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**Our experience of
deploying a very large
network for a 2 week event**

(Parts of it for only one day!)

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The Event

World Youth Day 2008
July 2008 - Sydney, Australia



Event: World Youth Day 2008

Host: Catholic Archdiocese of Sydney

Expected Visitors: 400,000+

Expected Media: 3000+

The Brief: To provide network infrastructure for Internet access and manage/consult on other aspects of World Youth Day 2008 relating to network services.



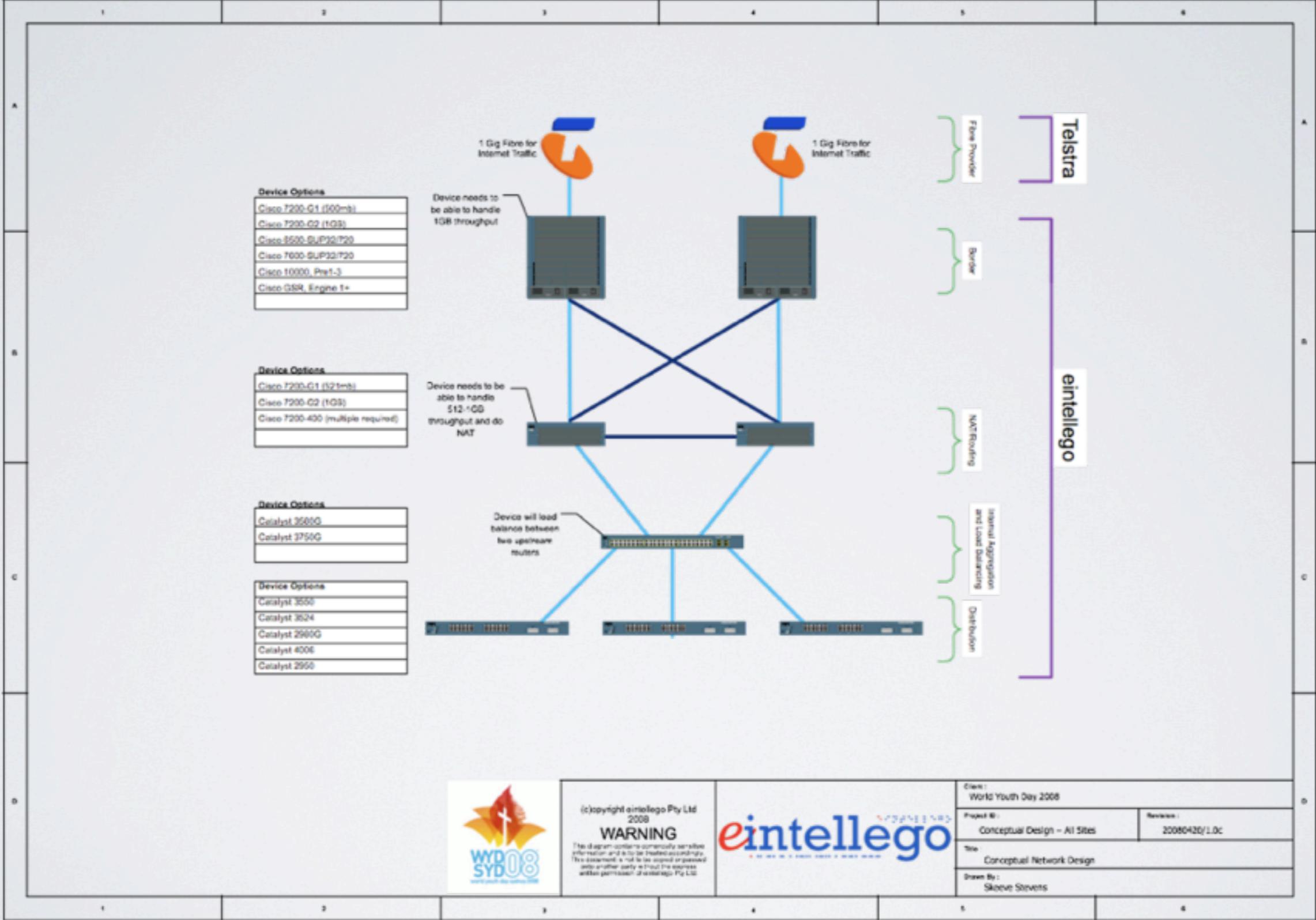
Project Priorities

- 1) The Media
- 2) The Vatican staff
- 3) The WYD08 administration staff
 - i) Accreditation (including Police (State & Federal))
 - ii) Volunteers
 - iii) Access to Network in Archdiocese
- 4) Law Enforcement Agencies
- 5) Merchandising requirements

Requirements

- * It has to work - first time. There is no 2nd chance!
- * 3 major venues
- * Price sensitive
- * 3 Months to get it ready
- * Build, Cable & Support the IMC (International Media Centre) - an entire hall of SCEC - operating 24/7 for 15 days / Liaise with SCEC Management
- * Project Manage Telstra (Transit) and HP (10GB Switching fabric at Barangaroo and Randwick Racecourse)
- * Liaise with WYDMOC and WYDCA

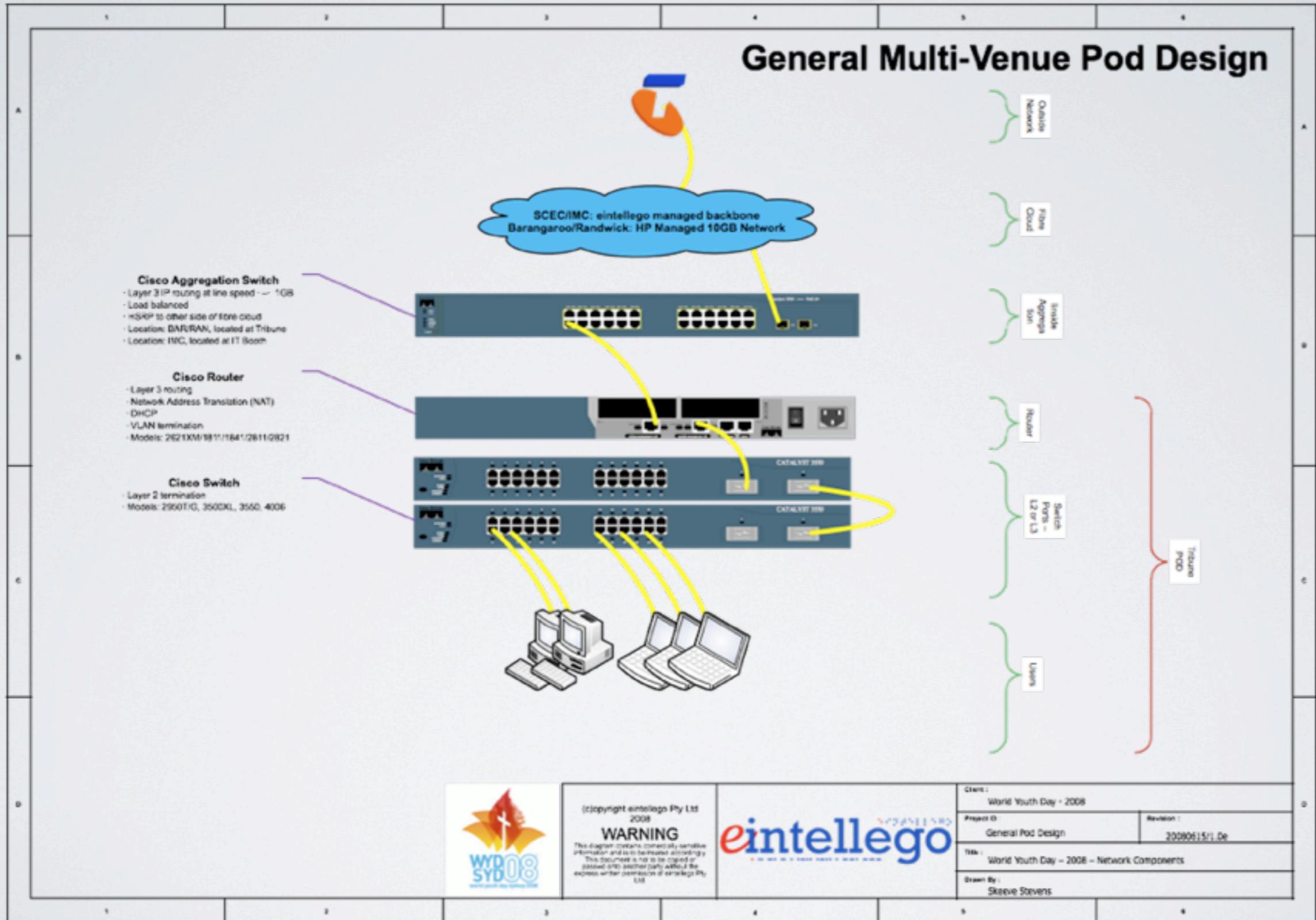
Initial Design



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Final Design



Design Philosophy

Pod Concept

- * Resilient, Cheap and easy to isolate any issues. Divide and conquer!
- * Pod Equipment - All Cisco
 - * Switching - 2950T/G, 3500XL, 3550 - mix of 24/48 ports, 2980G (80 ports) and 4006 fully loaded @ 240ports
 - * Routing - 2621XM, 1811/1841, 2811/2821, 7200npe400
- * Equipment Source
 - * all pod equipment sourced from 2nd's market - eBay, GraysOnline, etc etc
 - * all internal switching - 3560G's, rented for 30days
 - * 7200's rented for 30days
- * Network Infrastructure Hardware
 - * IMC - All Cisco 3560G - Route at Line speed - 1GB
 - * RAN/BAR - HP 10GB backbone, Cisco as above
 - * VPN CPE - 1841's for backup SHDSL and LEA's



Transit

- * Telstra delivered 2 * 1GB fibre links into each venue
- * Terminated onto 2 * 3560G provided by them
- * Cross connected into 2 * 3560G provided by us
- * They handled BGP inside their network
- * 2 * /23's for each transit connection at each site
- * Static routing with secondary path priority
- * Engineer onsite watching everything
- * IMC - 15 days live (Utilisation 300mb-500mb sustained)
- * Randwick - Final Mass - 1 day (450mb sustained)
- * Barangaroo - 4 days in total (250mb sustained)
- * When you have 2GB of transit for 14 days, you run out of things to download!

Infrastructure for all Venues

Every venue had:

- * For World Youth Day

 - * 3 paths for internet/private network connectivity

 - * Diverse (different exchanges) fibre runs with 1GB capacity

 - * SHDSL 4MB/4MB emergency path

- * For LEA's (Law Enforcement Agencies)

 - * Dedicated 2MB/2MB access back to secure systems

- * Dedicated Fibre for emergency network back to WYDMOC (WYD Staff, WYDCA and LEA Liaisons)



IMC Network

IMC Network Use

- * 24/7 Broadcasting for 12 days
- * Media from all around the world utilising a Television studio in 15 minute increments
- * Over 30 Media organisations video streaming 24/7
- * Over 50 Media organisations audio streaming 24/7
- * Workshop area - seats for 512 people putting together video packs or audio reports - in use 24/7
- * Wireless Network for venue - hundred of users - problems with iPhones and other devices which couldn't auth PPTP
- * Onsite Federal Security, WYD Staff, Links back to Citrix in DC at Archdiocese



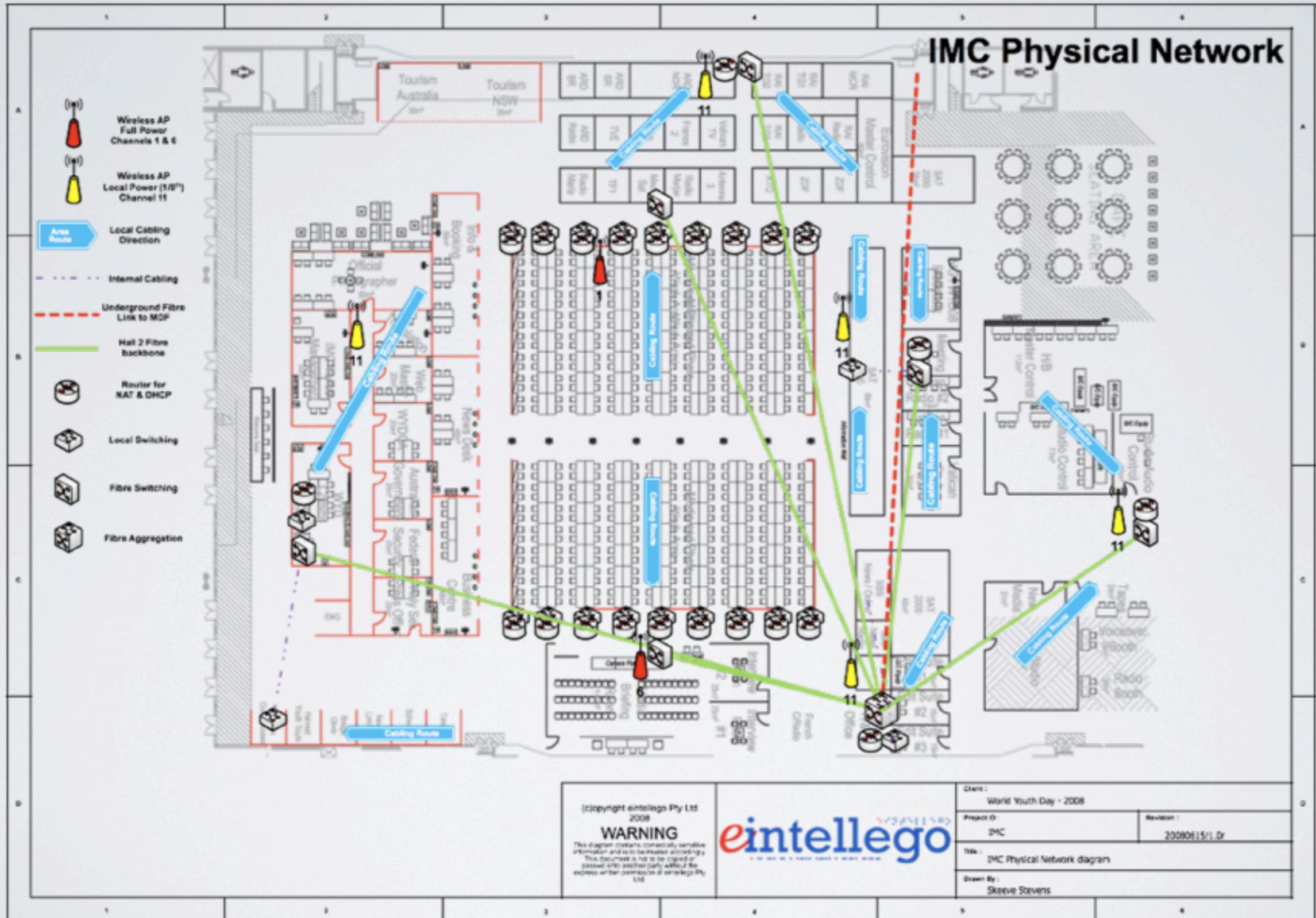
IMC Network

IMC Network Structure

- * 800 Cat5 network ports
- * 500 pair of copper going 300m from Main MDF to Hall 2. Copper was then distributed to floor boxes so they could be delivered to media offices. Over 150 ISDN, 250 PSTN, 30 faxes.
- * Utilised existing fibre links from Hall to MDF to get to Telstra CPE's
- * In-hall fibre run under hall floor distributed to aggregation points. Rolled out in 48 hours with a large team
- * Only allowed 4 days to install full copper run as hall was already being used by other customer and carpark was open
- * 2 days to Bump-In and do all internal cabling after the office shells had been built.



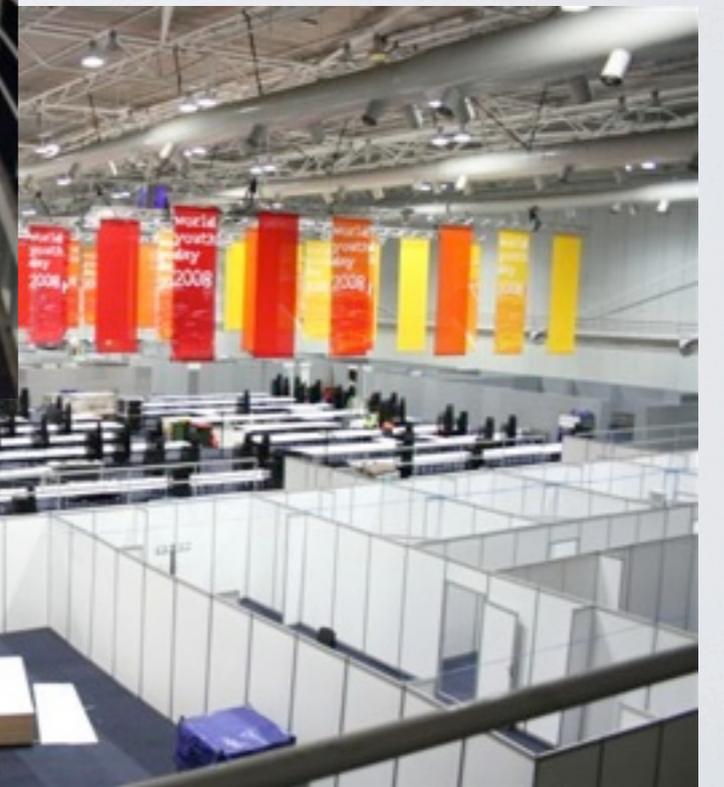
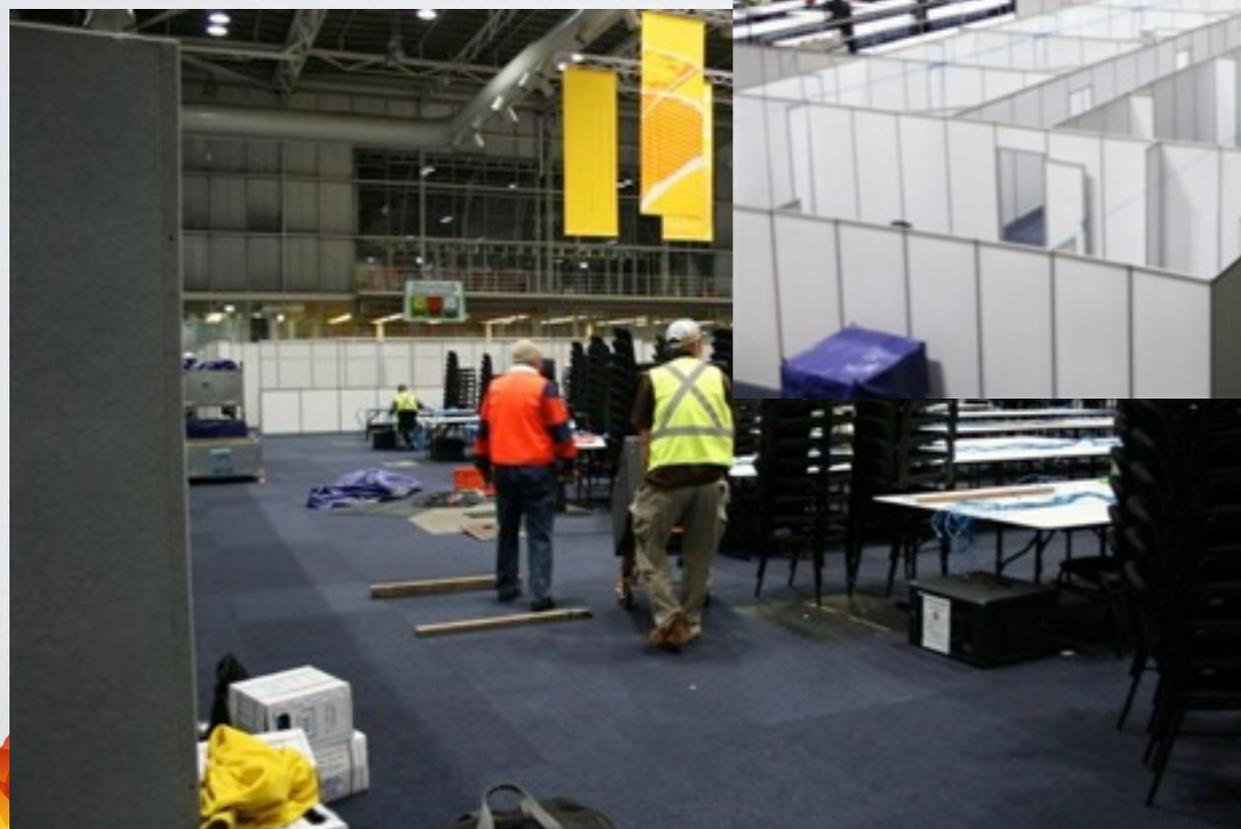
IMC Network



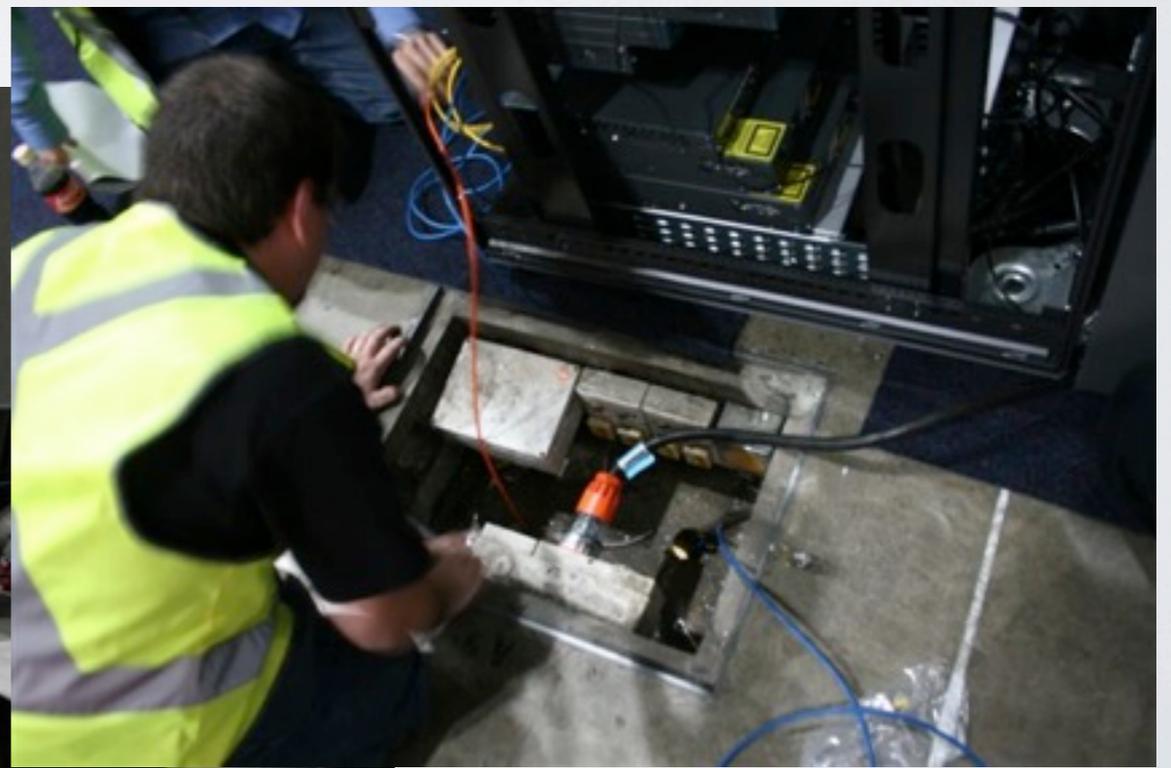
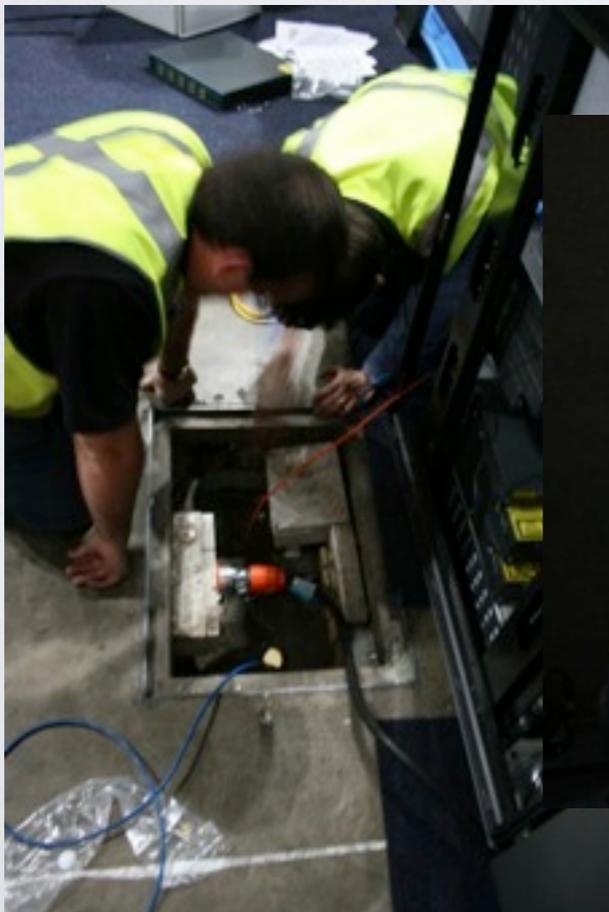
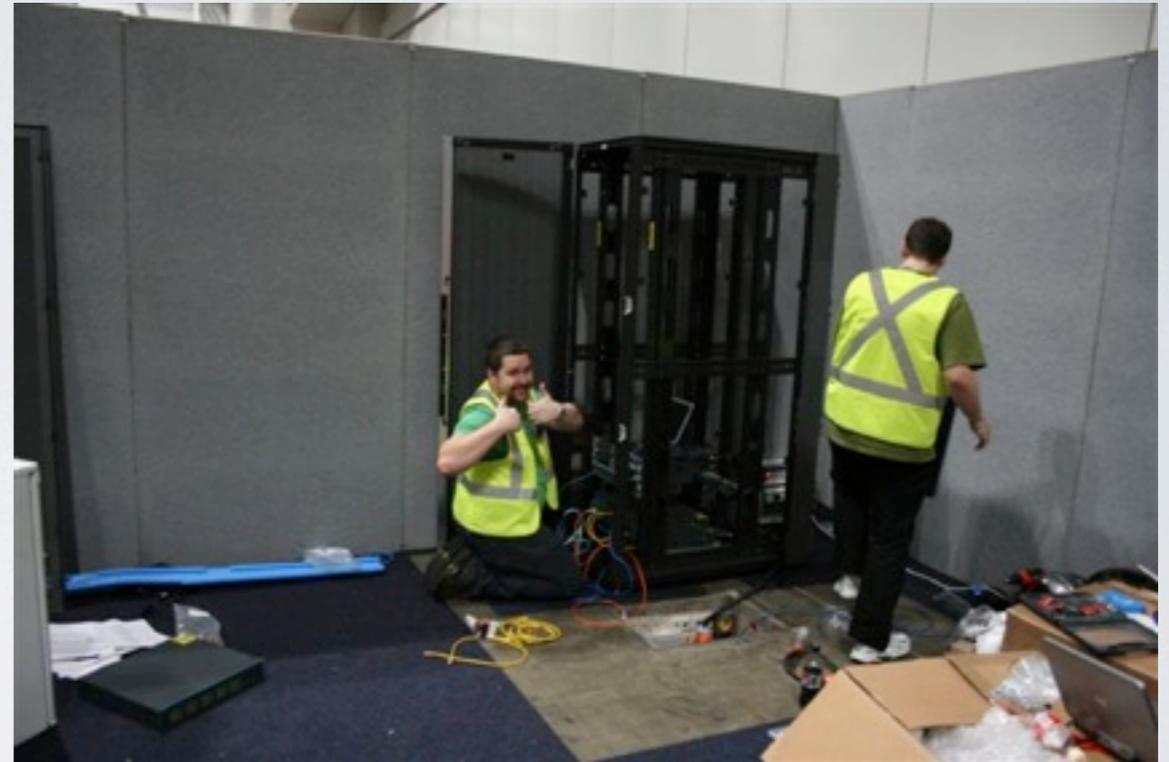
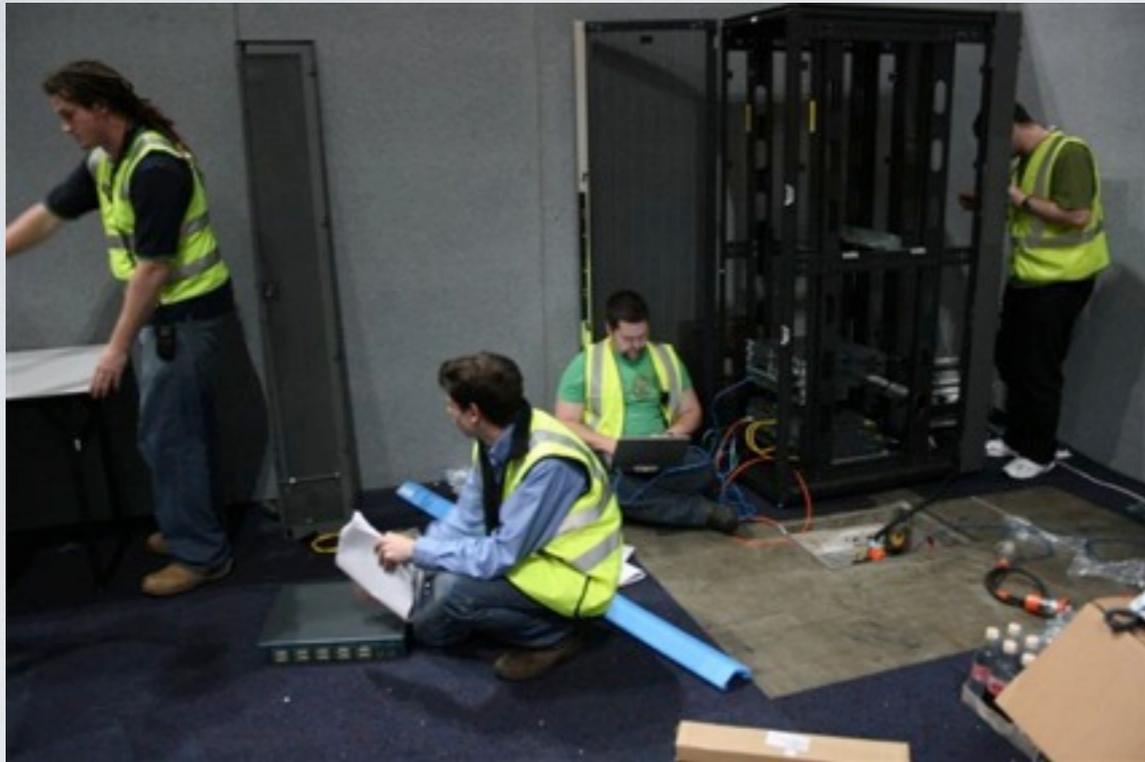
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International Media Centre (IMC)



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Randwick / Barangaroo

- * 800-1000 Switch ports at each venue to service
 - * Media, Police, Merchandising, Video transmission
 - * Medical, Vatican staff, VIP patrons, Cell tower backhaul
 - * All ethernet, no wireless - too congested, spectrum hell
 - * Cisco 4006 (fully loaded) and 2980G access switches
- * 10GB HP Switches. We designed the solution, HP configured devices and installed them. Equipment was all purchased from HP, and has now been redeployed by eintellego into the Catholic Archdiocese head office
- * Management of Fibre contractors and grandstand builders communications (Cat5, Copper) work

Randwick - Final Mass

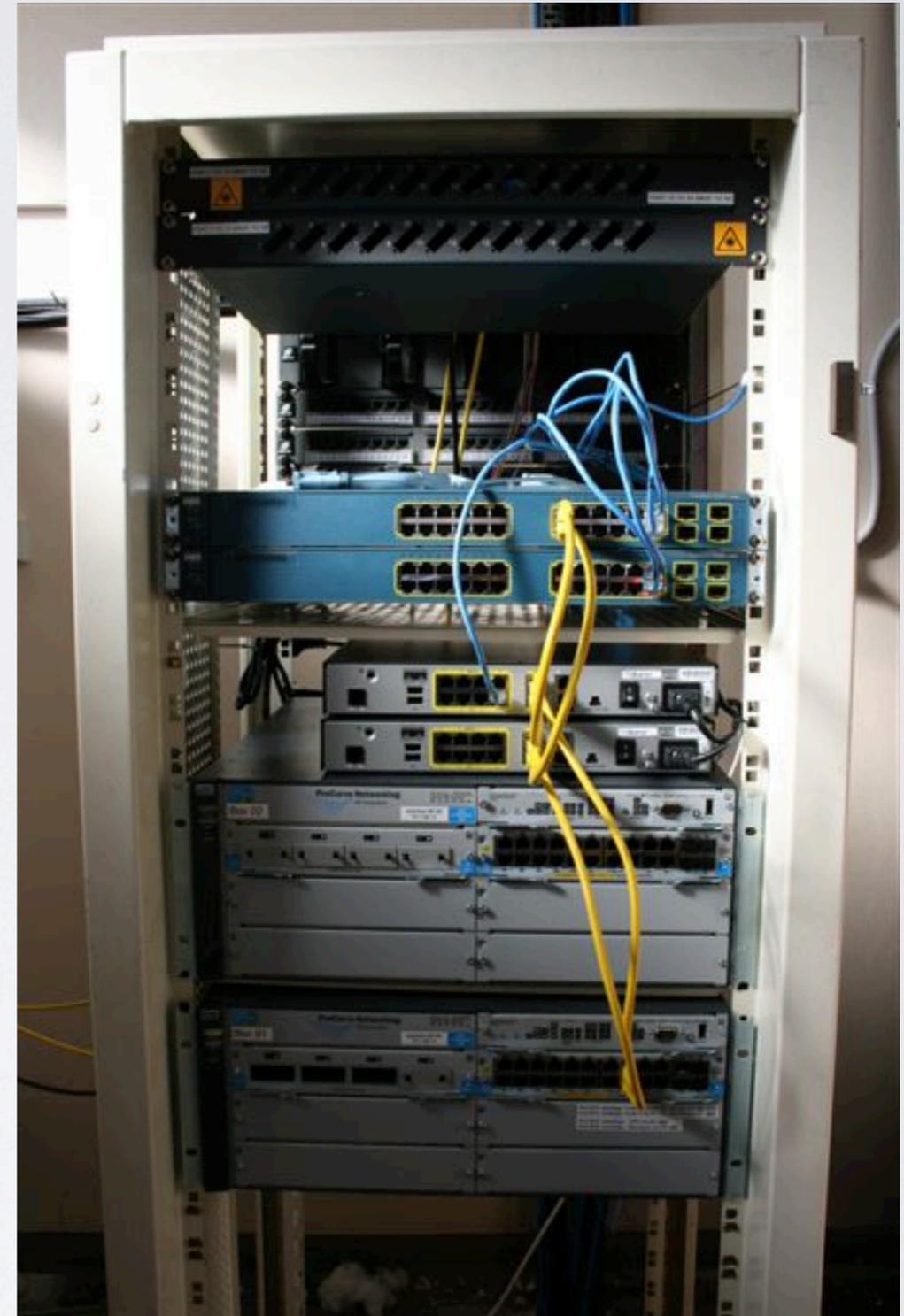


Randwick - Final Mass

- * Media Rack
- * 640 ports



Barangaroo



Barangaroo

* What we were assigned



Barangaroo

* What we ended up with



How did it go?



How did it go?

- * 95% of 2nd hand equipment performed perfectly. One switch failure of a pod switch at 3 am in the morning - two people had to move for 10 minutes while it was replaced.
- * A lot of politics were involved with SCEC who were escorting staff offsite because the NSW Government hadn't signed agreements
- * Very few complaints from users. Mainly cultural issues. In total, 17 different languages were used by the media on their laptop operating system - which we had to get working.
- * The Internet performed flawlessly for the entire event - Telstra has 24/7 dedicated Team who were awesome

My Reward!



Thanks! Questions?