

Business Analytics **Forum**

See The Future Of Decision Making

≥ ↘ ↓ 4 ↑ 14 ↗ 3 · 5Ž 2010

Gold Coast Convention and Exhibition Centre Queensland, Australia



Data and spatial visualisation techniques

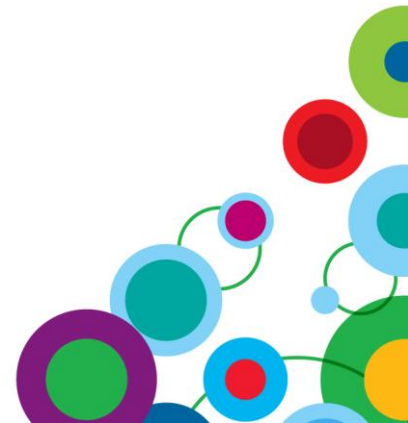
Darren Dadley

University of Technology Sydney



Introduction

- Visualisation techniques
- Location Intelligence

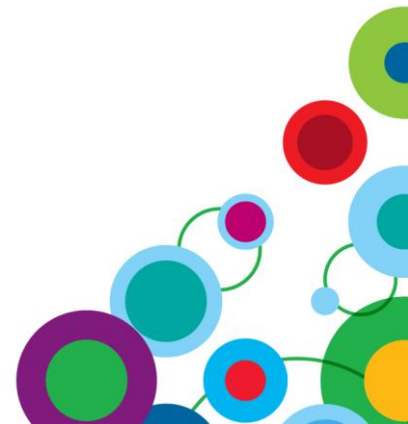




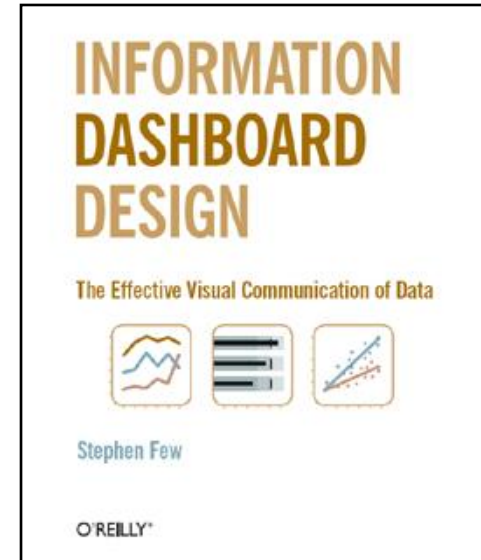
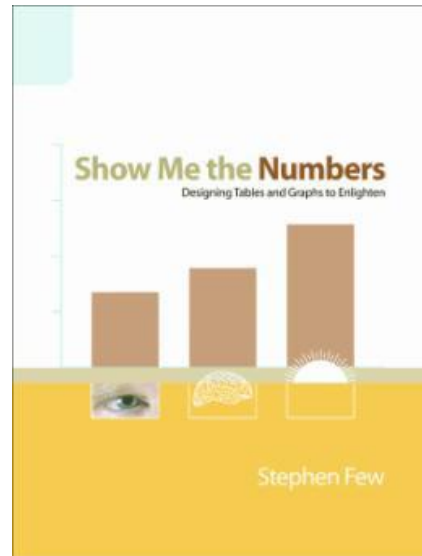
Visualisation Techniques

Darren Dadley

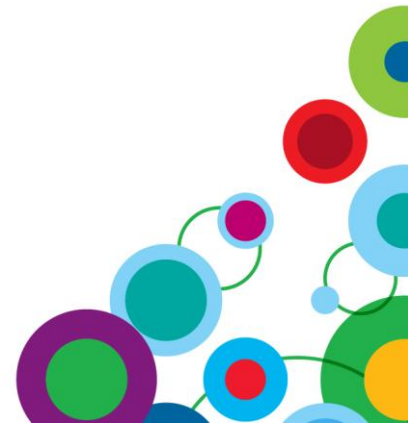
Harman Nagpal



Stephen Few



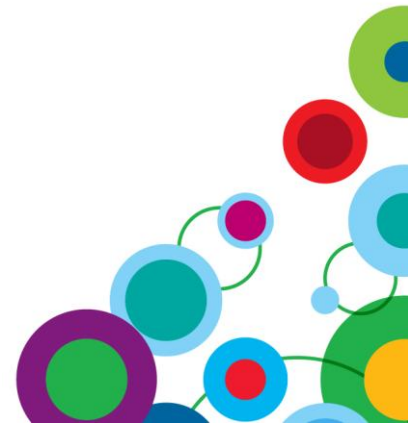
Data visualisation for enlightening communication.
Stephen Few, Principal, Perceptual Edge
sfew@perceptualedge.com





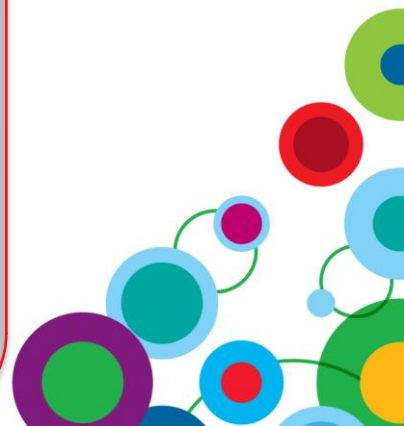
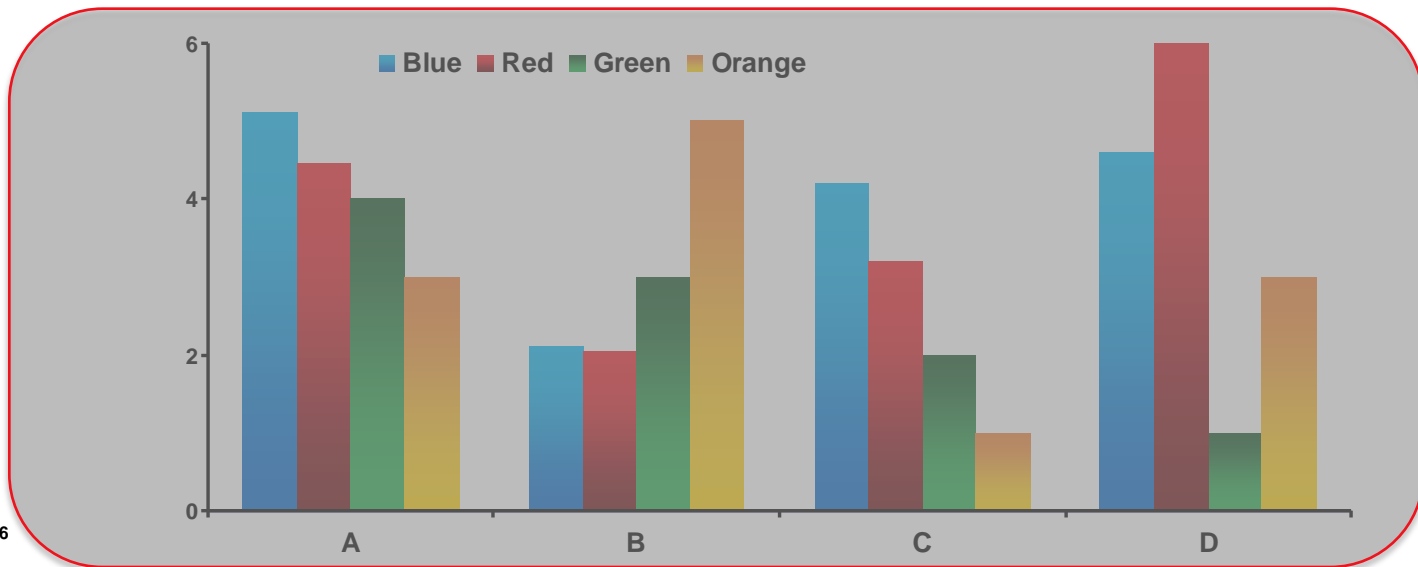
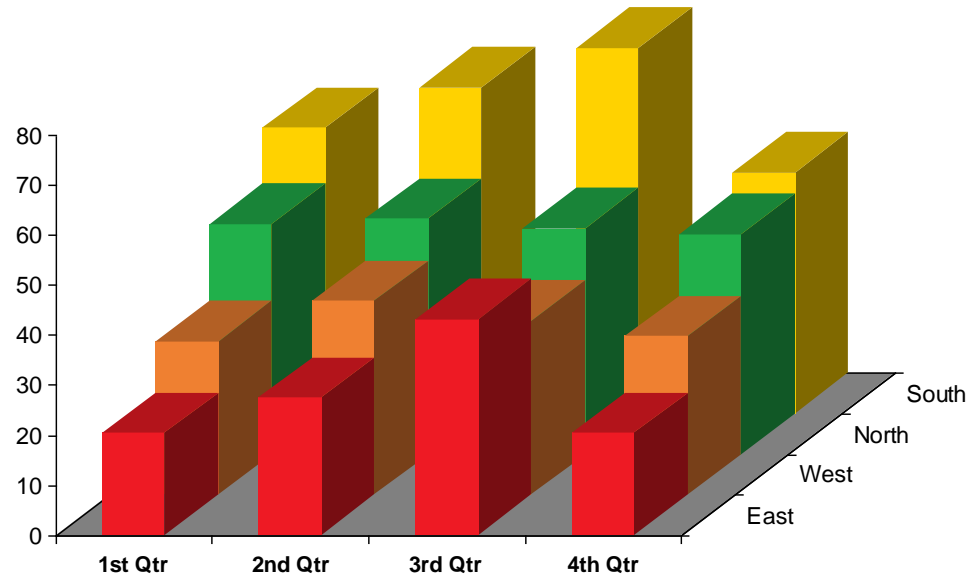
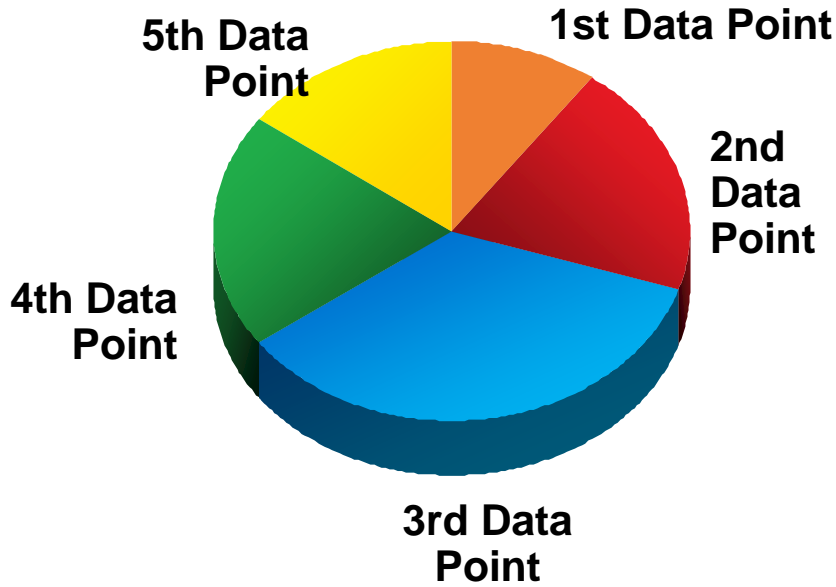
Common mistakes

- Exceeding the boundaries of a single screen
- Supplying inadequate context for the data
- Displaying excessive detail or precision
- Choosing inappropriate or poorly designed display media
- Introducing meaningless variety
- Failing to maintain a consistent theme





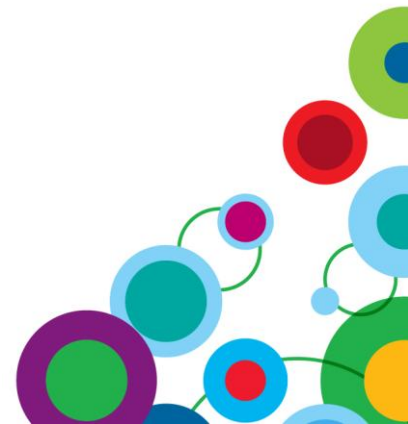
Common Mistake Examples



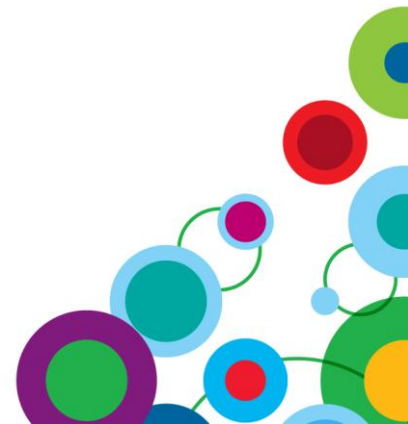
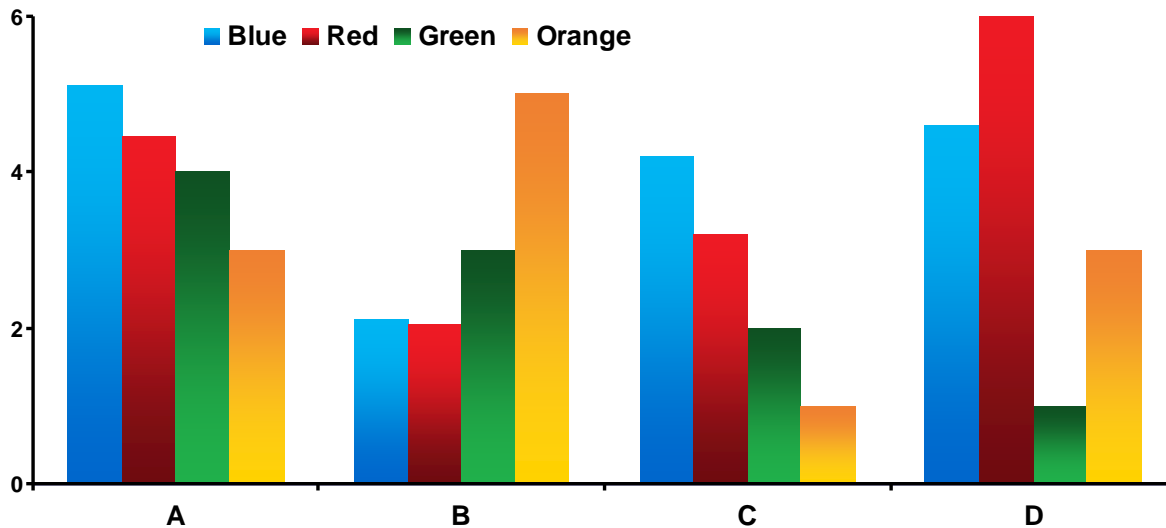
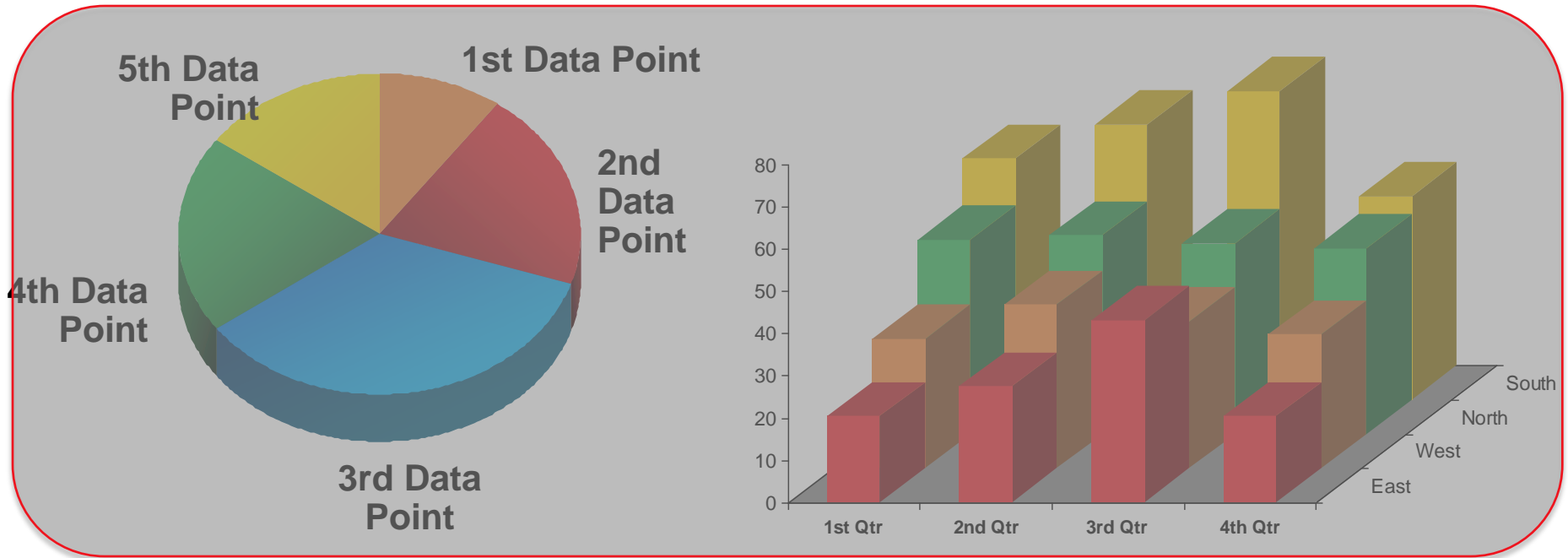


Common mistakes

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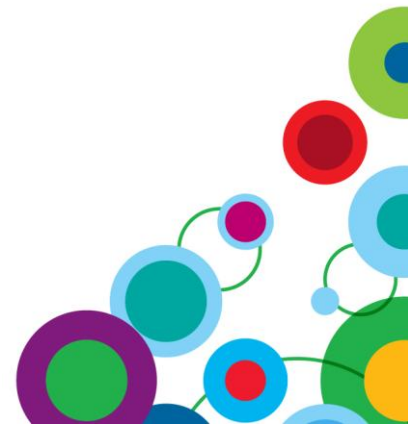
Common Mistake Examples





Design Themes

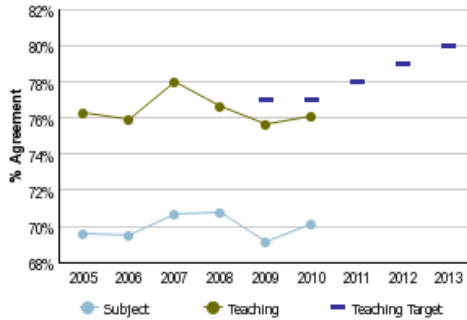
- Visual perception
- Eloquence through simplicity
- Effective Dashboard Display Media
- Usability





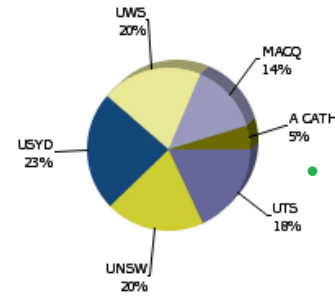
Visual perception

1. Teaching & Subject Quality by Year



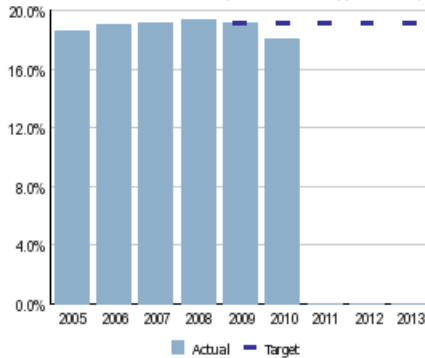
- Subtle colours provide data without the feeling of a sensory overload

2. Distribution of Pref 1-3 Among Metro Uni (2010 - Main Round Applications)



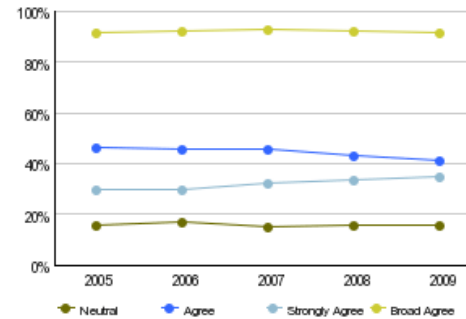
- A pie chart can provide ambiguous information unless accompanied by data. Take the guess work out of the display.

1. UTS Pref 1-3 to Metro Uni (Main Round Applications)



- A combination chart provides information without distracting the user from the 'main' measure

4. Overall Teaching Satisfaction Item (3100) Distribution



- A line chart is a great way to provide a large amount of information over a period of time e.g. benchmark data





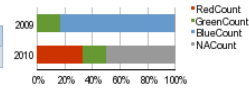
Eloquence through simplicity

ALL DOMAINS	2009	2010
% Blue & Green Metrics	84.2%	8.2%

[KPI / METRIC DEFINITIONS](#)

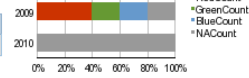
[PRINT](#)

LEARNING & TEACHING	2009	2010
% Blue & Green Metrics	100.0%	16.7%



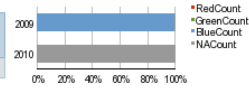
ADDITIONAL INFORMATION
 *RedCount
 *GreenCount
 *BlueCount
 *NACount

RESEARCH PERFORMANCE	2009	2010
% Blue & Green Metrics	40.0%	0.0%



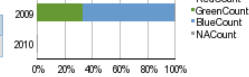
ADDITIONAL INFORMATION
 *RedCount
 *GreenCount
 *BlueCount
 *NACount

ORGANISATIONAL SUSTAINABILITY & CAPABILITY	2009	2010
% Blue & Green Metrics	100.0%	0.0%



ADDITIONAL INFORMATION
 *RedCount
 *GreenCount
 *BlueCount
 *NACount

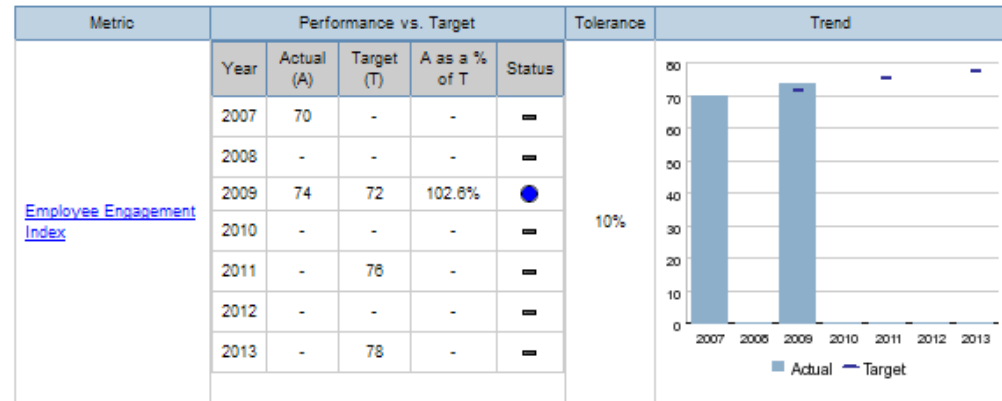
REPUTATION	2009	2010
% Blue & Green Metrics	100.0%	0.0%



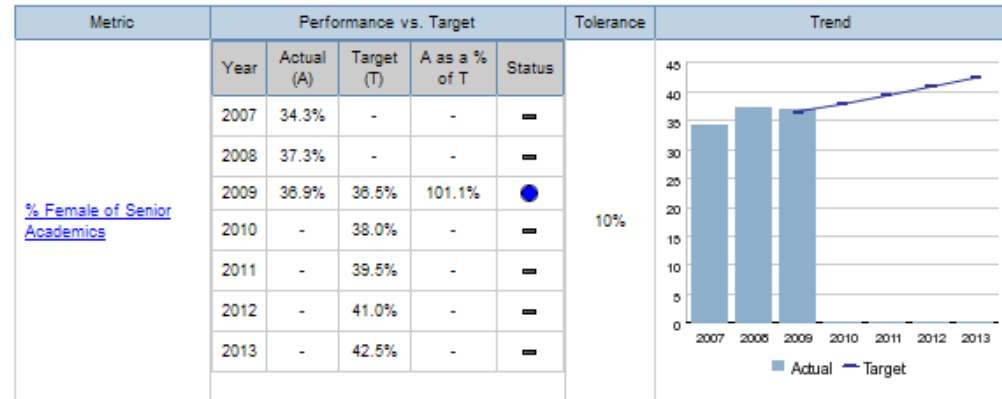
ADDITIONAL INFORMATION
 *RedCount
 *GreenCount
 *BlueCount
 *NACount

- Met / Exceeded Target
- ◆ Within Tolerance of Target
- Of Concern
- Metric not finalized or no target set

OSC1: [Staff engagement](#)



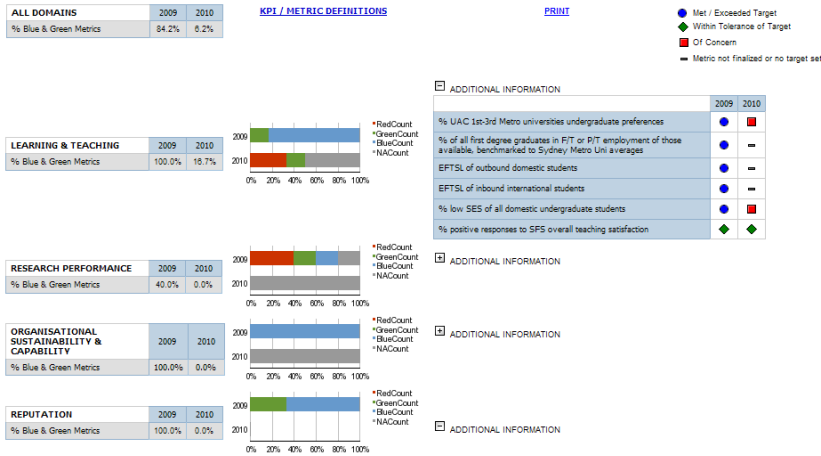
OSC2: [Staff equity](#)



- A combination of charts and crosstabs is utilised to provide access to a large amount of information



Effective Dashboard Display Media



UTS STRATEGIC PLAN

OUR VISION

To be a world-leading university of technology

OUR PURPOSE

To advance knowledge & learning to progress the professions, industry and communities of the world.

OUR VALUES

DISCOVER | ENGAGE | EMPOWER | DELIVER | SUSTAIN |

+ UTS OBJECTIVES AND STRATEGIES:

Research outcomes - HERDC Reported Publications

(Publications are preliminary until after July 15)

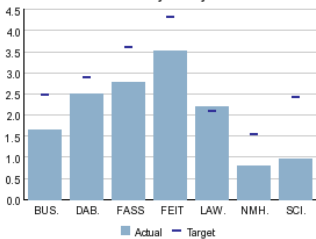


[CLICK HERE TO REVEAL DROP DOWNS FOR FILTERING.](#)

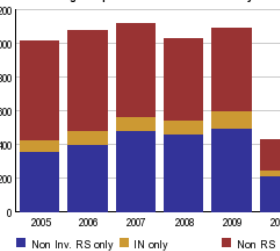
Faculty selected: **All Faculties**

Research Strength selected: **All Research Strengths**

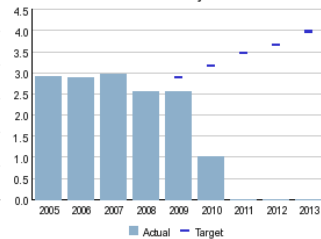
No. of weighted publications per Research Equivalent FTE academic staff by Faculty for 2009



No. of weighted publications - Distribution by Year

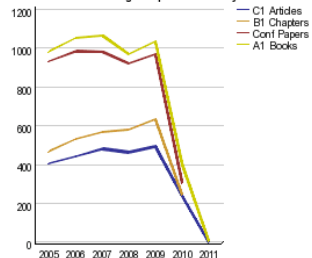


No. of weighted publications per Research Equivalent FTE academic staff by Year

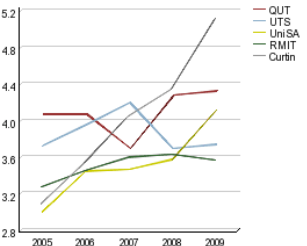


[CLICK HERE TO VIEW DATA.](#)

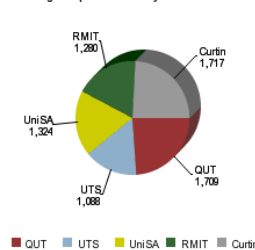
No. of weighted publications by Year



No. of weighted publications / REFTE by ATN benchmark 2005 onwards



No. of weighted publications by UTS Share of ATN 200



2010	Select Status	PRINT
KPI	Metric	Status
Domestic market share	% UAC 1st-3rd Metro universities undergraduate preferences	■
Graduate workplace success	% of all first degree graduates in F/T or P/T employment of those available, benchmarked to Sydney Metro Uni averages	—
Internationalisation of student experiences	EFTSL of inbound international students	●
	EFTSL of outbound domestic students	■
Student equity	% low SES of all domestic undergraduate students	●
Teaching quality	% positive responses to SFS overall teaching satisfaction	◆
Greenhouse gas reductions	Total % reduction in greenhouse gas emissions	—





Usability

UTS Domain Performance



For KPI / Metric Definition, click here:

[DEFN's](#)

To print the report, click here:

[PRINT](#)

- Met / Exceeded Target
- Of Concern
- ◆ Within Tolerance of Target
- Metric not finalized or no target set

Executive Summary

Performance Domain Success: In the left column, percentage figures for 2009 and 2010 under each performance domain refer to the proportion of successful metrics in each performance domain, ie. where a metric status rating meets, exceeds (Blue) or is within tolerance (Green) of the target. The middle table compares all metric status ratings under each domain by year. The table to the right provide status ratings for each metric reported for each domain.

PERFORMANCE DOMAIN SUCCESS

DOMAIN STATUS SUMMARY

METRIC STATUS

SEM Sponsor:	DVC - Corporate Services
Lead Director:	Director, Human Resources Unit
Data Owner:	HRU
Data Custodian:	Planning & Quality Unit

	2008	2009	2010
Employee Engagement Index	NA	Met / Exceeded Target	NA

Definition (Click on drop down to view a different SECTION)

[\(Click here to EDIT content\)](#)

1. Definition:

% favourable (Agree & Strongly Agree) to Employee Engagement item in the Macquarie Voice staff survey. Employee Engagement is the average of Organisational Commitment, Job Satisfaction and Intention to Stay scales.

Interpretation of latest result and trend (Click on drop down to view a different SECTION)

[\(Click here to EDIT content\)](#)

3. Interpretation of latest result and trend:

Good result exceeding target and uni sector benchmark (72%). Weakest of three scales comprising the index was "intention to stay", although this partly reflects age profile of the UTS workforce.

[\(+ Metadata Definitions\)](#)

- Step by step Instructions are provided to enhance usability and intuitiveness of the application. Most functionality is self explanatory. Links are underlined and blue in colour.

Graduate Workplace Success (UTS Selected Fields)

Target = Sydney Metro Area University average for UTS selected fields
Targets are included as the Syd Metro Avg data becomes available

CLICK HERE TO REVEAL DROP DOWNS FOR FILTERING.

STEP 2 (OPTIONAL): Choose Broad FOE

(Filter applies to all charts)

STEP 3 (OPTIONAL): Choose Course Type

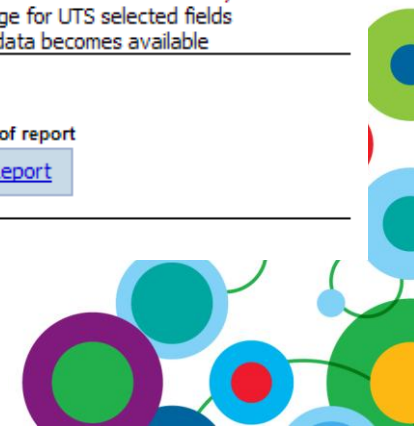
(Filter applies to chart 2, 3, 4, 5, 6)

STEP 4 (OPTIONAL): Click 'Apply Filter'

Open 2nd copy of report

Broad Field of Education: [All FOE](#)

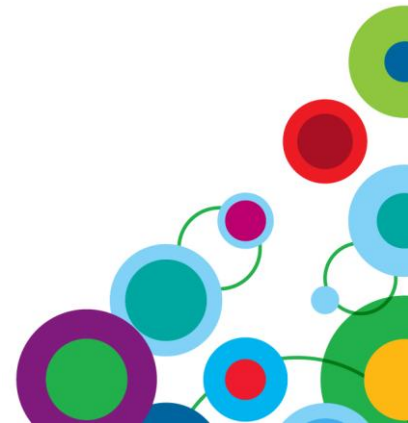
Course Type: [All Course Types](#)



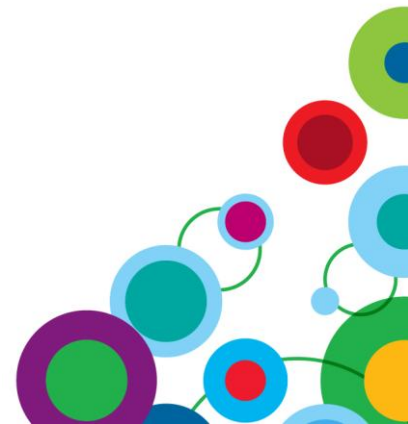
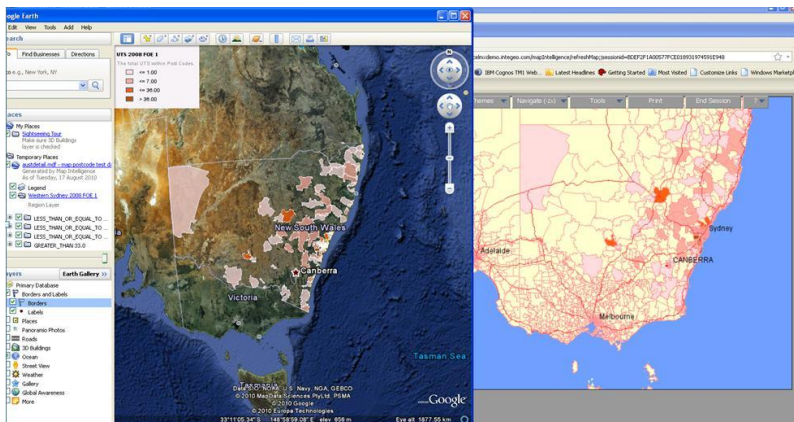


Summary

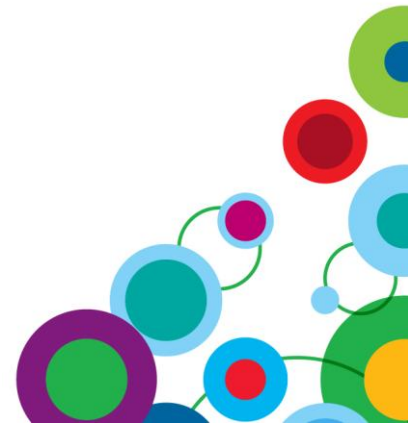
- Colours are everything – vivid and subtle colours each deliver a different message
- Use colours consistently throughout the application, if they mean something
- 3D charts cause ambiguity unless information accompanies the chart
- A line chart provides more information without cluttering the space
- Do not use different colours just for the sake of making a distinction between 2 or more values. It can cause distraction from what you are trying to say



Location Intelligence



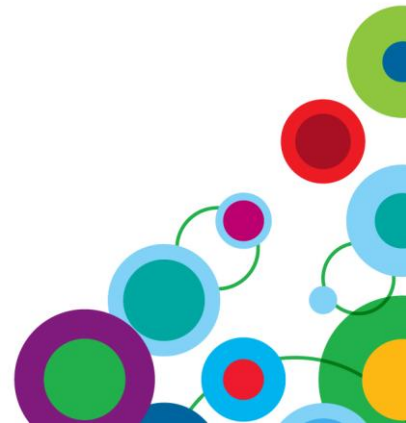
UTS Mapping Project





Terminology

- Geospatial - Combination of spatial software and analytical methods
- GIS - Geographic information systems.
- Location Intelligence – combination of geographic- and location-related data with other business data
- KML – Keyhole Markup Language



GIS Players

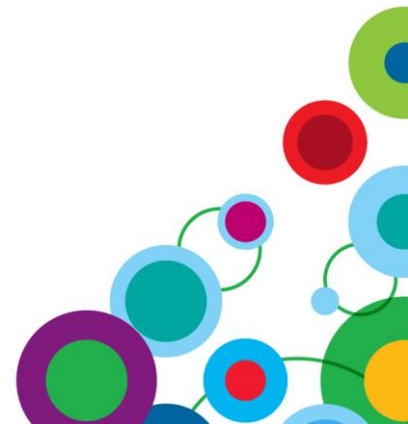
Integeo

Smallworld

Mapinfo

ESRI

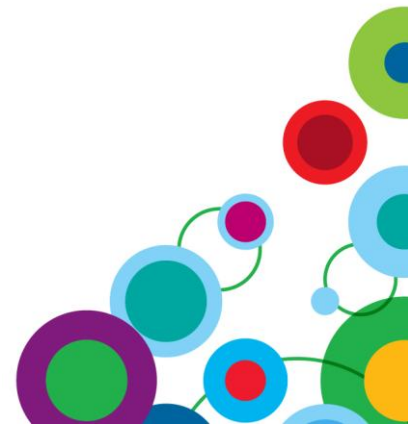
Webfocus

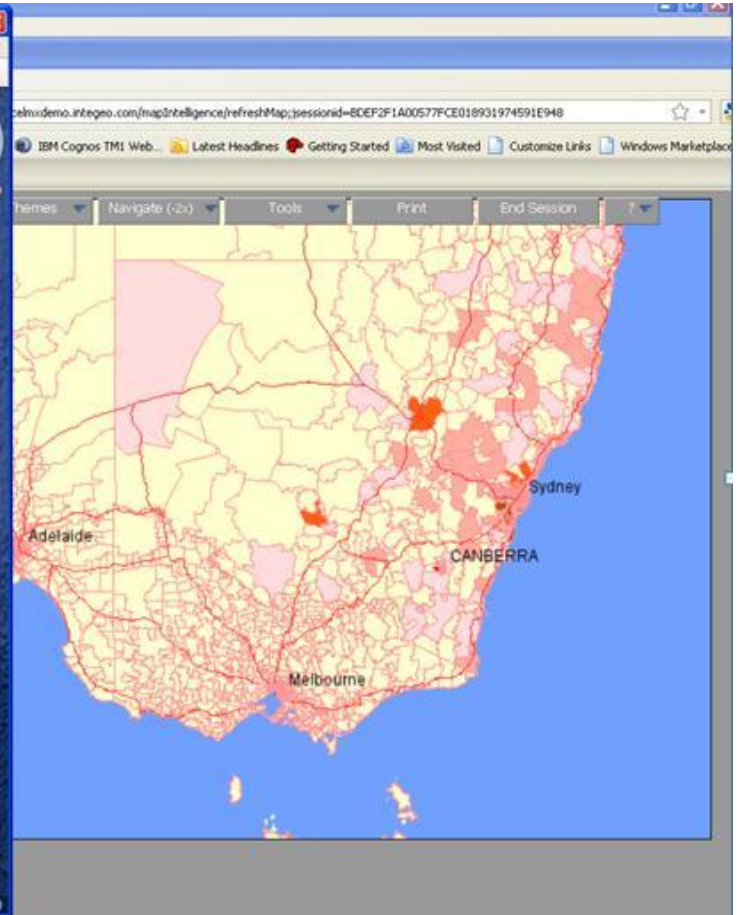
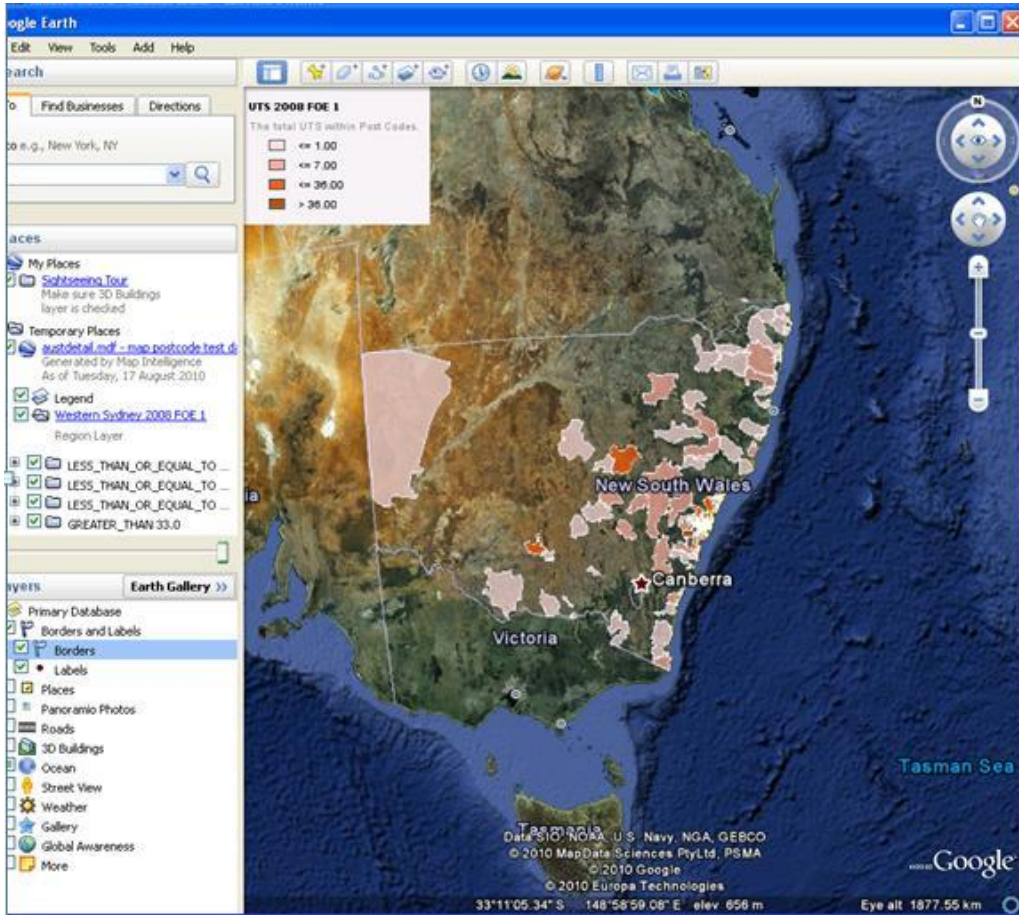




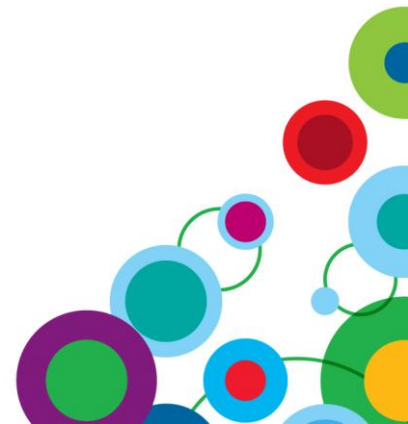
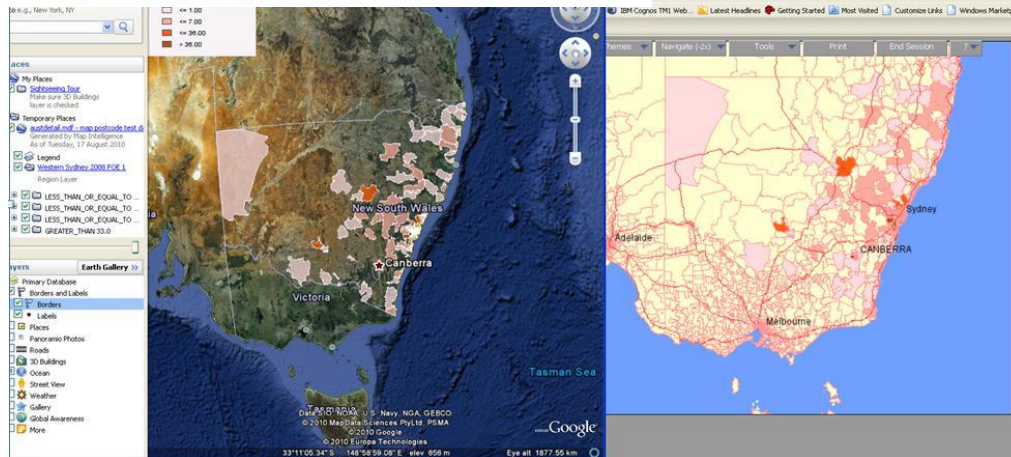
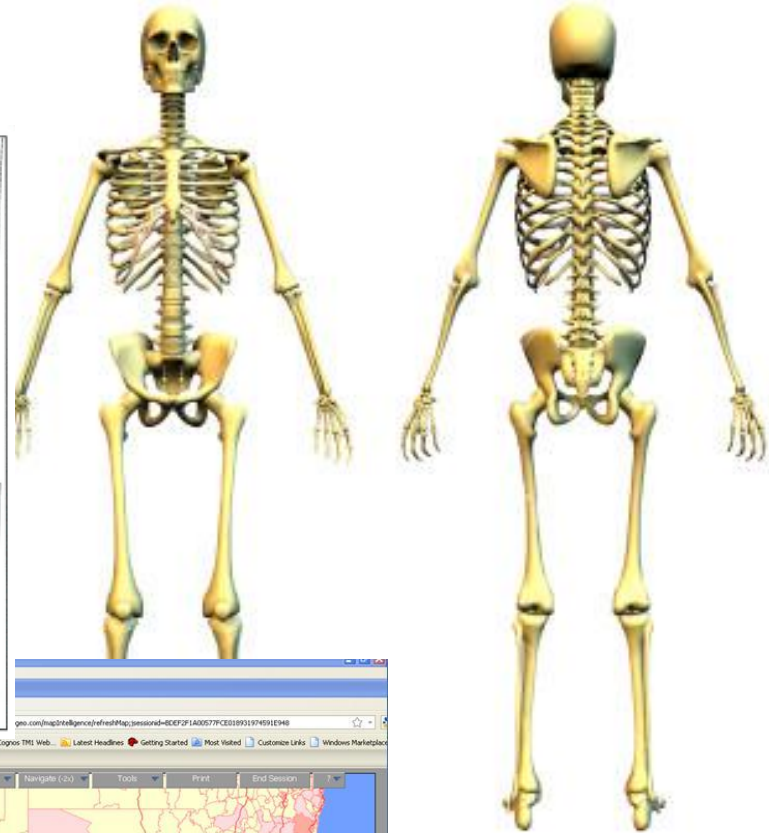
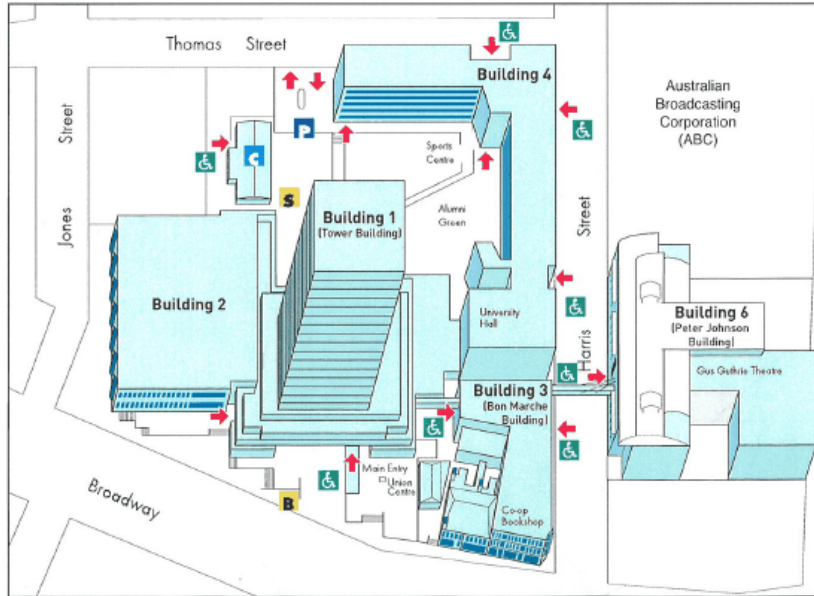
UTS Proof of Concept Demo

Simon Lelli – Focus Consulting





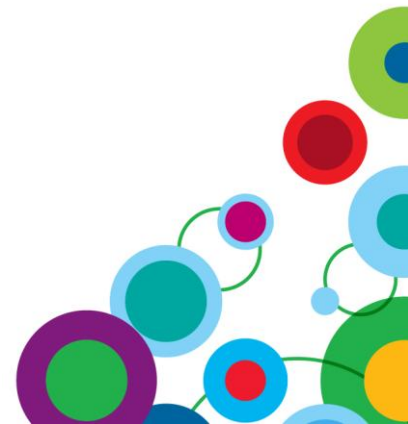
Maps!





Mapinfo demo

Michael Taylor - Trident



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www.spss.com/goldcoast



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