. A utility wants to reduce its maintenance costs.

Image courtesy Pitney Bowes Business Insight

It also helps not to get caught up in the technology or jargon which alienates the audience. *“They want solutions not technology”.*

Most people process information far better when it is presented visually. *“The power of maps is their ability to help people process a lot of information quickly and make decisions”*. We should be very aware that simply being able to see how pieces of information relate to each other through location is quite revolutionary for most businesses and organisations. For example a bank seeing which of its ATMs are favoured by its most valuable customers so that they don't remove the wrong ones (I heard this happened at a major bank causing much embarrassment). Do not fall into the trap of equating the benefit to the complexity of technology or processing required to achieve it. A simple “mashup” may do the trick and when demonstrating functionality less is often more. *“We need to better understand the value we can add from the user's perspective, not our perspective”*.

Avoid getting so excited by the technology that we forget to ask if the user actually wants it. *“Most non GIS prospects need solutions to their pain not fancy complex technology. The world of applications awaits the GIS industry if they can focus on solutions and invest upfront”*.

3.5.2 Show where it fits in

It helps not to present spatial technology and information in isolation. *“Value the pivotal role spatial has in so many facets of our world”* was one reply. Present it as *“Just part of the greater continuum and overlapping activity of multiple technological disciplines”* was another. The strength of spatial is in giving a context to information from which new knowledge is gained.



The [Climate Change Interoperability Plugfest](#) just launched by the [OGC](#) to raise awareness of geo-open standards will also educate the climate change community about how spatial can serve them.

There are so many examples, but Climate Change was mentioned as one of the most applicable and high profile. At the SSSI conference Keynote speaker Andrew Campbell painted a grim picture of a world driven into chaos by climate change. The global trajectories of population, consumption and energy use cannot be sustained without a radical decoupling of economic growth from carbon pollution, resource depletion and degradation. Systematic reform is needed in water, transport, urban design, farming and health, but this can only happen with understanding of all the interdependencies. Enter spatial with its ability to integrate knowledge across issues (climate, energy, water, food) and across scales (paddock, region, state and continent). He urged the audience to “understand the knowledge need”, investing time and energy to engage the community. But, Campbell pointed out, “some of this stuff takes time”.

3.5.3 Use the right words

There were some very strong opinions in this area.

"The title "Spatial" is a nonsense to most of the public."

"Calling it Spatial is a mistake"

"Spatial Awareness: a term usually attributed to people's ability to drive without collision!"

"Everybody thinks "spatial" industry means rockets and space exploration".

"We deal with maps and location"

"I find I need to preface all discussions with an explanation that we are dealing with surveying and mapping, and that spatial is a new fangled description, etc. Once identified as a recognised traditional area of industry then discussions can continue".

The Google Keyword Tool confirmed this. This tool reports what words or search strings people are searching for in Google. Over a month the result in Australia was 40,000 searches on *spatial*, 40,000 on *GIS*, 450,000 on *location* and 3,350,000 on *map* (with many more on *mapping* or *maps*).

The Fairfax 12 month news archive found 83 articles containing 'spatial.' Only one was about 'our sort of spatial', the rest dealt with Disability, Archaeology, Horse Racing, Art etc.

When we speak to the wider world, though it may seem to trivialise our discipline, we must talk about maps.

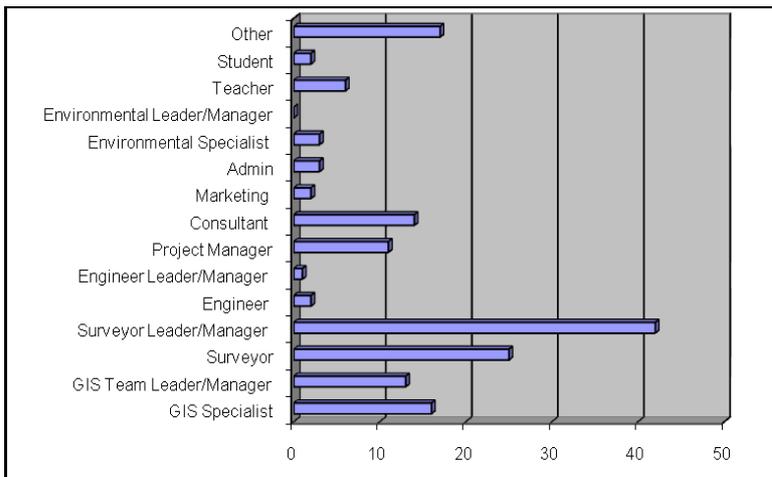
Using the right words is especially important online. Otherwise people searching with Google simply will not find the resources we have.

We need to link to the websites they are already visiting - government websites, careers and university websites for school students, professional associations for industry.

3.6 Who are you?

We believe respondents reflected the makeup of the Surveying and Spatial Sciences Institute. There were a large number of surveyors, then GIS Managers and specialists, consultants, project managers and teachers/lecturers. The 'other' category included Managing Directors, Information and Asset Managers, Association Managers, Magazine Publishers, Planners and 'lapsed surveyors'.

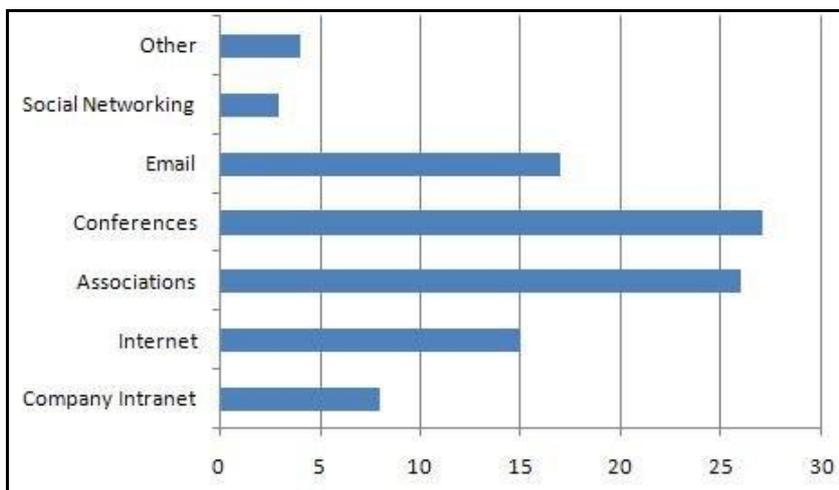
Breakdown of survey respondents



3.7 How do you get connected/pool ideas?

Respondents rely heavily on industry associations and conferences for independent education, thought leadership and new ideas. People mostly still meet, talk and create relationships through face to face contact –they keep up momentum with online discussion, internet research, email, social media and blogs. Several respondents participate in “*the much larger conversations going on nationally that are really driving broader change and are more engaging to non-spatial people*” such as the Government 2.0 Taskforce <http://gov2.net.au/> which is looking at the potential uses of public sector information and online engagement.

If this poll reflects the situation in most professions and industries it opens up huge opportunities to raise awareness through other associations.

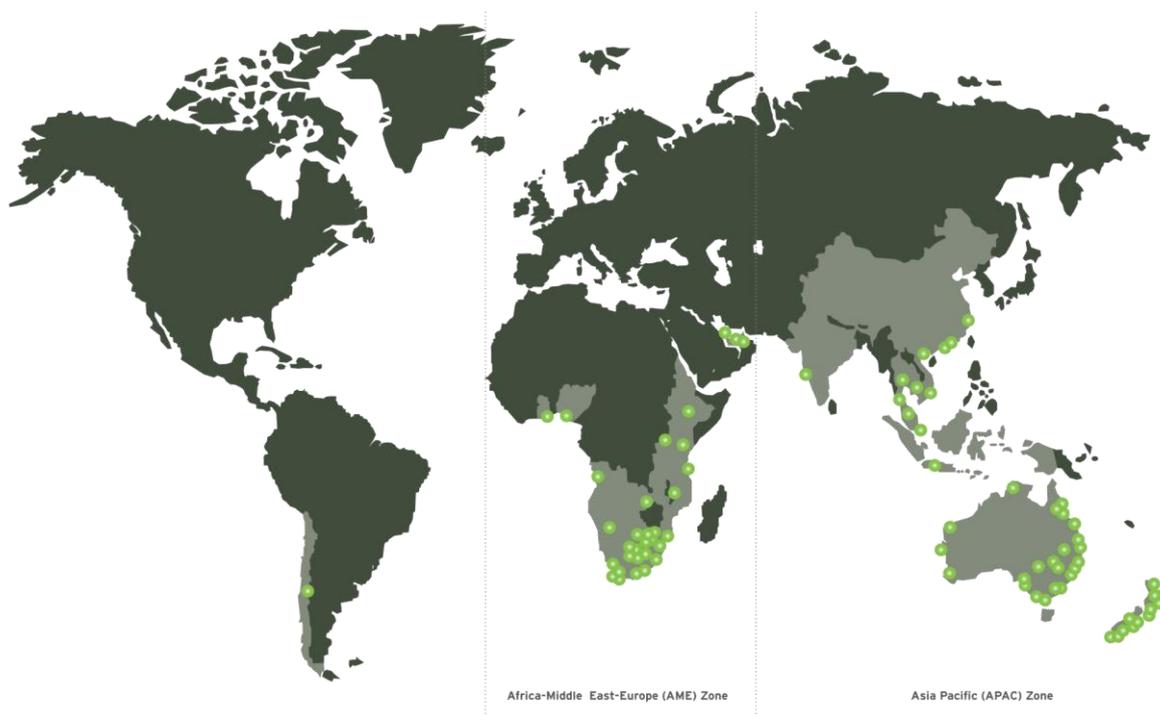


4 In-company survey – Aurecon Case Study

4.1 Who

Aurecon is one of Asia Pacific's largest and most experienced multi-disciplinary consulting practices. Aurecon was created by the recent coming together of Africon, Connell Wagner and Ninham Shand, With a combined 210 year history, a staff complement of 6,700 and an office network of 87 offices spanning 28 countries worldwide.

Aurecon provides clients expertise in integrated services across all markets including Advisory, Planning, Surveying, Engineering, Environmental and Business and Project Management.



4.2 Raising the awareness of spatial in Aurecon. What was done.

Throughout the firm there is a wide capability of Spatial Personnel, Techniques and Tools. The challenge faced was growing and building the expertise and knowledge of what Spatial can do at a more corporate level.

The awareness raising model was broken up into three stages. Stage 1 - the Awareness Raising Survey, Stage 2 - Communication and Resource Marketing and Stage 3 - Adding value to projects and end products for clients.

Stage 1 – Awareness raising phase

An Aurecon case study, five minute survey was developed from Kwik Surveys www.kwiksurvey.com . The survey was conducted on 550 employees mixed from various sectors and roles throughout the NSW/ACT offices. The aim of the survey was to identify the current profile Spatial had within the company and what steps we had ahead to build the awareness of spatial further into the business. The survey was distributed by email which included a mosaic of image enticers, advertising techniques and spatial outputs to get the survey respondent understanding what “spatial” we were surveying them about. This was also a technique to capture the audience and give maximum survey results.

Stage 2 – Communication and Resource Marketing

Some of the major sources of communication for “spatial” in Aurecon have included the company interest group web pages available to all staff on the intranet. This portal gave the capability of online blogging, and postings from company wide participants subscribed to spatial forums. Monitoring of these sites by the IT department has indicated GIS and Survey to be two of the most active forums within the company. Other techniques useful for spatial awareness building include lunch time seminars with video conferencing and online capability statements with key project and resource experience advertised.

Stage 3 – Add value to projects and end products for clients

A goal within the spatial group has been to continue pushing the awareness and importance of spatial further to business leaders and senior executives and to drive the benefit of a more corporate enterprise system.

An Influencing article I found on this particular topic was from Position Magazine “ Changing Corporate Philosophy” by Anthony Jahshan. It stated “*Senior executives have two common, but not obvious needs. They want information that is simple to understand so they can act quickly, and that the information must improve the services or profitability to business.*”

Aurecon has taken the first step in this stage and have presented to senior executives and project leaders at various road shows in our New Zealand offices. Benefits of an enterprise spatial based technology and streamlining capability have been major factors to demonstrate they can add value to projects and end products for clients

4.3 Results

The awareness raising phase, Aurecon survey brought out some promising results to build effective communication and marketing targets. With a response of 25-30% of the total NSW/ACT group, a good indication of spatial awareness was determined for this pilot study.

Asking the respondents what role they were working confirmed the focus target market for future communication and marketing strategies. The results on figure 1 indicate 34% of the respondents were Engineers and 20% were Executive. A positive response was also shown in two other question responses indicating in Figure 2 over 67% wanted to know more about spatial techniques and tools and figure 3 showing over 70% regarded spatial important and very important to business. These combined results reflect a drive and openness for new technology especially spatial and a growing business case to move towards a more corporate based enterprise system.

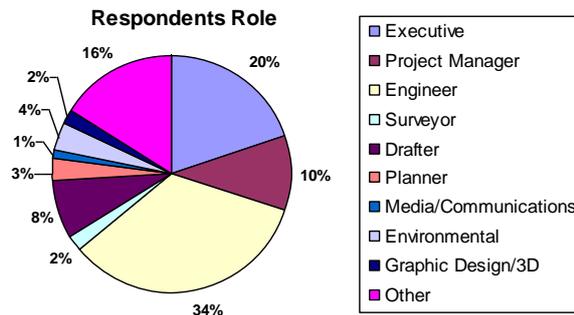


Figure 1

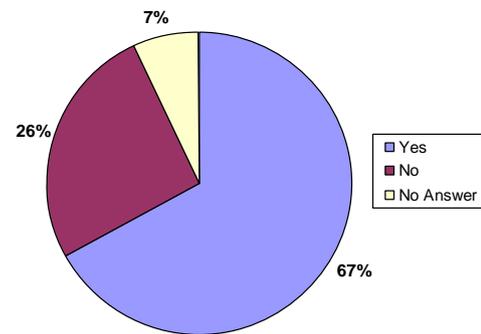


Figure 2

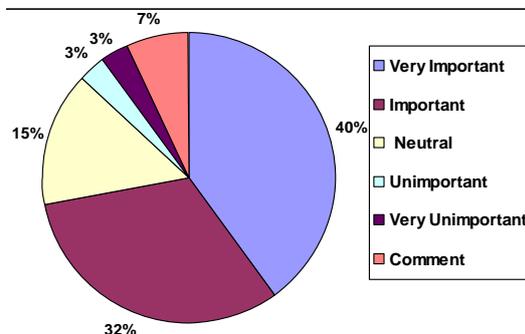


Figure 3

In Figure 4 an indication of what types of spatial tools and resources was also questioned. Responses show a high 65% used Google Earth/Maps on day to day business.

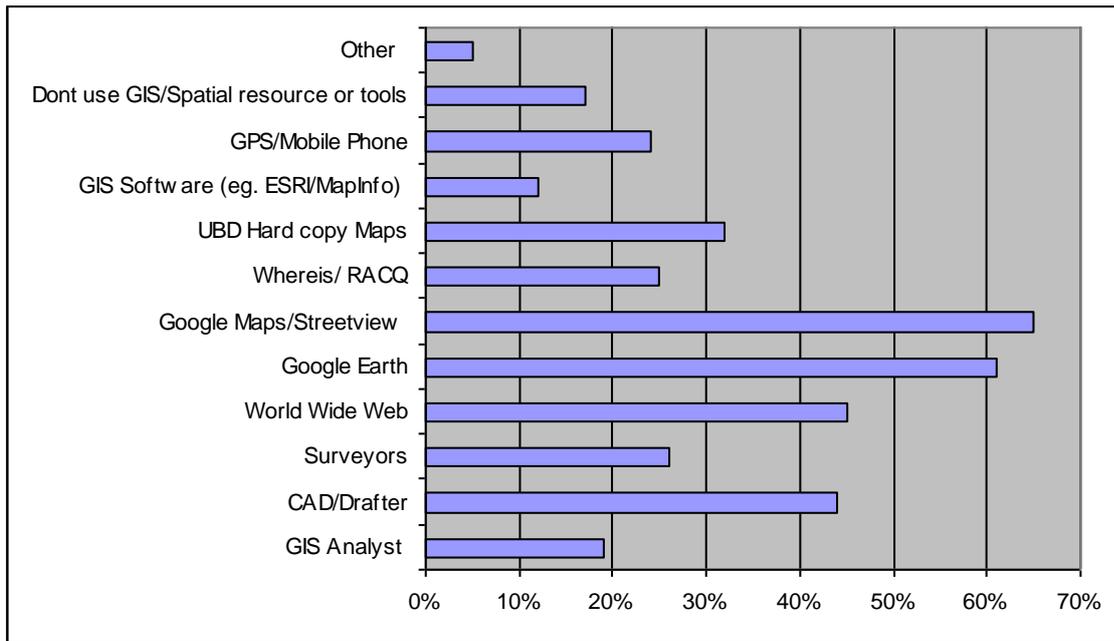


Figure 4. Spatial Tools/ Resources commonly used within the Aurecon Office

Asking what office the respondents sat in demonstrated in figure 5 clearly most of the respondents (72%) from the NSW/ACT region indicated they were located in Neutral Bay.

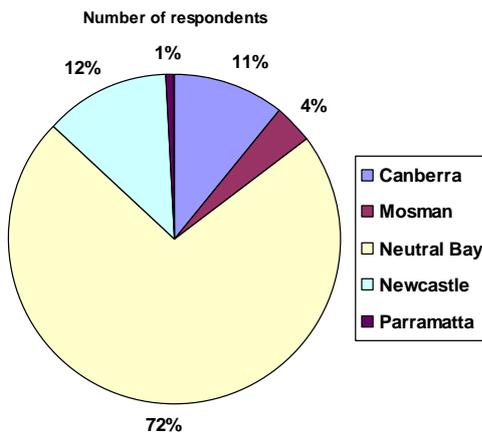


Figure 5. Location of Staff in the NSW/ACT Region

For Aurecon to keep moving forward towards enterprise spatial solution, Training courses and resources need to be funnelled from a central base in this case Neutral bay. The results in Figure 4 indicated resources and tools used by many of the respondents (Google earth/Maps) spatial solutions for business need to be simple and effective to be understood by general users and to add value to project lifecycle.

The need for face to face communication was reflected in Figure 6 with huge responses indicating lunch time seminars was the most popular use of communicating new tools and techniques in spatial.

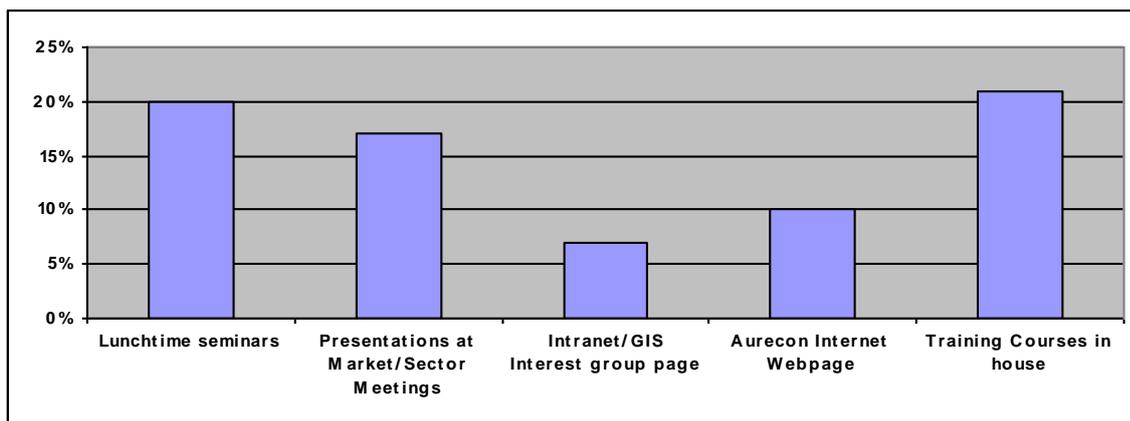


Figure 6 – Most popular medium for communicating new tools and techniques

This research will continue to survey all employees of Aurecon, globally raising spatial awareness, developing marketing tools and building enterprise solutions for projects and clients, building future capability.

5 What is being done already?

In addition to the surveys, we researched the spatial awareness-raising activities already occurring, the organisations we could work with and initiatives we might piggy back on. Some examples are below but for a full and growing list please go to www.communica.com.au

5.1 Activities & resources

Good things are happening. SSSI and SIBA have made inroads in Urban Planning, Councils, Agriculture and Property Management. OGC and GITA in the USA are looking at the legal side. A surveying taskforce in Victoria has developed a formal marketing plan and resources including a [website](#). Universities are working on GIS in schools, roadshows and multidisciplinary science summer Schools.

Queensland SSSI and SIBA in Queensland have created a careers website and promotional materials called [Destination Spatial](#).

There is an excellent web-based public media project in the US called [The Geospatial Revolution Project](#). It engages the viewer with examples of where ‘spatial’ fits in and short, sharp explanations from experts who are excellent communicators. An entertaining and educational presentation by Industry visionary Peter Batty to CIOs at the Walis forum in Perth, is available on [vimeo](#).

There are videos on youtube giving examples of spatial information, technology and [careers](#). It would be useful to be able to extract the first few minutes or so from many of these videos before they get into technical detail.

But these resources are hard to find if you don’t know about them – and especially if you don’t search for ‘spatial’ or ‘GIS’.

One non-spatial industry initiative that has achieved [mainstream press coverage](#) is the gov2.net.au [Mashups Australia](#) competition. It is supported by the [OpenAustralia Hackfest](#) hosted by Google and urges developers to

“Build a cool application using data from <http://data.australia.gov.au>”

This is ground breaking because it is not only unlocking government data and making it easy to find and use, but also it is teaming up ‘hackers’ and harnessing their enthusiasm and their own experiences as citizens. They are developing the apps they want – whether to find all their local government offices or who is the state MP or the body in charge of the road on the street corner they are standing on, showing where the government stimulus money is being spent, building a picture of road accidents (or near misses) in their town or documenting all the free wireless hotspots so they can do their development work anywhere and everywhere. Of the 81 competition entries 55 were tagged as [mapping](#).



Mashups Australia has shown what the future may hold, but from the data side it raises many questions. People in the spatial industry are rightly asking “how is this all going to work in the long term?” Can existing arrangements adequately meet the data demands of this new innovation and of its consumers? If not, what needs to change? If the quality isn’t there, who will pay for improving it and creating the framework to deliver it sustainably? What responsibility should government take and indeed, which part of government? Raising public awareness and expectations brings challenges and opportunities and we will be following developments closely.

6 Opportunities

The Associations of other industries and professions are an ideal vehicle for us to learn more about our target markets and then to educate them. There is one for every industry and profession and their members look to them for interesting new ideas, education and professional development points. They offer us a ‘one stop shop’ to learn from them about their members needs and welcomed our initial contacts.

It may seem a daunting task to tailor examples, demonstrations and scenarios to every audience but many exist already and it should be possible to build on them. Bringing them together in a portal with youtube videos, webinars, scenarios and presentations would eliminate duplication of effort and make it so much easier for members of our industry to seize

awareness raising opportunities. The underlying technology needed to show insurance executives where their 'at risk' policy holders are or bankers their most valuable clients, may not require a lot of effort to tweak but it is very important to do that tweaking so that the audience 'gets it'.

It would also encourage people to develop examples and scenarios if they knew they would be widely used. A scenario for lawyers could run through the processes, data and technology involved in real life events such as a contractor punching the coordinates of a house into his GPS and demolishing the wrong one! (It happened). Spatial professionals and lawyers would both learn a lot from the experience.

The Australian Information Industry Association (AIIA) and the Australian Computer Society (ACS) run regular seminars for their members. Jointly they run [National ICT careers week](#) in July. The AIIA represents 450 ICT companies, from individual consultants to the world's leading multinational corporations. ACS members range from CIOs to programmers.

"Extreme science" engages school children. There is a [video on youtube](#)

[STELR](#) 'Science and Technology Education Leveraging Relevance' is a national education initiative to encourage the study of science, technology and engineering. It shows how they are relevant and crucial to solving climate change problems. Spatial should be part of it.

There are industry conferences, the Gartner CIO forum, The Total Environment Centre. The Dealersgroup ran a Technology in Sustainability seminar in September. They were not aware of 'spatial' but interested to learn more.

In NSW the [Department of Industry and Investment](#) runs free seminars to help new businesses grow and succeed. This could be an excellent way to demonstrate to hundreds of new businesses how they can check out their target market or geographic area using easy to understand census data mashups.

The news is full of stories crying out for a spatial slant. Finding the best (or least worst) location for a wind farm; rising sea levels and property prices; swine flu; coping with a population of 35 Million by 2050. There is ample opportunity to demonstrate how spatial integrates knowledge – not necessarily by giving the spatial industry a high profile in itself, but by giving a high profile to the value and understanding we deliver.

December 14, 2009

George in a spin over noisy wind power ...

DEBRA JOPSON
September 21, 2009



Blown away... George McLaughlin and his dog, Scooter, on the Tarago property he has left because of the noise from the nearby wind farm. Photo: Glen McCurtayne

GEORGE McLAUGHLIN'S property has been on the market for five months, but after his new neighbour, Capital Wind Farm, fired up its turbines about a month ago, he decided to move out even if he cannot sell.

While Kevin Rudd was pushing global solutions for climate change in New York at the weekend, in NSW the battle between wind farms as planet-saving sources of renewable energy and residents who say they destroy rural life is coming to a head.

7 Findings

Lack of understanding is inhibiting the uptake of spatial technology, data availability and investment in quality improvement. However, several significant factors now give us the opportunity to change this.

- Public awareness of spatial (though not by that name) has grown enormously through Google Maps, SatNav and GPS. There is a thirst for knowledge from colleagues and professionals.
- Hugely complex problems such as climate change and population growth are at the forefront of debate and cry out for spatial to make sense of vast amounts of disparate data.
- A cultural change in government is unlocking public data (Parliamentary enquiries, data.australia.gov.au and Mashups Australia). Lack of data has long been an impediment to realising the true value of spatial.
- Social networking and online tools such as blogs, wikis, forums and youtube are making it much easier to collaborate and share and we are getting much more comfortable with them. They also allow mass communication at minimal cost.

Because 'spatial' covers such a broad spectrum of technologies and applications and touches every facet of society, the industry struggles to find its own identity and lacks a central rallying point.

- There are already a number of good initiatives but they are fragmented across different sectors and organisations and hard to find. This leads to duplication.
- We can learn a lot from gov2.net.au and the Open Source community in the way they exploit social media and networking tools to harness enthusiasm, share freely and build on each other's work. The end result is a far better solution that benefits all parties.

8 Recommendations

- Understand the knowledge needs of our audience(s).
- Lead them by the hand with practical examples and scenarios they can relate to.
- Keep things simple. We are not 'selling out' or trivialising our technology by avoiding technical detail and making it easy to use.
- Use the words 'maps' and 'location' rather than 'spatial' or 'geo-' when talking to people outside our industry.
- Rather than trying to educate specifically about 'spatial', embed it in solutions, showing how it integrates knowledge from other disciplines to solve complex problems such as climate change or in business.
- Share, reuse and build on the profile raising resources that already exist in Australia and around the world.
- Make it easy for people to educate themselves by making what we have easy to find through portals, links and search engines.
- Collaborate using social media and multimedia tools such as youtube, blogs, forums and wikis.
- Look outwards – working with associations from other industries and professions and tapping into wider national discussions such as gov2.net.au.
- Piggyback on initiatives that promote engineering, mathematics and science.
- Start with small achievable steps that deliver a clear message, a measurable result and gather momentum as the benefits of collaboration are seen.

As one reply summed it up

“Instead of trying to educate and impose some image of 'spatial', we should improve our ability to communicate with the world about what interests the world, and then quietly embed spatial, in situations where it is the right tool”.