

Exploring Communication with Students, using Bluetooth



Making contact with our Students

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Presentation outline

- Introduction
- What is bluetooth marketing?
- Project deliverables & scope
- Equipment selection & testing
- System Implementation
- Orientation week campaigns & results
- Findings & the future for Bluetooth Marketing



Introduction

ACU Vice-Chancellor's Development Awards

- encourage and reward high quality initiatives by members of General Staff throughout the University.
- is a grant of up to \$10,000 to a General Staff member for the purpose of completing a project that will further the University's current Strategic Plan.
- Maximum of two per year.



Introduction

This project was linked to ACU's strategic plan:

- aim to develop special initiatives to recruit outstanding staff and to increase student enrolment
- create new opportunities for engagement with the community
- effective communication

What is bluetooth marketing?

What it is:

- Sends files to mobiles (or laptops!) with Bluetooth enabled and discoverable
- Uses free wireless communication to mobiles using Bluetooth
- Users must choose to accept or decline the connection (opt-in)
- Works within a 10-100m radius (without obstructions)
- It's also been around for many years!

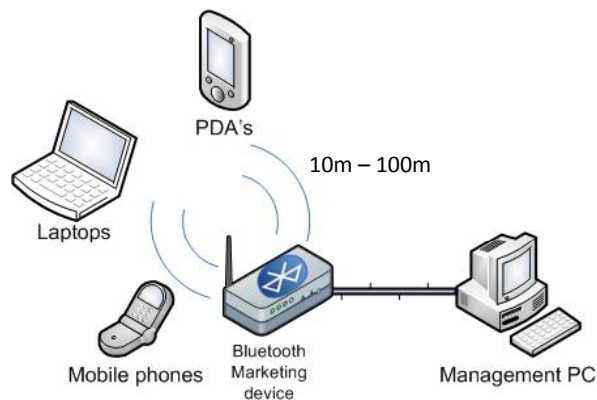
What is bluetooth marketing?

What it isn't:

- It does not send SMS messages
- It can't get the users phone number (or Paris Hilton's address book!)
- It doesn't work with all phones (e.g. Apples and blackberry's)
- It doesn't work well without compelling content or signage

What is bluetooth marketing?

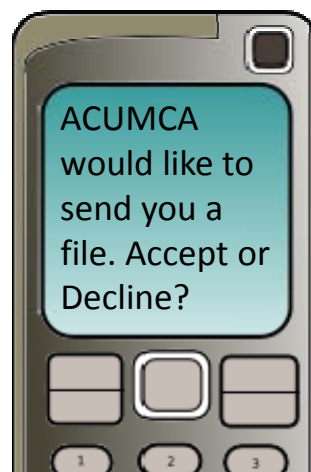
How it works:



What is bluetooth marketing?

How it works:

- Once a phone has been detected, a file will be sent and the user can accept or decline
- If declined, it adds the MAC address to the block list and will never connect to the device again



What is bluetooth marketing?

Uses?

- Open nights – information like maps
- Competitions – URL or vouchers (e.g. get a 2nd coffee free when you show this image from your mobile phone)
- O-Week – session times, announcing social events, free BBQ, etc
- ... the possibilities are endless!

How many of you have:

- An iPhone?
- A Blackberry?
- Android?
- Other type of mobile phone?

Project deliverables & scope

- Investigate different products
 - Demo of shortlisted products (if possible)
- Identify best fit hardware and purchase
 - Test the hardware – find bugs, squish them
- Develop an advertising plan with O-Week committees on two campuses
- Go live!
- Review statistics and information gathered

Equipment selection & testing

Two different systems were shortlisted

- Fully outsourced system
 - no extra work required, they do everything for you
- Standalone unit – in-house solution
 - Once only cost for Unit and management website
 - No limit to how many campaigns can be run
 - Equipment owned by the University – flexible deployment and portable

Equipment selection & testing

The system has to be:

- Easy to update – web interface preferable
- Flexible enough to run multiple sites and campaigns
- Small equipment foot print – should be able to be installed inconspicuously
- Cost effective based on the budget
- Clear instructions – User manual

Equipment selection & testing

Fully outsourced system

- Marketing company offer the device for \$2500, plus \$350 per month when in use
- They do all the work marketing your campaign, uploading data to the device if on the network
- Monthly fee includes content changing and reporting

Equipment selection & testing

Standalone unit – in-house solution

- Runs windows CE with proprietary software
- Is small and can be permanently mounted on a wall like a wireless AP
- Can be remotely managed via desktop application or via a web management site
- Full reports available online (uploaded to their site from the box)
- Cheap!!! (\$399USD + postage)

The Winner is?

Equipment selection & testing

Standalone unit – in-house solution (duh!)

BlueCastBox



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ID	Store ID	Node Name	Name	Device	MAC	Status	Date Added
553		nonnetwork23	Lizzy	Phone Cellular	00:18:C5:A7:76:82	Completed	08/19/2008 14:10:02
552		nonnetwork23		Phone Cellular	00:1D:F6:C2:29:E0	Connecting	08/19/2008 14:10:02
551		nonnetwork23	BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Discovered	08/19/2008 01:10:02
550		nonnetwork23	rapid1	Phone Smartphone	00:17:83:F2:55:8C	Completed	08/18/2008 15:40:01
535		nonnetwork23	BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Completed	08/18/2008 11:20:04
534		nonnetwork23	BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Ignored	08/18/2008 10:50:01
533		nonnetwork23		Computer Palm Sized	00:17:E6:29:28:F7	Ignored	08/18/2008 10:50:01
493			FreeCoupons	Computer Palm Sized	00:17:E6:29:28:F7	Completed	08/07/2008 16:40:01
492			FreeCoupons	Computer Palm Sized	00:17:E6:29:28:F7	Ignored - Retry:8/7/2008 4:28:47 PM	08/07/2008 16:30:01
491			Campaign01	Phone Smartphone	00:07:ED:80:BD:C9	Ignored - Retry:8/7/2008 4:29:05 PM	08/07/2008 16:30:01
490				device class	00:50:C2:7F:EC:79	Ignored	08/07/2008 10:40:02
489				Computer Palm Sized	00:16:09:3A:AF:7C	Completed	08/07/2008 09:50:01
488			BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Connecting	08/07/2008 09:40:01
487			Campaign01	Phone Smartphone	00:07:ED:80:BD:C9	Ignored	08/07/2008 09:20:02
486			BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Completed	08/07/2008 08:40:01
480			rapid1	Phone Smartphone	00:17:83:F2:55:8C	Completed	08/06/2008 10:40:01
479			Lizzy	Phone Cellular	00:18:C5:A7:76:82	Completed	08/06/2008 09:40:01
458			PPHKT1	Phone Cellular	00:1C:44:44:75:EF	Partial Completed	08/06/2008 09:40:01
457			BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Ignored	08/06/2008 09:20:02
456			Campaign01	Phone Smartphone	00:07:ED:80:BD:C9	Completed	08/06/2008 09:20:02
449	na		BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Ignored	08/05/2008 14:40:02
448	na		Campaign01	Phone Smartphone	00:07:ED:80:BD:C9	Ignored	08/05/2008 14:40:02
447	na		Campaign01	Phone Smartphone	00:07:ED:80:BD:C9	Completed	08/05/2008 14:40:02
446	na		BlackBerry 8700	Phone Smartphone	00:1C:CC:28:1B:FA	Completed	08/05/2008 14:40:02
445		sample9		device class	00:0C:CC:28:1B:FA	Ignored	07/29/2008 08:30:01
444		sample9		Phone Smartphone	00:1C:CC:66:B6:5F	Ignored	07/29/2008 08:30:01
443		sample9		Phone Cellular	00:1B:AF:CD:63:BF	Ignored	07/29/2008 08:30:01
442		sample9		Phone Smartphone	00:0F:86:E8:40:98	Ignored	07/28/2008 19:40:01
441		sample9		Phone Smartphone	00:1C:EC:89:88:9D	Ignored - Retry:7/28/2008 5:45:23 PM	07/28/2008 17:50:01
440		sample9		device class	40:1C:CC:28:1B:FA	Ignored	07/28/2008 17:30:01

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Zone Name	Records	Status Graph
	%	
testedit2	Completed	6 27.27 %
	Partial completed	0 0 %
	Declined	3 13.64 %
	Ignored	8 36.36 %
	Out of range	0 0 %
	Total records	22 100 %
zone4	Completed	21 15.22 %
	Partial completed	5 3.62 %
	Declined	58 42.03 %
	Ignored	4 2.90 %
	Out of range	39 28.26 %
	Total records	138 100 %
testZone1	Completed	6 13.64 %
	Partial completed	1 2.27 %
	Declined	0 0 %
	Ignored	35 79.55 %
	Out of range	1 2.27 %
	Total records	44 100 %
55555	Completed	21 15.22 %
	Partial completed	5 3.62 %
	Declined	58 42.03 %
	Ignored	4 2.90 %
	Out of range	39 28.26 %
	Total records	138 100 %

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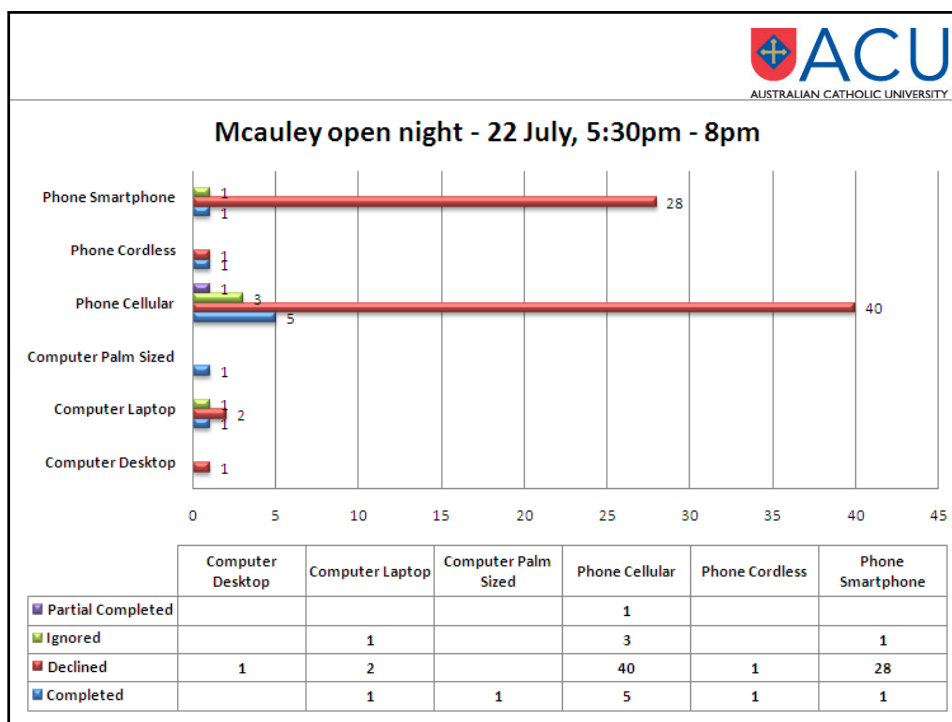
Equipment selection & testing

- Two in-house units were purchased from the USA
- Total price at the time was: \$1721.50

Equipment selection & testing

Testing:

- Blind test was run during McAuley Open Night for 2 and a half hours (5:30pm – 8pm)
- Text file was sent inviting Prospective Students to register to win an iPod touch
- No signage, no announcements
- No ACU Students were on campus (during semester break)
- 87 devices were discovered
 - Computers (1)
 - Laptops (4)
 - Cell phones (49)
 - Smart phones (30)
 - Palm sized computer (1)
 - Cordless? (1)
- 10 devices accepted the download, 72 declined (~12% acceptance)



Equipment selection & testing

Interesting points:

- More "Cell phones" (62.03%) than "Smart phones" (37.97%) the latter are usually more expensive mobile phones.
- Smart phones do not include Apple iPhones (as well as some other makes and models) as they do not have the capability to receive files via Bluetooth and are not discoverable by the equipment.
- More "Cell phones" accepted the connections (6) than did "Smart phones" (1).
- "Ignored" is usually someone that has walked out of range before accepting or declining a connection.
- "Partial completed" may have been someone not in range but may have accepted the transmission.
- "Computer Palm sized" usually refers to a PDA device.
- AV headsets and in-car hands free kits were also picked up but have been omitted from the report.

System Implementation

Recommended Bluetooth Marketing methods:

1. Shotgun
 - No other form of advertising (e.g. posters)
 - Lowest acceptance rate (less than %5)
2. Zoned shotgun
 - Wireless radio name & files consistent with location, so “expected”
 - No signage or announcements
3. Hotspots
 - Use of signage & announcements
 - Wireless radio & filenames consistent with location

System Implementation

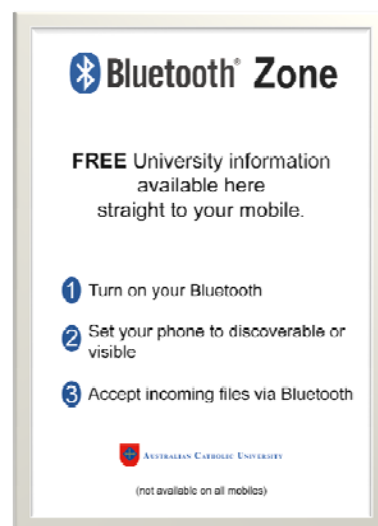
Bluetooth Advertising file types:

- Text – all phones can accept & view
- VCARD – useful to add Phone numbers to their contacts, not all phones can view them
- JPG/JPEG – most phones can accept but is limited by screen size
- GIF/Animated GIF – all phones can accept, Animated GIF allows for more information or “pages”

System Implementation

- Bluetooth hotspots used with Posters & announcements (at Welcome and on ACUradio)
- Sending text files due to the time to create the GIF files
- Two campus locations
 - Mcauley (QLD) – near the Library
 - St Patrick's (VIC) – near main entrance

Example Signage used
around campus



Orientation week campaigns & results

Mcauley schedule

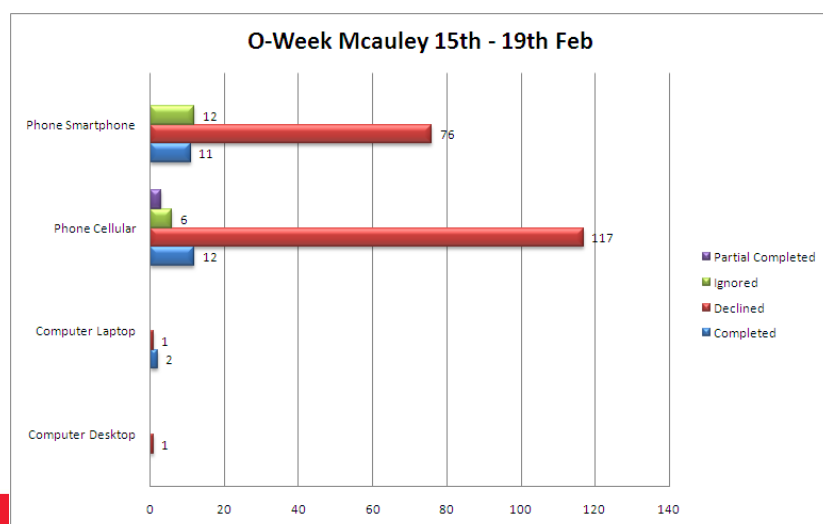
Radio Name	Campaign Name	Files	Start Date	End Date	Start Time	End Time	Running Days						
							S	M	T	W	T	F	S
ACUMCA	MCAoweeek	1584 - MCABBQ	02/15/2010	02/19/2010	7:00:00	13:00:00	no	yes	yes	yes	yes	yes	no
ACUMCA	MCAoweeek	1585 - MCAWEL	02/15/2010	02/15/2010	7:00:00	9:00:00	no	yes	no	no	no	no	no
ACUMCA	MCAoweeek	1599 - mcaliveband	02/15/2010	02/15/2010	7:00:00	14:00:00	no	yes	no	no	no	no	no
ACUMCA	MCAoweeek	1600 - mcacampustours	02/15/2010	02/15/2010	7:00:00	15:00:00	no	yes	no	no	no	no	no
ACUMCA	MCAoweeek	1601 - mcaart	02/15/2010	02/19/2010	7:00:00	18:00:00	no	yes	yes	yes	yes	yes	no

St Patrick's

schedule

Radio Name	Campaign Name	Files	Start Date	End Date	Start Time	End Time	Running Days						
							S	M	T	W	T	F	S
ACUPAT	PAToweeek	1583 - PATFREEFEED	02/15/2010	02/18/2010	7:00:00	13:30:00	no	yes	yes	yes	yes	no	no
ACUPAT	PAToweeek	1586 - PATwelcome	02/15/2010	02/15/2010	7:00:00	10:00:00	no	yes	yes	yes	no	no	no
ACUPAT	PAToweeek	1587 - PATSCAVhunt	02/17/2010	02/18/2010	7:00:00	13:00:00	no	no	no	yes	yes	no	no
ACUPAT	PAToweeek	1588 - PatSpeedFriends	02/15/2010	02/18/2010	7:00:00	13:30:00	no	yes	yes	yes	yes	no	no
ACUPAT	PAToweeek	1589 - PATlawn	02/18/2010	02/19/2010	7:00:00	12:00:00	no	no	no	no	yes	yes	no
ACUPAT	PAToweeek	1609 - PATsessions	02/15/2010	02/19/2010	7:00:00	16:00:00	no	yes	yes	yes	yes	yes	no

Orientation week campaigns & results

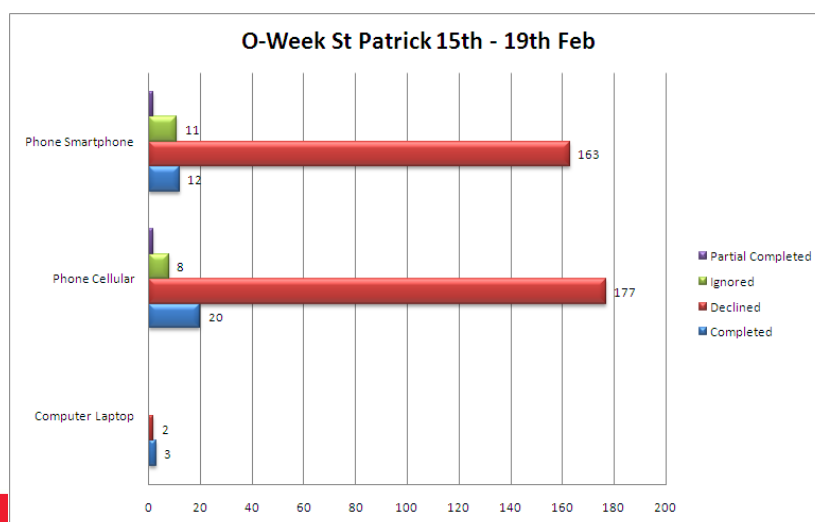


Orientation week campaigns & results

Mcauley results after the week:

- 28 accepted to 195 declined, acceptance ratio of 12.56%
- 138 "Cell" phones discovered, 15 accepted
- 99 "Smart" phones discovered, 11 accepted
- 18 phones ignored the transmission (walked through the zone without noticing), a higher rate of these were smart phones
- Total of 241 unique devices discovered during the week
- More "cell" phones (58.23%) than "smart" phones (41.77%), which is still an interesting demographic for our 1st year Students. Cell phones still has a higher acceptance rate.

Orientation week campaigns & results





Orientation week campaigns & results

St Patrick's results after the week:

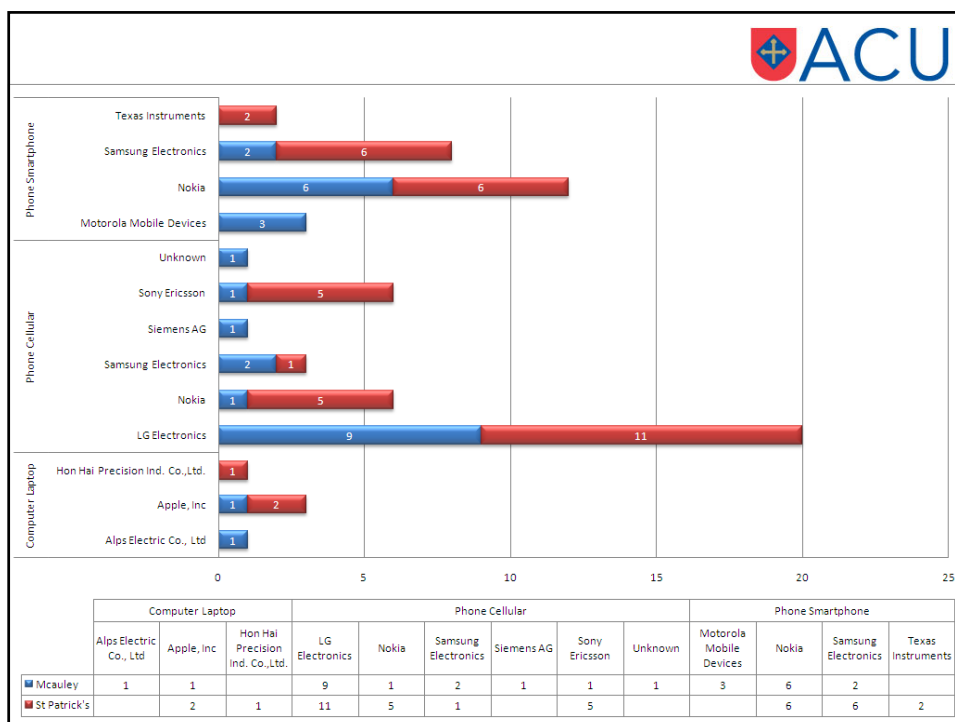
- 39 accepted and 342 declined, acceptance ratio of 10.24%
- 207 "Cell" phones discovered, 22 accepted
- 188 "Smart" phones discovered, 14 accepted
- 37 phones ignored the transmission
- More laptops discovered at St Patrick's than McAuley
- Total of 400 devices discovered during the week
- More "cell" phones (52.41%) than "Smart" phones (47.59%)
- 5.82% more smart phones than McAuley, which might account for the drop in acceptance.



Orientation week campaigns & results

Phones that accepted the files:

- LG "cell" phones were dominant at both McAuley and St Patrick's
- Nokia came a close second (adding both "cell" and "smart" phones together). Interestingly Nokia had more "smart" phones on each campus than "cell" phones



Findings & the future for Bluetooth Marketing

- Overall results were good, above the recommended 10%
- Not a replacement for marketing but useful addition
- according to the Australian Bureau of Statistics, 76% of 12 to 14 year olds own a mobile phone
- US studies have found only 27% of mobile phones are capable of receiving files sent by the Bluetooth Marketing devices (e.g. iPhones do not have a file transport service)

Findings & the future for Bluetooth Marketing



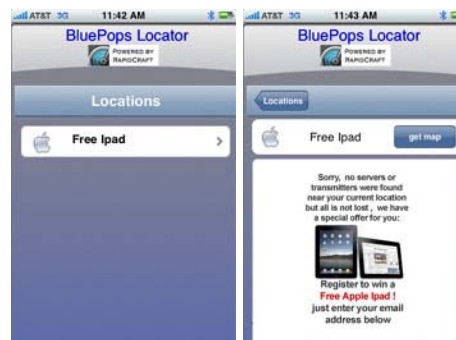
- Relies on users to have Bluetooth settings configured to be discoverable
- Users are willing to accept incoming advertisements
- Users have a phone that has Bluetooth and capable of receiving files (A few brands of mobile phones cannot accept Bluetooth connections like iPhones)
- Some phones will also reject (or decline) the connection without the user's knowledge, these can be some phones like Blackberries, LG, and Samsung models. This may account for the high rejection rate.

Findings & the future for Bluetooth Marketing



So what about:
iPhones, Android & Blackberry?

- iPhone App! (USA) uses GeoLocation
- Others coming soon



Findings & the future for Bluetooth Marketing



- Server backed live data apps
- Bluetooth enabled apps
- GPS location aware apps
- Personnel tracking apps
- Route Mangement apps

References



- 8146.0 - Household Use of Information Technology, Australia, 2008-09
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8146.02008-09?OpenDocument>
- Proxiblaster – Bluecast box II
<http://www.proxiblaster.com/item--BlueCastBox-Bluetooth-Advertising-Server--BCB2009>
- BreezeTech - <http://www.breeze-tech.com.au/>
- MAC address lookup tool - http://coffer.com/mac_find/
- BluePrinting - http://trifinite.org/trifinite_stuff_blueprinting.html



Questions?

Thanks for listening!