

Tapping the strategic potential of GIS

Business & Location Intelligence Services

Department of
Communities & Social Inclusion

South Australia

Prepared by Gary Maguire



Introduction


Department for Communities and Social Inclusion (DCSI) Website: <http://www.dcsi.sa.gov.au/>

- The department brings together a range of services and policies designed to support vulnerable people and to help build resilient communities
- The department currently has around 5000 FTE
- Seven Divisions
 - Public housing
 - Disability services
 - Social inclusion
 - State recovery (post major disasters)
 - To name a few....
- Over 20 offices and service outlets cover every corner of the State of South Australia

Gary Maguire

Manager,
Business & Location
Intelligence Services

 gary.maguire@sa.gov.au

 G_Maguire

 Gary Maguire | LinkedIn



Bio: Gary Maguire

Manager of Business and Location Intelligence Services at the DCSI. Currently leading a group of staff who are delivering innovative and exciting solutions to transform the way business visualises and analyses critical information through the use of location based Enterprise technology. These applications are positioning the organisation to build the evidence from information, share its corporate knowledge and deliver improved services to the citizen.

I have held the position of President of the Surveying and Spatial Sciences Institute (SSSI) 2011 to 2013 and is currently the Chair in South Australia. SSSI is an international non-for-profit organisation which provides services to members for the continuous improvement of their knowledge and skills in the geospatial sector.

In 2008 I was recognised as 'South Australian Spatial Professional of the Year'. In 2011 he was recognised by the South Australian spatial community for his 'Services to the Spatial Community' and in 2014 through his leadership DCSI was internationally recognised by ESRI for a 'Special Achievement in GIS'.

I am a Fellow of the Leadership Institute of South Australia (Fellow FGLF), Fellow of the Surveying and Spatial Sciences Institute and a Certified GIS professional in Asia Pacific (GISP-AP).



Dream to change the world

Do you remember when you were a child?

There were no rules in what you could or couldn't do in the future. There were no boundaries in what you could become?

But slowly we have been shaped by others and ourselves over our life's journey. Slowly our dream has been removed, but some have always been true to it.

There is a passion that burns in all of us. We just need to find it and be true to it!



Dream to change the world

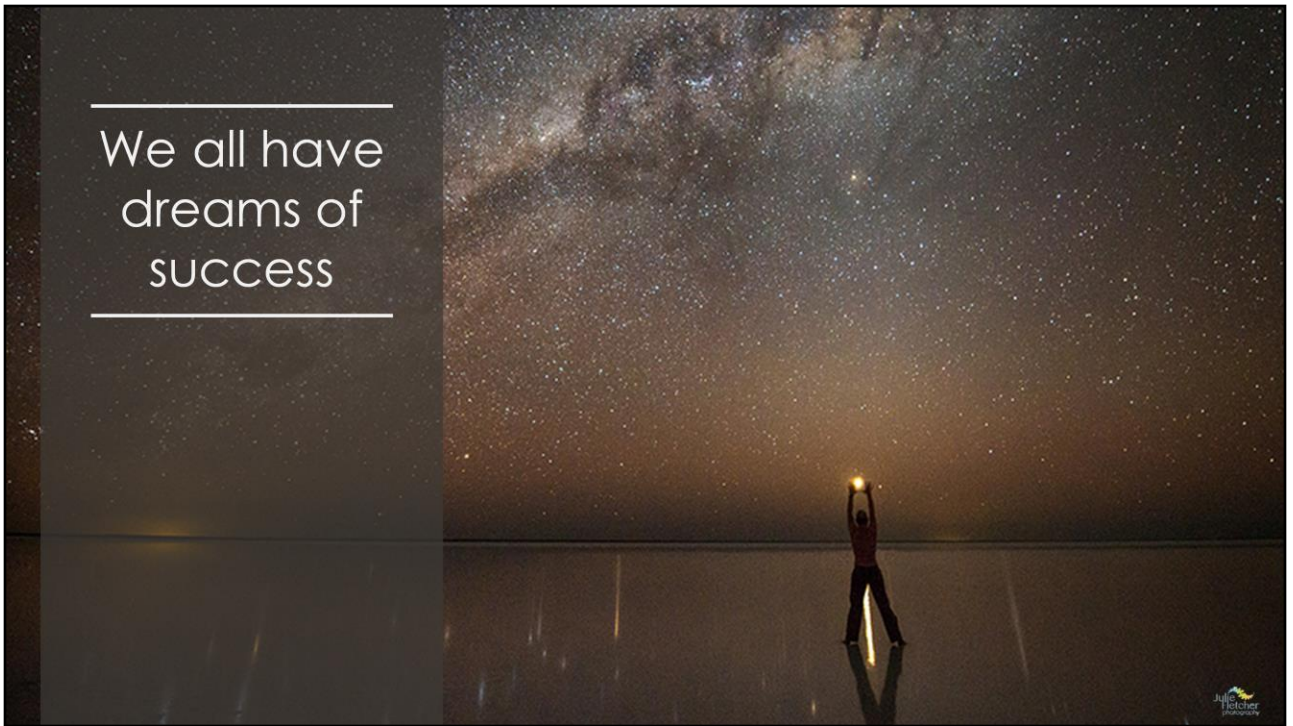
For me, it was the **love of art, design and geography.**

I just love looking at maps, some are masterpieces in their own right.

The Map Gallery at esri UC is an excellent space to learn from others, expand your curiosity.

This image is The Gallery of Maps in the Vatican. It took Danti three years between 1580-1583 to complete 40 panels of the 120 metre long galley.

It is a blending of history, art, design, maps, 2D, 3D and geography.



Dreams to Reality

I like this picture, because every star is an opportunity. Which one is the right one for you? Not every star is the same for each of us and our understand of success is very different.

Audience a question

1. How many of you have a business plan? (keep you hands up)
2. How many of you have a GIS strategy? (keep you hands up)
3. How many of you have it endorsed by your executive team or CEO?

Note: From my past conversations with senior managers and GIS Professionals globally not many have a GIS strategy

My question is why don't you?

We all have dreams, a vision for a better place, better outcomes, improving our organizations capacity, enrich the lives of other, and the list goes on....

We all understand that our visions are not independent and we must value add to our organizations strategy, help deliver it goals.

A strategy is the articulation of the dream

Our Vision:

For location information to enhance DCSI decisions
and drive better outcomes for our citizens



Dreams to Reality

Big question is how do we dovetail our GIS dream with the organizations vision?

As I said to my CE one day in the building foyer (late 2004) - "My vision is to get everybody using GIS, even if they don't know it"

Today you see my teams vision for the department in this slide. Three key points:

1. Location information = GIS
2. Enhance DCSI decisions = evidence
3. Drive better outcomes = performance



Geo Services by DCSI

So how do you line a vision with activities, solutions or vice versa?

Over the next 30 minutes I will take you on a journey of how in 10 years I've taken the organisation from a single ArcView 3.2 to an enterprise systems that is pervasive in the business today.

All of these geo-services on the slide started out with a dream by an individual, the team or a business unit.

At DCSI we have taken the approach of branding products and not naming them by technology.

It creates unique customer ownership to the solution.

Reference: Public DCSI GIS applications can be found at <http://dcsi.sa.gov.au/innovation-hub/maps-and-apps>



Reflection to Effect Change

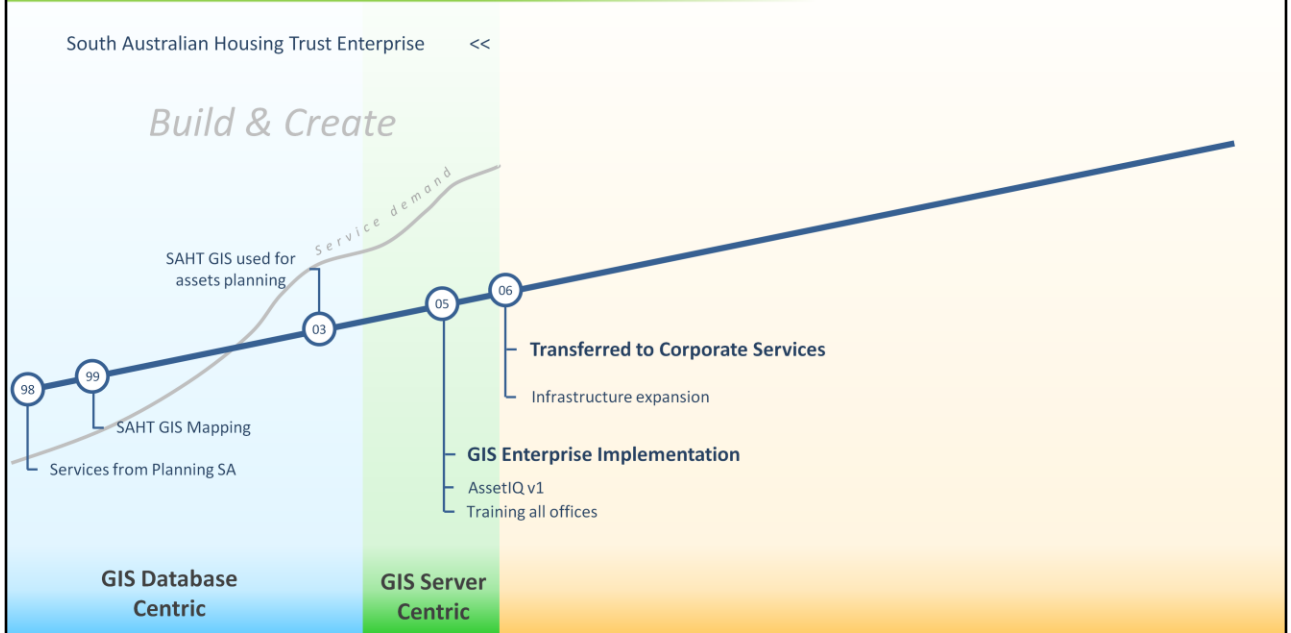
Before we go forward, we should look back at the past.

Who in the audience looks back on their work for the past 12, 24, 36 months ?

In reflection where are the success, the failures. Most importantly what are the learnings for each.

Get this right and it will help us setup the future.

DCSI Transformational Path



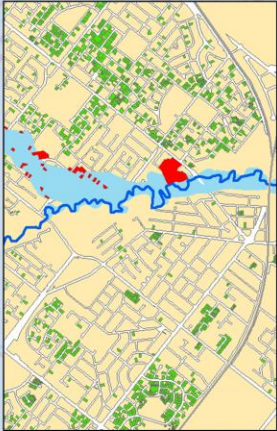
GIS Services Reflection 1998 to 2006

Reflect on the my story using GIS in an department.

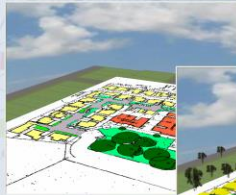
Highlight (2003) - the need for an enterprise GIS – why? – repeatability, increased access to spatial information for asset management.

Failures (2004) – cost recovery model – everybody else thought it was my job to find the money for their projects that used GIS. This was not an effective use of my time and therefore an new financial model was developed by myself and the team.

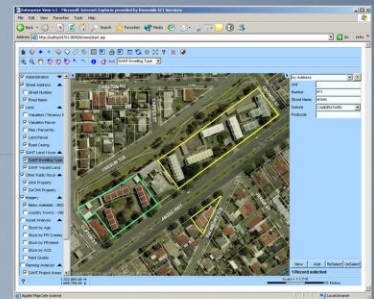
Housing SA (SAHT) 2003 - 2006



Housing SA land at risk of flooding from Little Para River - Salisbury North



Yield potential - concept drawings into 3D scene



Web based GIS Application

Examples 2003 to 2006

1. (left) Asset risk – flood modelling
2. (top right) High resolution imager for ground maintenance
3. (centre) Yield potential – 7 parcels of land / 14 dwellings into 31 mixed use dwellings



The Choice – Follow or Lead?

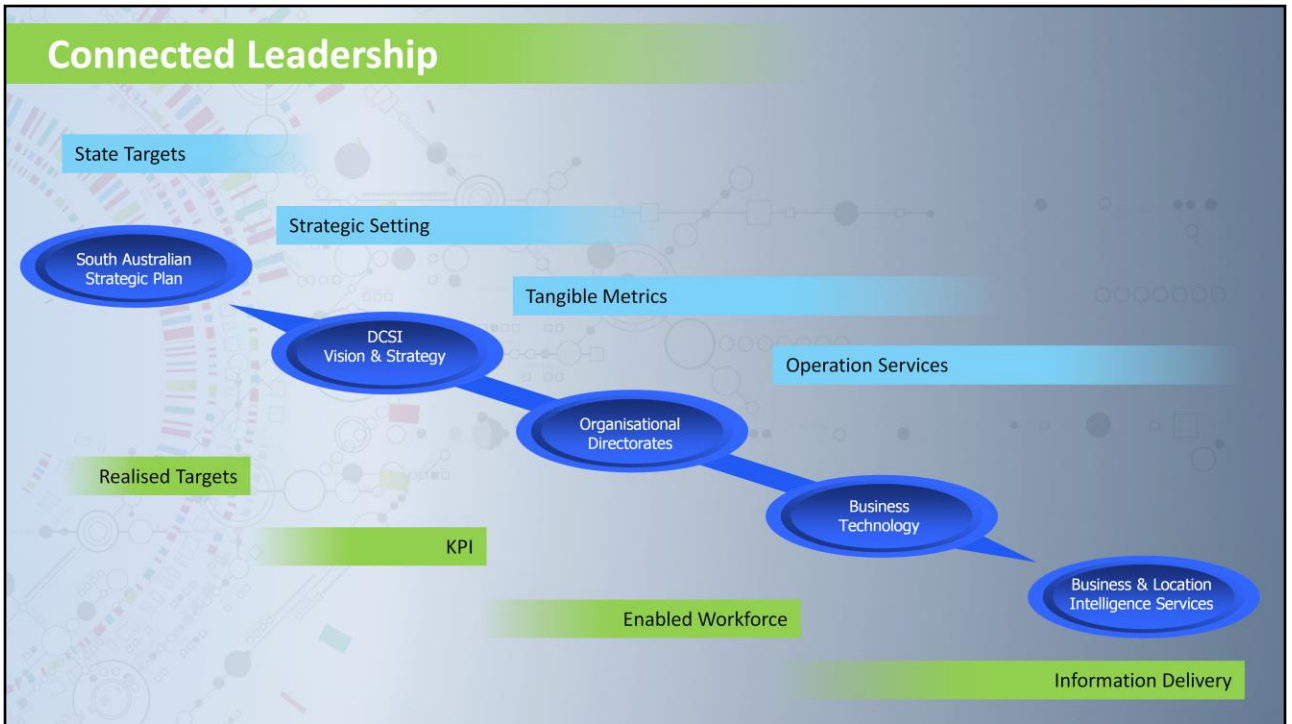
In 2006. I was on vacation in another state of Australia.

Received a phone call - I was given a choice by the CEO of the Department.

She said my team and I can stay in the Housing Trust or apply geospatial technology to the whole department. You have 24 hours.

The choice was - be a leader or be comfortable and stay. I remembered my statement to her back in 2004 *"My vision is to get everybody using GIS, even if they don't know it"*

I took the path that didn't exist and become a leader of GIS.



Connecting GIS through leadership

First I need to know how, and where GIS fits in the corporate KPI's.

Where is my greatest support going to come from?

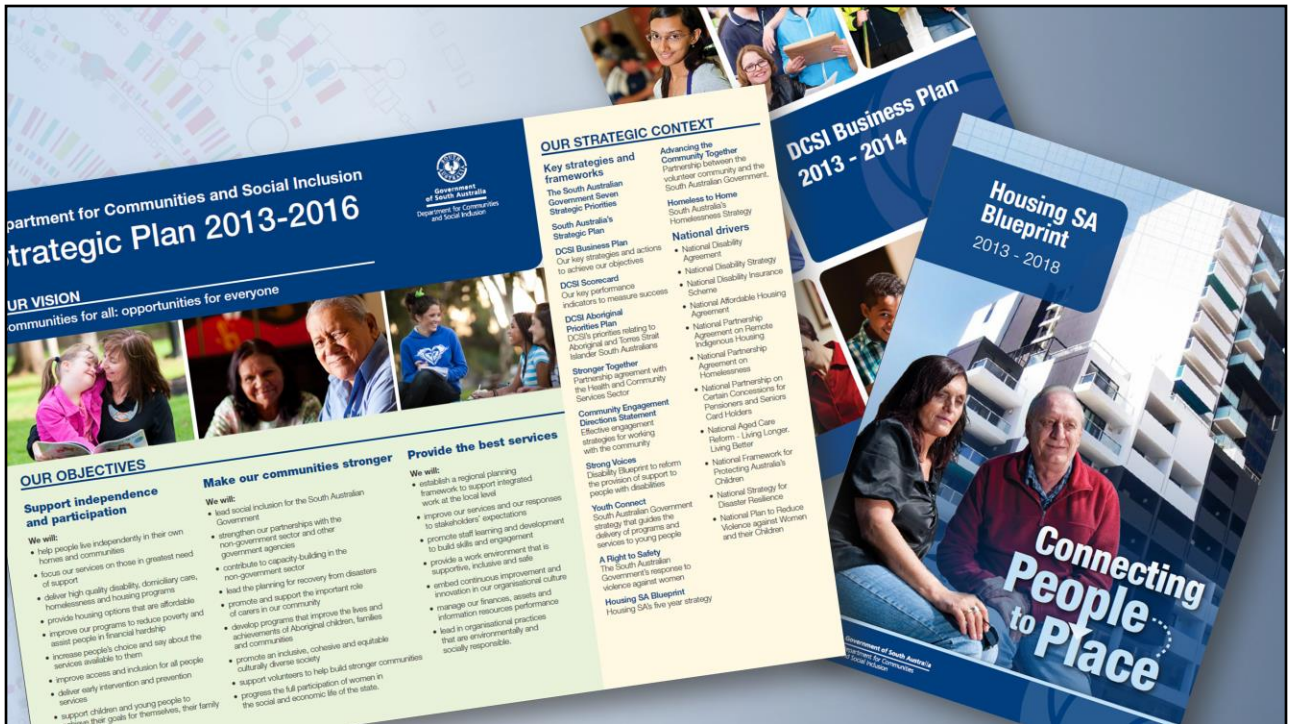
As a leader you need to be on the Dance Floor (operations) and on the Balcony (strategy)

Balcony

- Line of sight approach
- Alignment of business objectives with technology advancement
- Lead GIS without telling people what GIS is

Dance floor

- Understanding business capability and value proposition
- GIS team capacity and knowledge for delivery
- Regularly engage with stakeholders
- Attend meeting that had nothing to do with GIS



Organisational Strategy – do you fit in?

Look at these documents – these are my organization strategy.

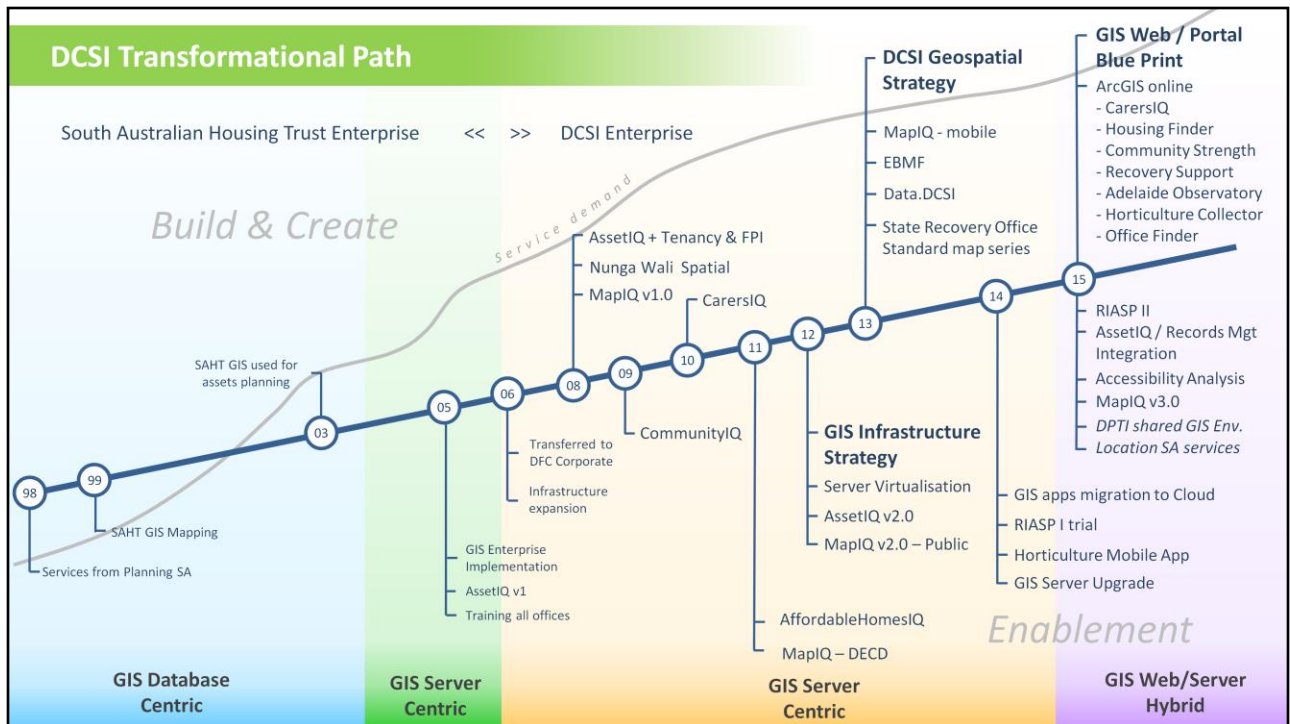
There is no direct link in any of these strategic documents to GIS or visualisation of information.

The closest link is under “Provide the best services” Dot point 6 - “Manage our finances, assets and information resources performance”.

You must be able to read between the lines and extract the gold nuggets.

Under ‘Make our communities stronger’ there are two examples where GIS has a role:

- Contribute to capacity-building in the non-government sector
- Lead the planning for recovery from disasters



GIS Services Reflection 2007 to 2015

Today's build and create world is nearing to an end if government is going to be effective in the future. As a GIS Professional our job is to enable others. Provide the best platform and services. Help and guide them to make good decisions through better understanding and the use of their data.

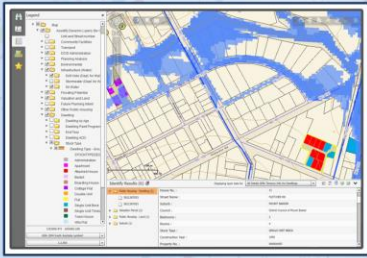
I like that statement by Jack Welch, CEO of GE *"When the rate of change outside exceeds the rate of change inside, the end is in sight"*

Our role is to help our organization accelerate at or near to the same pace of the GIS and technology revolution.

Building everything will not work, government just doesn't have the resource. There has to be a better way, like COTS.

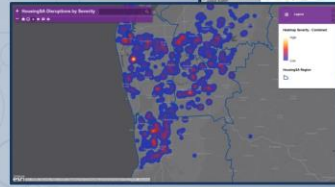
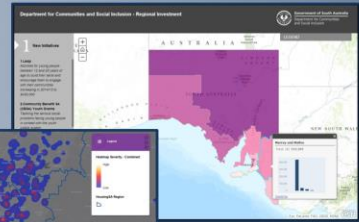
Look at the past three years – we have tripled our output with no staff increases. Most of this is due to COTS.

DCSI Enterprise 2007 - 2015



AssetIQ - Public Housing Asset Management

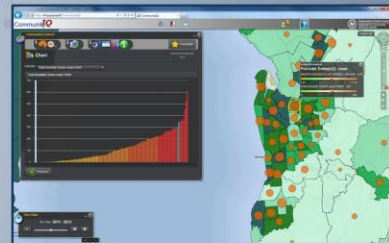
GeoAccounting – Grant Investments



Hotspot of Disruptive Tenants



Mobile Workforce – MapIQ on the Go!
& Horticulture Collector



CommunityIQ – Evidence Based Management Framework
Article – esri ArcNews, Winter 2013/14 (Vol 35, No 4)

Geo-services product examples

Products - AssetIQ, esri's AGOL services, MapIQ on the GO! and EBMF.

These solutions would not have happened if the team wasn't a leader in GIS or having the skills to build a strategy to articulate a vision of GIS in an organization.

Leading excites the sole, created personal ownership, is very rewarding to those who don't give up.

It is a lonely journey some days, you and your team might be the last ones out of the carpark in the evening, but when it comes together it's an amazing place to be in.



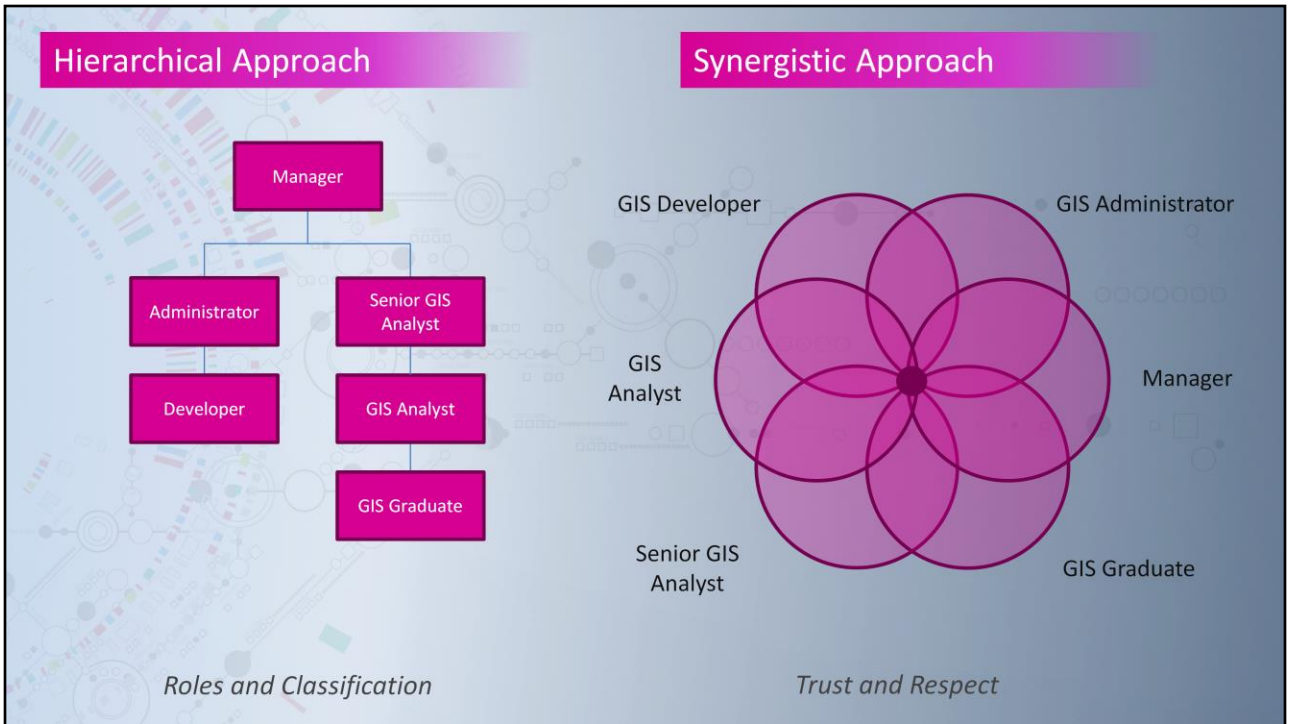
Relationships Always Matter

If we “Lead” then relationships building is a very important element to success like:

- Integrity
- Collaboration
- Sharing the journey
- Engagement

I like to say to my team “technical skill may get the job done, but soft skills and relationship building will create better outcomes”.

So lets look at two relationships – the teams and the organization (next slide).



Team Relationships

1. Standard team structure - Hierarchical Approach - Classified or arranged according to various criteria into successive ranks or grades.

I suggest a better way to describe the team.

2. Synergistic Approach - Cooperative, working together, interacting, mutually stimulating, increased productivity.

As a manager you can operate in both spaces:

- One for governance and compliance
- Other to create high performing team

Standard Organisation Chart

```
graph TD; Minister[Minister] --> CEO[CEO]; CEO --> ED1[Exec Director 1]; CEO --> ED2[Exec Director 2]; CEO --> ED3[Exec Director 3]; ED1 --> D1A[Director 1A]; ED1 --> D1B[Director 1B]; ED1 --> D1C[Director 1C]; D1A --> M1A[Manager]; M1A --> S1A1[Staff]; M1A --> S1A2[Staff]; M1A --> S1A3[Staff]; M1A --> S1A4[Staff]; M1A --> S1A5[Staff]; D1B --> S1B1[Staff]; D1B --> S1B2[Staff]; D1B --> S1B3[Staff]; D1B --> S1B4[Staff]; D1B --> S1B5[Staff]; D1B --> S1B6[Staff]; D1C --> M1C[Manager]; M1C --> S1C1[Staff]; M1C --> S1C2[Staff]; M1C --> S1C3[Staff]; M1C --> S1C4[Staff]; M1C --> S1C5[Staff]; ED2 --> D2A[Director 2A]; ED2 --> D2B[Director 2B]; D2A --> M2A[Manager]; M2A --> S2A1[Staff]; M2A --> S2A2[Staff]; M2A --> S2A3[Staff]; M2A --> S2A4[Staff]; M2A --> S2A5[Staff]; M2A --> S2A6[Staff]; D2B --> M2B1[Manager]; M2B1 --> S2B1[Staff]; M2B1 --> S2B2[Staff]; M2B1 --> S2B3[Staff]; M2B1 --> S2B4[Staff]; M2B1 --> S2B5[Staff]; M2B2[Manager]; M2B2 --> S2B6[Staff]; ED3 --> D3A[Director 3A]; ED3 --> D3B[Director 3B]; D3A --> M3A[Manager]; M3A --> S3A1[Staff]; M3A --> S3A2[Staff]; M3A --> S3A3[Staff]; M3A --> S3A4[Staff]; D3B --> S3B1[Staff]; D3B --> S3B2[Staff]; D3B --> S3B3[Staff]; D3B --> S3B4[Staff]; D3B --> S3B5[Staff]; D3B --> S3B6[Staff];
```

The chart illustrates a standard organizational structure. At the top is the Minister, followed by the CEO. The CEO oversees three Executive Directors (1, 2, and 3). Each Executive Director manages a set of Directors (1A, 1B, 1C for ED1; 2A, 2B for ED2; 3A, 3B for ED3). These Directors manage Managers, who in turn manage Staff. The Staff are organized into a GIS Team, which is a cross-functional unit reporting to the Executive Directors.

Organizational Relationship Chart

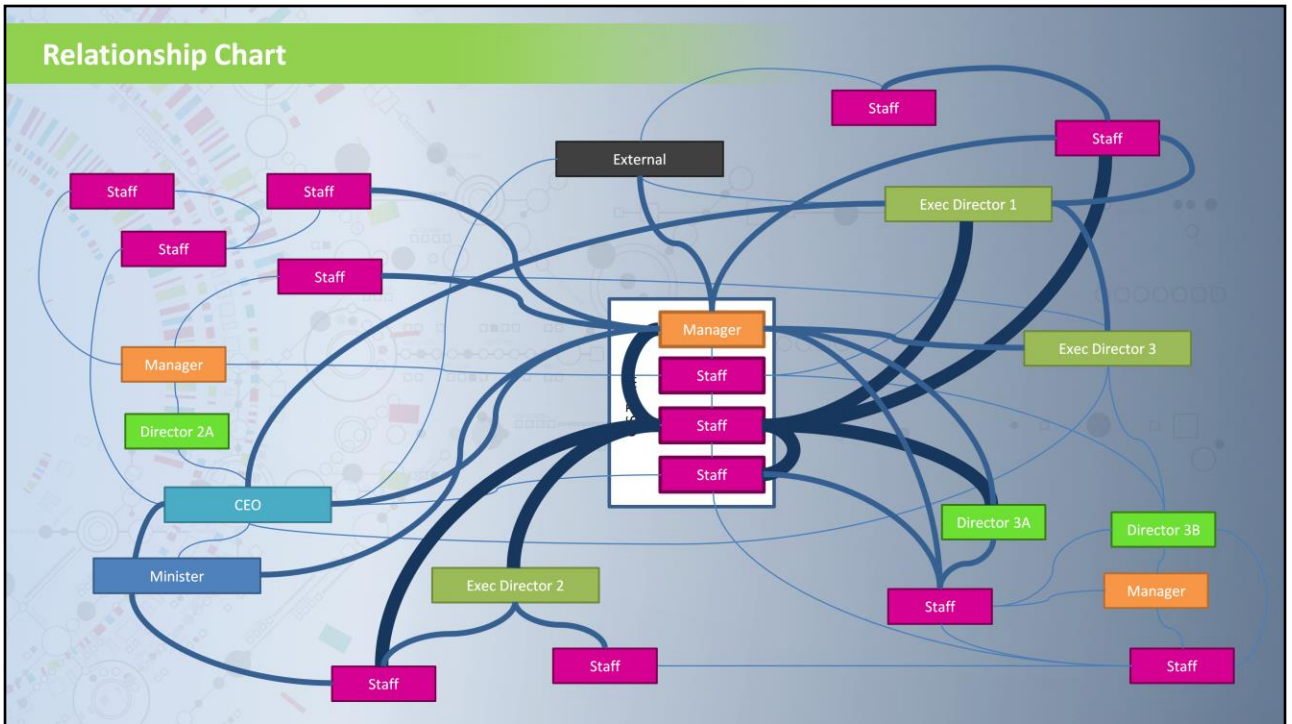
Let's expand this into an organization.

Is this how relationships work in today? UP and DOWN (for some organizations it's a must, but not for everybody else).

Relationships require some effort to maintain and sound communication.

They work ACROSS, UP, DOWN and DIAGANOLLY in reality in any directions and they jump across people.

As in any relationship, you must be willing to give, share and support, not just take. They must be mutually beneficial to both parties for success.



Personal Relationship in an Organisational Chart

This looks more like a connected group. Look at relationships in your organisation just like LinkedIn. Relationships are organic that moves with people (in, across and out of an organisation). Not all relationships are equal and high-racial as is a standard organisation chart.

Understanding relationships help understand where partners and advocates of GIS are within the organisation. They are not necessarily senior managers or executives.

Some relationships are short term and some will be long term, understand this and you can find your next “GIS champion” who may have more influence than you expect.

This leads me to the next point Communication.

Are you
speaking my
language?



Are you speaking my language?

We have all heard the statements around good communication.

I have found over the years GIS professionals talk great geo jargon. But not the right words to that capture the minds of executives and clients.

Often it is said to executive or a senior manager “I was at a conference recently and saw some really exciting GIS technology that will make a really good map with your data, its in the cloud and mobile too!”.

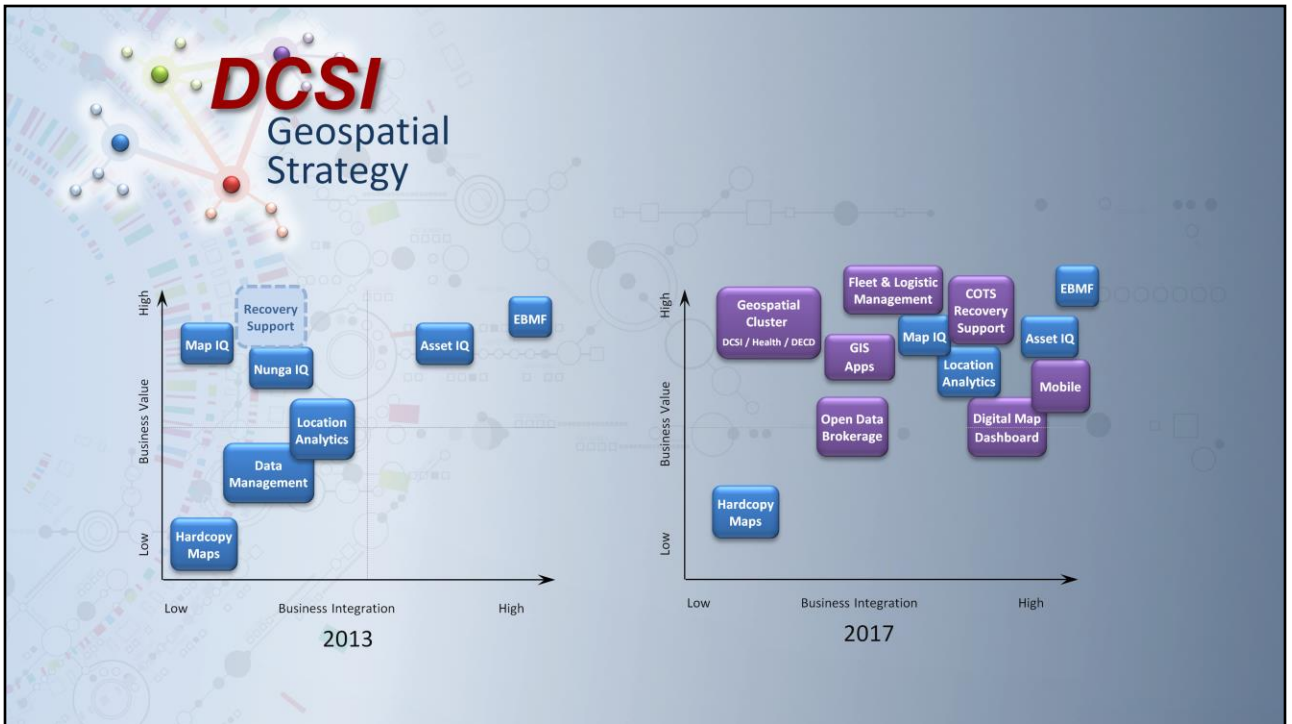
You are excited, but are they? You lost them at “really exciting GIS” then you made them think “isn't the cloud risky?”

What make these people tick – productive workforce, efficiency gains, tangible benefits, ROI, risk mitigation.

Maybe its better to say “I was at a conference recently and I notice there are some opportunity to create staff efficiencies and cost savings through our existing technology provider”.

It's the same message, but in their language.

The next step in maturity of GIS in an organisation is having documentation that is in the executive language.



Building DCSI Strategy

For us it was a Geospatial Strategy around geo-services.

These two diagrams are on page two of our strategy inside the executive summary. Basically it tells everybody our vision.

Why a strategy?

- Maturity reached a point where business required an understanding:
 - Current investment of GIS
 - Effective service delivery in the future
 - A language to articulate benefits for non GIS professionals
 - Describe the future of information visualisation

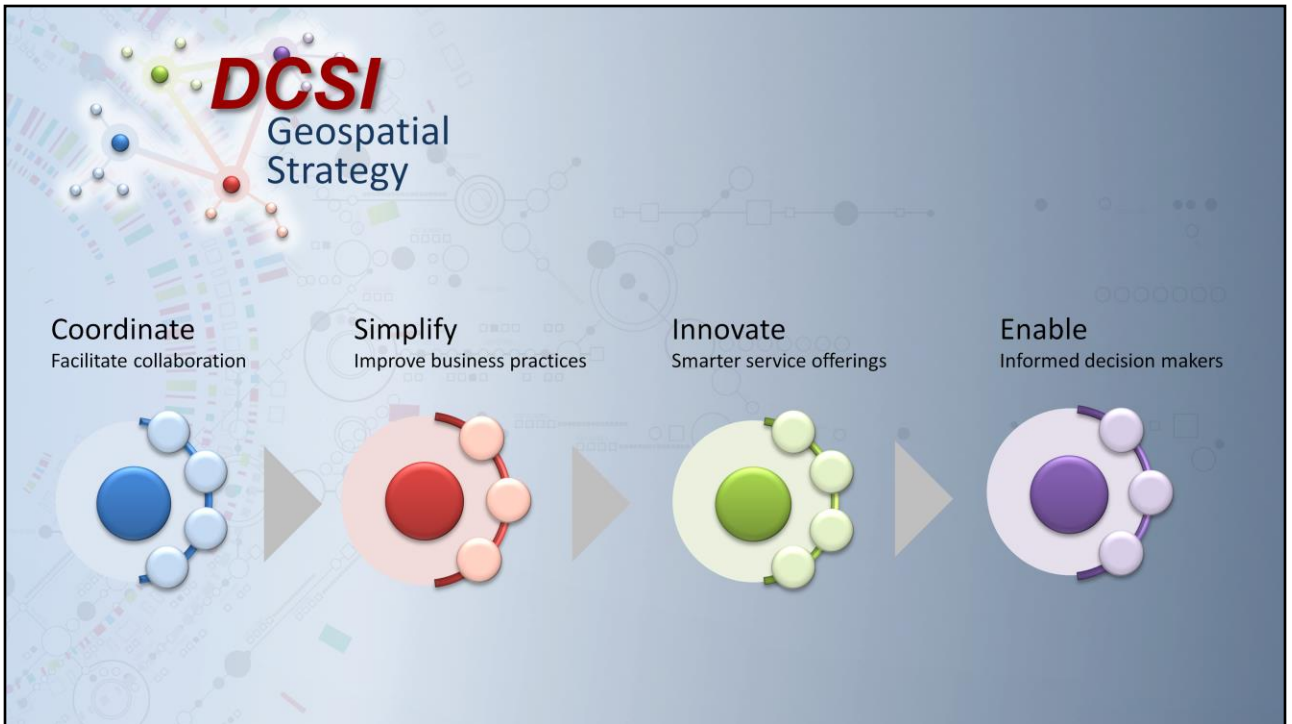
Executive want hear about benefits. They come in two forms – Tangible and Intangible:

- Tangible – revenue generation, resource cost reduction, cost avoidance, productivity efficiency, increased regulatory compliance, health and safety
- Intangible – enhanced customer satisfaction, improved staff well being, improved services offerings

The process I worked through for DCSI Geospatial strategy was:

1. Agreement from executive team to develop a strategy.
2. Gain principle support from CIO.
3. Establish a working group of executives, business managers, operators and IT staff.
4. Set up a terms of reference.
5. Build a sense of urgency.
6. Understand business deliverables and organisations strategic alignment (line of sight).
7. Collaboratively build a picture of today and where we want to be in the future.
8. Bring everybody along for the journey.
9. Delivery a strategy in a common language that everybody can understand and see the benefit.

Do these basic steps and you will find champions that will extend GIS reach in your organization.



Delivery of DCSI Geospatial Strategy

Four key principles define the Geospatial Strategy with three or four KPI's under each principle.

Coordinate

- Establish Geospatial Council - Participate in WoG Cluster - Information standards resulting improved service offerings - Collaboration for better outcomes

Simplify

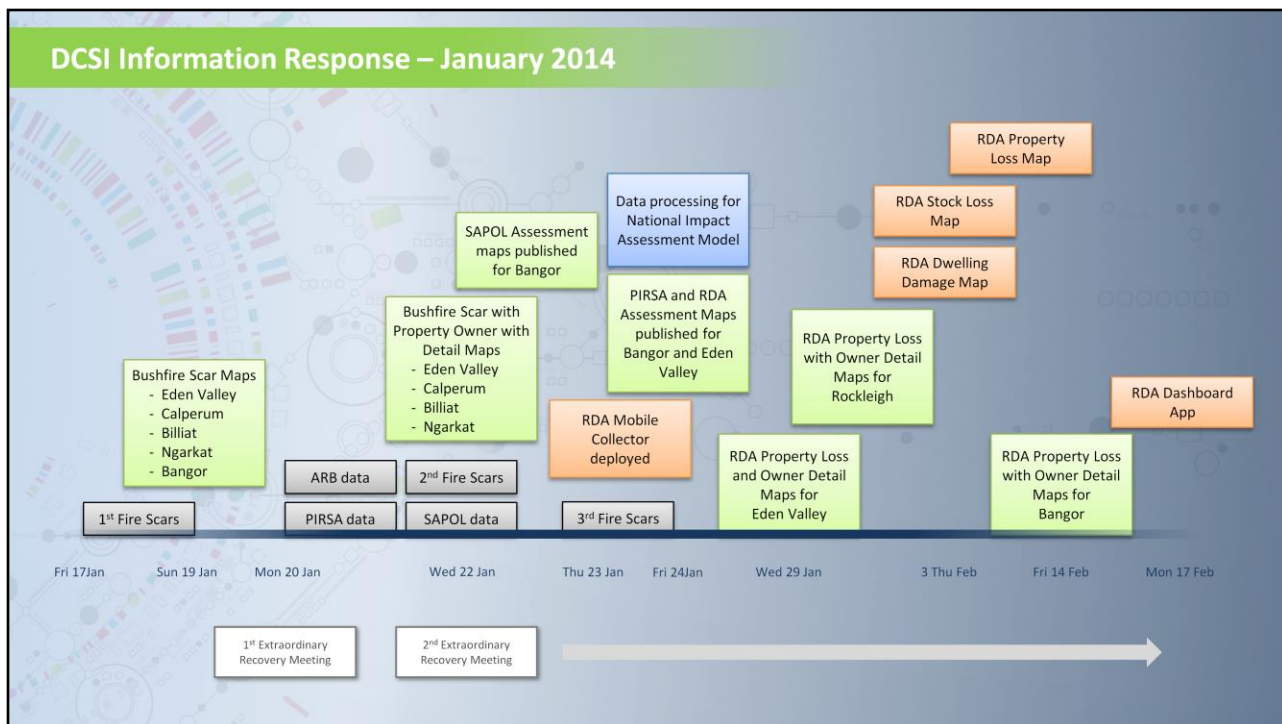
- Technology that is flexible, scalable and cost effective - Single Point of Truth - Self Service approach

Innovate

- Connected location aware workforce - Share everything - Advance the use of location based tools - Vibrant future through short agile sprints

Enable

- Digital by design - Support business needs - Alternative and appropriate services



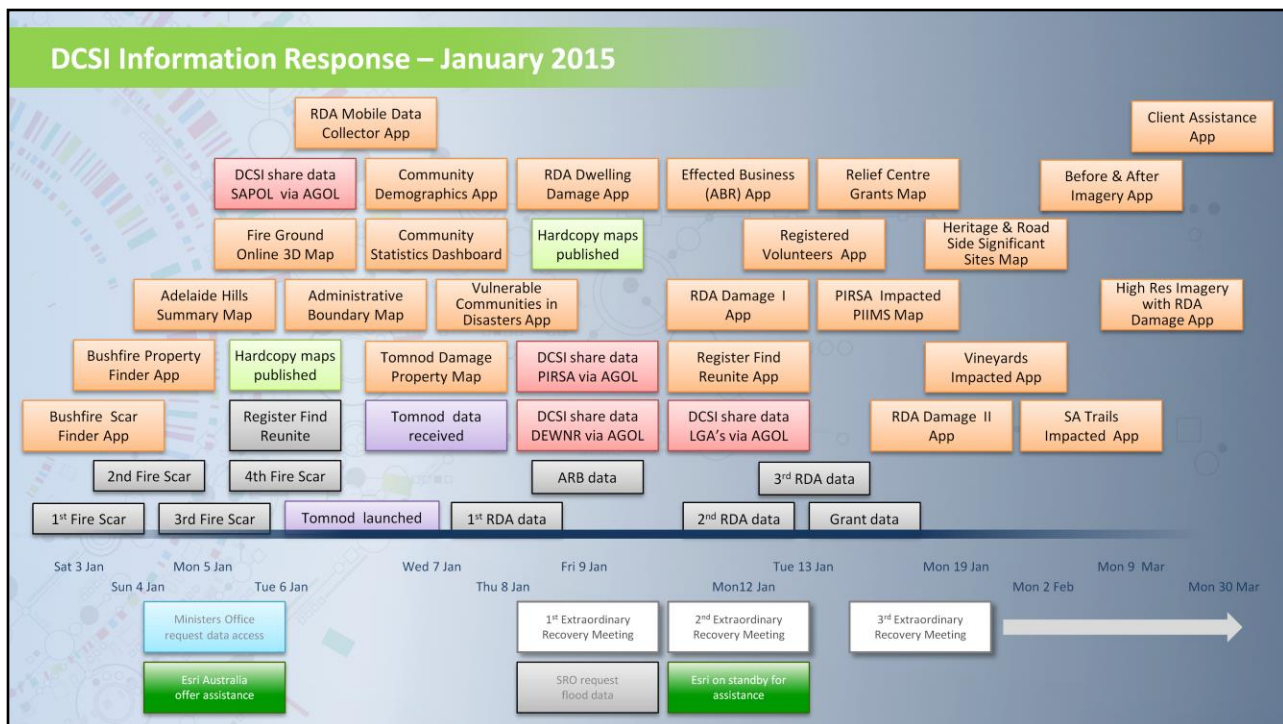
Pre DCSI Geospatial Strategy

Looking back how BLIS delivered information for the 2014 bushfire season.

You can see a lot of products been produced as hardcopy mapping (green).

This required higher number of resources and person hours to produce products (3.5 FTE's allocated).

A few ArcGIS Online maps and applications (Orange) delivered near the end of the support process.



Post DCSI Geospatial Strategy

Look at how BLIS delivered information for the 2015 bushfire season see a dramatic change in product and service delivery.

There was a rapid delivery response through specific workflow digital maps and applications.

With less resources (1 FTE) on hand in the first five days BLIS could respond in an effective manner until more resources were available (1.5 FTE's allocated).

Strategy Priority - enable

- 1st Extraordinary Recovery Meeting - BLIS had provided the first view of the damage across the fire ground, community and household statistics.

Strategy Priority - coordinate and simplify

- Leveraged named users and group accounts in ArcGIS Online.
- Opened secure access of information to four South Australian government departments.

Strategy Priority – innovate

- Rapid and agile delivery response
- 24 digital maps or applications and 20 datasets were available to stakeholders for decision making within their areas of business.



Reporting and Marketing

Another part that we forget to often is the language of marketing and corporate reporting.

We need articulate GIS with purpose:

1. Awareness that your GIS team exists (GIS is not in our business unit title, because it only makes sense to us. The word 'Location' is generic and everybody understands its about place or geography).
 - Delivered a Geospatial Strategy to increase awareness and acceptance at the executive table.
 - Delivered a technical migration strategy for ICT tech staff to understand GIS is a technology platform moving to cloud services.
2. Promote through branding and name recognition – 'IQ' range of products in DCSI (refer to slide 7).
3. Provide information about products and services – Success Story's.
4. Communicate new products and services – using the intranet where all staff go first when opening a browser.
5. As a governance tool BLIS created two documents:
 - Service Charter to define who we are and what the client can expect.
 - Service Catalogue which tells the client what BLIS can do.
6. When communication is done well, it creates trust and credibility of GIS.



The most important investment - People

I left this to last our people, its the most important part of our business.

At technology conference we always talk about technology, but people are who brings technology to life and create the value in business.

What makes a great team?

The Gallop Organisation interviewed 1.4 million people / 50000 team.

Best teams have many things in common:

- Being Developed
- Good relationships (refer to slide 16)
- Sense of mission (refer to slide 6 & 22)
- Purpose (refer to slide 25)

One clear question predicts most effectively if you are on high performance or low performance team -
At work, do you have the opportunity to **use your strengths every day**?



People Strengths

Question to the audience. Do you know how many people use their strengths at work each day?

Research highlights that less than 2 out of 10 feel their strength are in play at work (Actually the number is 1.7 people out of 10).

If you feel your strength are used everyday, you will be more profitable, more productive and more likely to stick around.

Imagine if we could get one or two more people working with their strength in your team or business. What could we achieve for the GIS community at large?

Imagine how we as GIS Professionals using our strengths everyday could help solve business issues, improve communities and help the valuable. Just like in yesterdays plenary presentation by Bruce Aylward and Former Gov. Martin O'Malley.

So how have I made my team a high performing team?



Building a team to use its strengths

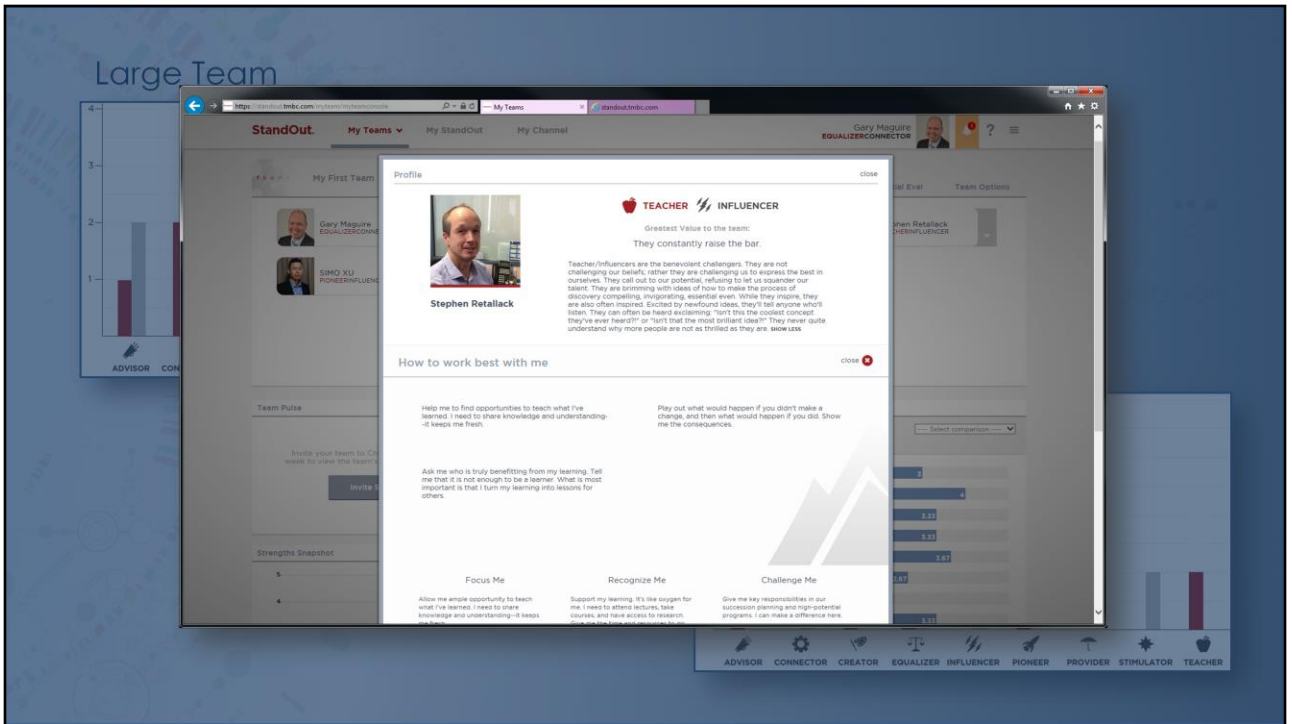
Understand each person's strength, it is everything if you want to create a Synergistic Team Approach (refer slide 17).

These two examples here show a team with a balance approach (I'm using the Marcus Buckingham – StandOut framework). We don't want to have a whole team of advisers, we know what happens then!!

Three drivers to maximise strengths are:

- Awareness of individual strengths
- Education of the importance of each other's strengths and pinpoint strengths and focus on performance (*synergistic approach*)
- Accelerations of the momentum of primary and secondary strengths – training based around the person's strengths to maximise the individual's outcomes

You will always grow where you are strongest. Reflect on where your strengths are and then work on those areas.



Building a team to use its strengths

I use the StandOut Program from Marcus Buckingham. But there are many more out there, pick one that works for you or your organisation might already have a program in place.

Here is Steve my GIS Architect / Administrator.

- His primary strength is a Teacher – he sees potential in people his secondary strength is a Influencer – engages people directly and convinces them to act

When I look at the team synergistic way. He complements my primary strength which is Equalize – keeping the world in balance and secondary strength a Connector – putting two things together to make it bigger than it is now. I add the teams GIS Developer who is Pioneer and influence and so on... Now I have dynamic team. Working with them on their strength and developing opportunities around our strengths creates a high performing team and that uses its strengths every day.



Closing

When you reflect over a coffee tomorrow, the day after or next week. Remember that you :

- Must be true to your dreams,
- Have a vision. Its to lead others on a path that is not there yet,
- Have a strategy, it become your single voice of what value you bring,
- Use the right language at the right time to the right people,
- Respect and leverage peoples strengths for the greater good of your business success,
- Finally think of yourself as a clients in this way -- *Tell me and I'll forget, show me and I'll remember, Involve me and I'll understand*

If you do this, I believe you are going to make your GIS the all pervasive enabler for your business.