

AIM

To improve the communication between the Central Office of IT Services and Division IT groups. This is expected to be completed in late November, and after testing with the Linguistics IT group and any fine tuning, will be offered to all Divisions of Macquarie University.

The objective is to develop and implement solutions for bridging the gap between the Divisional IT staff and the Central Office of IT Services. One of the tasks will be to identify a prioritised list of key issues, then design acceptable solutions to address them, regarding workloads and responsibilities, and any constraints relating to the Central and Divisional points of view. The constraints may be financial, industrial, technical, and staffing. Initial study suggests that access to the extended hours of support, and being able to get priority service over end users, will be high on the list. Interview MQ IT staff to determine problems. (See Appendix H: Report Structure)

This is not a review of infrastructure issues.

SCOPE

The function of Macquarie University is to teach students and perform research. These tasks are IT dependent, and the IT staff provides this service for students and academics.

There are 3 main aspects of this service.

- The students need the IT service to attend lectures, write and submit reports, assignments, and exams.
- The academic needs IT support to prepare and deliver, lectures, tasks, exams, and to perform research.
- Additionally, both students and academics need administration support. The student needs to enrol, pay fees, use classrooms and laboratories, and receive degrees, and the prospective student needs information. The academic needs communications, financial support, grant administration, and logistic help.

The many administration systems, financial, buildings, payroll, accounting, records, grants, assets and library, are key items, and have a critical timeframe throughout the academic year. Planning, growth and reliability are necessary. Macquarie University has a worldwide reach, so 24 hours a day and 7 days a week operation, is mandatory.

STAFF

A Division may have its own IT and technical staff to resolve computer problems, repair equipment, run laboratory sessions, and provide specialist support and installation. The Divisions that have resident ITS staff for their IT service should not have any communication problems. To provide a better IT service, both situations can be improved by extending the hours of operation. However, having just the Division IT staff working extended hours will only partially solve the problem. When the fault requires ITS intervention, calling the ITS HELP desk and getting a recorded message is frustrating. Therefore, making IT service hours the same, for example 7AM to 7PM, would be an initial step towards 24/7 operation. This would include all IT staff, Division, Help Desk, and ITS Techs. (See Appendix D: Staff).

Division IT staff details need to be on a webpage or a one page document which is sent to the ITS HELP desk each month, quarter, or yearly, and updated when changes occur. This would provide a central place for all IT staff details to be kept. When a problem occurs, ITS (and Divisions as well) can quickly determine who to contact. (See Appendix G: IT DETAILS).

Similarly, the ITS staff needs to be known to the Divisions, rather than just a voice on the phone or an email. Logging a HELP desk call will cover most problems. For the more tricky problems, direct contact will save ITS time. If the ITS HELP desk places updates on the ITS webpage, then Division IT staff can check here first and save time. (See Appendix D: Staff).

There should be a core permanent IT staff, responsible for day to day operations, maintenance, and fault repair. As they are familiar with the systems, communicating fault symptoms will be easier, and enable faults to be fixed quickly. Contractors should be used for overloads and major upgrades, as explaining the necessary fault and system details, often causes delays. (See Appendix D: Staff).

TRAINING

The Division IT staff would benefit from training from each specialised ITS tech (e.g. an email tech). A short course, with sufficient detail to understand most faults, overcome many, and enable accurate reporting of others, would reduce the repair time, and perhaps solve the problem before it is escalated to ITS. The Division IT staff could then run a course for their users, which would avoid some of the potential problems, and increase accurate fault reporting. (See APPENDIX E: Training)

The Division could run a training course which would cover any specialised Division software or hardware, that may involve the ITS techs and the ITS Help desk in maintenance. This could cover the functionality, common problems, fixes, critical up times, and when faults are escalated. They could also provide course notes and a FAQ.

The Administration systems could also have annual training courses for the Divisions that use its services (e.g. Student One), how to use them, how to configure them, and common problems.

The ITS HELP desk would benefit from attending all these training courses. They could be provided with a one page FAQ, and questions to ask the user. This would aid in clarifying the problem if escalated.

The current FYI sessions could be increased to monthly, they could include an open forum, and encourage Divisions to make presentations.

TOOLS

MONITORING SYSTEMS

When a fault occurs, monitoring tools could be checked to help identify the problem. This may reduce HELP desk calls, help in analysis, increase accurate fault reporting, and may even warn of a pending failure. Most IT services could have some sort of

automated monitoring, thresholding, and reporting. The results could be available on a web page for tech and user viewing. Manual testing could be available to techs, to allow remote trouble shooting. Remote rebooting could be available to techs, which may solve some problems. (See Appendix B: Tools)

HELP DESK SOFTWARE

Some Divisions use an email account as the central logging point for all faults. Other Divisions use a web page to encourage users to fill in details and are prompted for information. Using different reporting methods means each Division IT group will receive a different amount of detail about a fault. When the fault is escalated to the ITS Help desk, the details will vary greatly, and may need to be re-entered. A common university wide web based fault reporting system, would allow the user to enter the data once, and monitor the progress. The Division IT staff can escalate the job to the ITS Help desk easily. ITS would receive the fault report in a uniform format, increasing speed, reducing the effort and eliminating duplication. The system would benefit Divisions and ITS. (See Appendix B: Tools)

SECURITY TESTING

Divisions and ITS could use security tools to probe systems, establish patch status, determine software versions, check for vulnerabilities, test firewalls, find open ports, crack passwords, find malware, and check spam and viruses settings. Spam and virus signatures are handled separately by Barracuda and Sophos, so the tool would just ensure they are installed, patched, configured, and running. Increasing computer security will reduce hacking and compromises, and stop Macquarie University computers being used for spamming or illegal activities. High computer security is a sound investment and actually reduces the work of IT staff. (See Appendix B, Tools)

SOFTWARE CONTROL

Asset management software can discover installed software and provide an asset inventory. This will help with discovering what software is missing, what is not working, and what extra software has been added. This will help determine if software incompatibility, or unauthorised has caused the problem. This will help Division staff accurately report a problem, and will allow ITS to report potential software clashes to other Divisions. (See Appendix B, Tools)

USER FAULT REPORTING

The Division IT staff should inform their students and staff on the methods for reporting a fault, which will help with speedy repair. They should direct their users to the contact details on the Division web page. This will help the user, the Division IT staff and ITS staff. The webpages should contain the Division IT policy and procedures, and a method to handle exceptions . (See Appendix C: Division Users)

FAULT PRIORITY LEVELS

The existing fault priority levels need to be improved.
There are two main categories at the moment, Staff and Student.
Student faults are directed to the Library Help Desk.
Staff faults are directed to their Division ITS Help desk.
These can be prioritised.

Suggestions are:

- Lectures, classes and seminars typically involve 20 to 40 people and a 1 hour window. These should be given TOP priority, and a 10 minute response time.
- Faults involving entire Divisions, Departments, or services (payroll, financial, exams, enrolments, timetables) affecting 50 or more people, should be the next priority, and a 30 minute response time .
- Faults directly affecting Division IT staff, should be level 3 priority, and a 60 minute response time.
- Faults affecting individual users, should be level 4 priority, and a 2 hour response time.
- Requests for new services are level 5 priority, and a 24 hour response time.

Note that the response time, is the first contact, and the fault resolution time will be longer.

PLANNING

To avoid accidental interruptions, the software architecture, interrelations, dependencies, and critical links, need to be tested and recorded before activation (probably impossible). A step towards this, would be for the Divisions to meet with the ITS Projects team regularly, to develop 3 year plans, for new projects, and major upgrades. This will allow timing, dimensioning, budgeting, tendering, space allocation, and any building facilities to be prepared. (See Appendix F: Planning)

SERVICE AND MAINTENANCE SCHEDULES

Divisions should prepare a yearly schedule, depicting essential computer, essential server, essential network uptime periods, normal usage periods, and preferred maintenance periods. Meetings with between the Divisions and ITS to determine a schedule, will aid in the provision of a reliable service, in coordination with regular maintenance and minimal disruption Divisions should be proactive and provide as much information as possible to ITS. (See Appendix F: Planning)

SERVICES

Essential services require priority. What is essential, varies with your point of view. To an academic, email, file, print, and web are the most important. To a student, library, fees, exams, and graduation are the most important. To the IT staff, network, desktop, servers, and virus protection are the most important. To the administration, payroll, enrolling, records, and financial systems, are the most important. All systems have critical periods when they are in demand. The commonality of all these is network, access, desktop and servers. The essential services and essential uptimes need to be agreed upon, and maintenance and upgrades planned around them.

SUMMARY

Communication inevitably means talking and providing information, so there is an expectation of more meetings, but with a two way flow of information. Prepare for each meeting, with something that may contribute to it, some information from your perspective which will help the total solution. Even training courses can benefit from your input. Regard each meeting as yours, what help you can get for your interests, and what help you can provide for others.

RECOMMENDATIONS

- 1/. Provide training and FAQ sheets for Division IT staff
- 2/. Provide training and FAQ sheets for ITS Help desk operators
- 3/. Provide training and FAQ sheets for IT tech staff
- 4/. Add Fault Priority Levels
- 5/. Extend hours for Division IT staff
- 6/. Extend hours for ITS Help desk operators
- 7/. Extend hours for ITS tech staff
- 8/. Provide IT staff details
- 9/. Provide IT equipment and software details
- 10/. Have an IT policy covering hardware, software, procedures
- 11/. Display the IT policy on your web pages (allow for exceptions)
- 12/. Meet the IT staff you deal with
- 13/. Check ITS webpages for alerts when solving a problem
- 14/. Put updates on the ITS webpages (alerts, outages, changes, all however minor)
- 15/. Move all updates to a history log on the ITS webpages
- 16/. Check all your webpages regularly and keep them current (notify others)
- 17/. Provide common Help desk software
- 18/. Provide feedback on all faults
- 19/. Add an open forum session to the FYI sessions
- 20/. Increase the FYI session frequency to monthly
- 21/. Divisions should present at the FYI sessions
- 22/. Hold maintenance planning sessions for each academic year
- 23/. Hold project planning sessions to develop 3 year plans
- 24/. Define essential services and essential uptimes (plan maintenance and upgrades)
- 25/. Provide a security probe service
- 26/. Provide a software inventory probe (generates an asset list)
- 27/. Add remote monitoring, diagnostic and reboot functions
- 28/. Use permanent staff for normal operations, and use contract staff for projects
- 29/. Ensure documentation transfer from projects
- 30/. Encourage standardisation (ITS provides a standard PC with preloaded desktop)
- 31/. Centrally locate ITS on campus
- 32/. Consider incorporating Division IT staff in an MQ wide IT staff structure

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APPENDICES

- A/. Help Desk Hours
- B/. Tools and Monitoring Systems
- C/. Division IT Users
- D/. Staff
- E/. Training
- F/. Planning
- G/. IT Details Sheet
- H/. Report Structure

APPENDIX A: ITS HELP DESK HOURS

The ITS Help desk has three staff at the moment.

EXISTING HOURS

Period covered is 9:00AM to 5:00PM weekdays.

Member A: 9:00AM to 5:00PM

Member B: 9:00AM to 5:00PM

Member C: 9:00AM to 5:00PM

EXTEND 1 hour

Period covered is 8:00AM to 6:00PM weekdays.

Member A: 9:00AM to 5:00PM

Member B: 8:00AM to 4:00PM

Member C: 10:00AM to 6:00PM (plus 10% extra wages).

Service benefits: an extra 1 hour each side of the core hours.

MQ benefits: same conditions, small wage increase.

Staff benefits: travel in off peak hours, extra wages.

EXTEND 2 hours

Period covered is 7:00AM to 7:00PM weekdays.

Member A: 9:00AM to 5:00PM

Member B: 7:00AM to 3:00PM

Member C: 11:00AM to 7:00PM (plus 10% extra wages).

MQ benefits: an extra 2 hours each side of the core hours.

MQ benefits: same conditions, small wage increase.

Staff benefits: travel in off peak hours, extra wages.

STAFF INCREASE

Add 2 staff members

Member D: 5:00PM to midnight (plus 15% extra wages).

Member E: Midnight to 7:00AM (plus 30% extra wages).

MQ benefits: 24 hours on weekdays.

Staff benefits: extra wages

WEEKEND COVERAGE

Roster staff for weekends on-call

Ready A attracts extra wages (plus 10% Saturday, 12.5% Sunday, 15% Public Holiday additional wages).

If called in, this attracts overtime rates (plus 50% Saturday morning, plus 100% Saturday afternoon and Sunday, plus 150% for Public Holidays)

Service benefits: 24 hours on weekends.

Staff benefits: extra wages

DUTIES

Log calls (software)

Solution over the phone (question script, FAQ solutions, escalate)

Limited resolution (use monitor to determine failure, can remotely reboot systems)

Review current calls (look at hourly progress, send feedback)

Secondary tasks (update docs, review web pages, check monitors, run diagnostics)

APPENDIX B: TOOLS

MONITORING AND REPORTING

Systems are usually tested when first installed. These tests might be able to be automated and permanently installed, perhaps on a monitoring or testing server. These tests could be run regularly with a cronjob, and the output applied to some threshold, with a simple GO/NOGO result, to determine if the system is performing properly and timely. The result could be displayed on a webpage suitable for viewing, and so the health of the system can be determined. An example is the existing web page <http://bb.its.mq.edu.au/bb/> A plain text title on each system and normal levels, would help clarify the use. Techs and users would be able to view this, and determine if their service is working, or if something else is restricting their access, or if they have some other problem. Network statistics and traffic loads can be monitored and history reviewed hourly, weekly, monthly, and yearly, with a network tool like <http://www.ics.mq.edu.au/cts/mrtg/network/> If network problems are suspected, the previous history can be compared to current levels. It would help in problem reporting, and may reduce the number of Help desk calls. It may also predict a pending failure, and allow it to be averted.

Possible tests (not exhaustive):

- to determine disk capacity, the monitoring server may ask for the disk size, and warn of 90% capacity.
- to determine email function, the monitoring server may send an email to itself and time its arrival, and warn of 15 minute latencies.
- to determine SPAM blocking, the monitoring server may send a deliberately bogus email to itself and check its arrival, and warn if successfully delivered.
- to test dialup, an automatic phone call could be placed, and warn if a login does not successfully occur.
- to test internet availability, an overseas webpage could be accessed, and warn if failure occurs.
- to test DNS server function, a request could be sent, then the result compared to the expected answer, and warn if incorrect or timeout.
- to test the MQ web server, a page could be accessed and warn if failure occurs.
- to determine firewall function, the monitoring server may attempt access to a blocked port, or shielded system, and warn if penetration occurs.
- to report security breaches, Tripwire may be installed to report unauthorised file changes.

Most systems could have some aspect that could be tested, probed and analysed.

MANUAL DIAGNOSTICS

The automatic diagnostics could be run when a failure was reported by the monitoring system or by a user, and the results critically inspected. These could be run manually by the Techs and Helpdesk operators. The tests would consist of duplicates of the automatic functions, and additional tests to provide more information.

REMOTE REBOOT

Often a simple reboot may fix the problem. A remote reboot function will be required, which will depend on the system being in a functioning state. If the system has completely crashed or hung, then power cycling the UPS may be a solution. Most UPS have remote access capability, and may also have temperature reporting, which

can indicate air-conditioning status. This assumes that the UPS has security patches, and password protection.

HELP DESK SOFTWARE

Divisions have solved their fault reporting procedure in different ways, most using computer systems. This of course works for minor problems, but not for major failures. The phone (land line or mobile) is a backup to computer based reporting. A VOIP phone cannot report a network failure, which is a limit on its usefulness in a disaster. In this case, mobile to mobile phone calls are required. A personal visit is the default when both computers and phones have failed.

Some Divisions use an email account that is the central logging point for all faults. In this case, the Division IT staff can examine faults in the list, and select the jobs. This is quick and easy, but has no fixed format, priority, or fine detail, and it assumes web and email are working. Other Divisions use a web page to allow users to fill in details and are prompted for information. This is easy for the user as details are prompted, and uses a fixed format. It is slower, and assumes the network and web are working. Using different reporting methods means each Division IT group will receive a different amount of detail on a fault. When the fault is escalated to the ITS Help desk, the details may need to be re-entered, and they will be in a different format from each Division. When a progress update is needed, an email or phone call to the help desk is required, and the information is passed on to the user.

A common university wide web based fault reporting system, would be an advantage. It would allow the user to enter the data once, and monitor the progress. The Division IT staff can escalate the job to the ITS Help desk easily, without re-entering the data. They can add any extra information that they have gleaned, and correct the user information where necessary. There needs to be an area for the fault solution, to provide feedback to the user and the Division IT staff. The fault progress can be monitored by Division IT staff and users, without repeated calls or emails to the ITS Help desk. Users would need to be able to view their fault in relation to the total Division list of faults. Division IT staff, would require this view, and in addition, the total list of all university logged faults. A common university wide reporting system would aid Division fault solution, escalation, and feedback, increasing speed, reducing the effort and eliminating duplication. The system would benefit Divisions and ITS. Clearly written feedback is very important.

SECURITY TESTING

Divisions and/or ITS could provide a service to probe systems, establish patch status, determine software versions, check for vulnerabilities, test firewalls, find open ports, crack passwords, find malware, and check spam and viruses settings. Spam and virus signatures are handled separately by Barracuda and Sophos, so this would just ensure they are installed, patched, configured, and running. The security test could be automated, just by going to an ITS web page, and entering an IP number (or a range), then examining the results. Increasing computer security will reduce hacking and compromises, and stop Macquarie University computers being used for spamming or illegal activities. High computer security actually reduces the work of IT staff, so that they do not have to discover a problem, repair the breach, or reload a system. Division staff can use the service to ensure all their systems meet ITS standards. ITS staff can test a suspect system, and quickly produce a check list to compare against a

benchmark. When a problem is found by the Division or ITS, the standard test will enable easy communication between them, and easy verification of the fix by both parties.

There are many free tools available, for example, NESSUS or SATAN can determine port status, and CRACKER can test passwords. Security updates can be added weekly. Divisions should test security monthly. More extensive tools may require a license, and so it may be cheaper to install a central version.

SOFTWARE CONTROL

When reporting a fault, unauthorised software changes may be contributing to the behaviour. This information can be passed on and help ITS solve the problem. ITS may already have a solution and be able to quickly suggest an update. Asset management software can discover installed software and provide a list. This has the side benefit of providing a software asset list for a machine, determining software versions, what software may be missing, what is not working, what extra software has been added, and any bogus software. This will help meet the Macquarie University commitment to legal software and help with asset control. This may also help with keeping software current, by uploading new versions, and when a system has to be reconfigured or reloaded.

APPENDIX C: REPORTING IT PROBLEMS

The Division IT staff should be notified of all computer or equipment issues (including failures and new equipment requests).

The Division IT staff solves academic and general staff IT problems.

The Library IT Help desk solves student IT problems.

Telephone and electrical problems are not covered by the Division IT staff, and should be reported directly to the IT Service Desk.

HOURS OF OPERATION

Business Hours: full scope of services.

After Hours: limited scope of services, (email, web pages, files, access).

LOGGING CALLS

The Division IT staff can be contacted.....

By web page (use the fault reporting web page, which will prompt for details)

Primarily by email: (this ensures a time is logged to determine priority)

Secondly by phone: (useful when reporting an email or network problem)

Lastly by visiting: (useful when reporting a total computer failure)

The Division has a specialised IT team to deal with IT problems.

The University IT Help desk gives priority to the Division IT staff, and will redirect any user to their Division IT staff.

The Division IT staff will log calls to Macquarie University IT Services where necessary.

PRIORITY

Incidents include a service that has stopped working.

For example: email, internet access, files, printing.

The required date is assumed to be immediate (unless notified otherwise)

Prioritised as: critical, urgent, important, and serviced in order by logged date and time.

Service Requests include requests for new hardware, software or web updates.

For example: a new account or new equipment.

Where necessary, specify the date required.

Prioritised as: important, and serviced in order by logged date and time.

FOLLOW UP

The user will be given an estimate of the expected resolution time.

The user will be notified when the incident has been resolved.

The user will be notified when the service request has been completed.

The user should advise if the work is not satisfactory.

The user should contact the Linguistics IT staff for an update of a logged call.

If the urgency has increased since it was first logged, advise them that you require the priority to be increased.

FAULT DETAILS

The Division IT staff will ask questions, gather details, and attempt to fix the problem.

The user can assist, by accurately describing the problem, system details, what happened immediately prior to the fault, and any relevant history. The Fault Report web page will assist in clarifying the details, and will speed up fault repair.

CONTACT DETAILS

Division IT staff can be contacted through the details on the Division web page. Users should be encouraged to print out the contact details for emergency use. (See Appendix G: IT Details)

DEFINITIONS

LINGIT	Linguistics IT services
ITS	IT Services
Escalate	pass the request to another department
Business Hours	9:00AM to 5:00PM on business days (hours to be extended)
After Hours	outside of Business hours
Critical	highest priority (affecting entire campus or entire service)
Urgent	next priority (prevents user from working)
Important	all other incidents (call actioned in chronological order)

APPENDIX D: STAFF

DIVISION IT STAFF

STAFF HOURS

Existing staff may work normal hours or staggered hours (MUEA Section 4.2).

If some staff start 1 or 2 hours earlier, and some start 1 or 2 hours later, this would provide an extended hours service.

The existing staff may be asked to work overtime (MUEA Section 4.3), which may be applicable in emergencies or planned maintenance.

New staff may have employment conditions which specifically include overtime and rostered On-Call Hours as part of their normal duties.

ROSTER

Division IT staff may be required to work to a roster (MUEA Section 4.8).

Service benefits: extra hours of coverage for users.

Staff benefit: extra wages, quiet times free of interruptions.

NORMAL DUTIES

The Division IT staff member should.....

Attempt to solve problems using their desktop computer.

Attempt to solve problems over the phone.

Visit the users' office and attempt to solve problems on site.

Solve high priority problems first.

Solve problems in chronological logged order.

Escalate problems to the IT Service HELP Desk when appropriate.

ON-CALL DUTIES

The Division IT staff member should.....

Attempt to solve problems over the phone.

Remotely login and attempt to solve problems over the computer line.

Travel in to campus and attempt to solve problems on site.

Schedule any low priority problems for the next business day.

Escalate problems to the IT Service Desk when appropriate.

ON-CALL CONDITIONS

The Division staff member (during rostered hours) should.....

Have a Division issued mobile phone.

Have the mobile phone operating and accessible.

Be within mobile phone coverage area.

Have access to a remote computer.

Be within 1 hour travelling time to the campus.

(MUEA Section 4.7.7, 4.7.8, 4.7.9).

“Ready A” staff are on ‘out of hours restriction’ during which they are required to be contactable and available to perform any additional duties required.

Service benefits: extra hours of coverage for users.

Staff benefit: attracts extra wages (plus 7.5% Monday to Friday, 10% Saturday, 12.5% Sunday, 15% Public Holiday) (MUEA Section 4.7.2).

“Ready B” staff are staff who may be contacted in an emergency, but they are not obliged to be contactable out of hours or to respond.
No additional wages. (MUEA Section 4.7.5).

CALL BACK ARRANGEMENTS

If called in, staff will attract overtime rates, (plus 50% weekdays and Saturday morning, plus 100% Saturday afternoon and Sunday, plus 150% for Public Holidays), for a minimum of 4 hours, or they may take time off in lieu. (MUEA Section 4.3.3)

The IT Service Desk can be contacted during business hours,

By phone: 9850-4357 (extension 4357) then selecting “2” for Staff.

Note that ITS will only take calls from Division IT staff.

Division Users will be asked to contact their own IT staff.

By email: its servicedesk@mq.edu.au (not suitable for critical or urgent calls).

By web page: <http://www.its.mq.edu.au/operations/itsreq.html>

After hours, the IT Service Desk may have a paging service enabled, to log requests, until an extended hours or 24/7 hours service is established.

DIVISION COSTS

The major cost for on-call coverage will be wages.

For example, in the case of a Division with four IT staff, the roster could be for one week out of four for Ready A.

Each staff member will attract approximately a 20% wage increase.....

LVL 5 \$2,416 per year

LVL 6 \$2,783 per year

LVL 7 \$3,134 per year

LVL 8 \$3,442 per year

LVL 9 \$4,170 per year

Level 8 staff and below (MUEA 4.3.3), attract overtime costs if called in.

Alternatively, staff could take time in lieu.

One mobile phone, shared as per the roster.

One mobile phone account.

A laptop each, approximate cost being \$2,000, replaceable every 3 years.

A cable connection to home premises, at approximately \$30 per month each.

(MUEA is the Macquarie University Enterprise Agreement 2006-2009. The MUEA covers normal hours, overtime, shift work, rosters, wages and leave.)

ITS STAFF

The ITS Help desk is at present open 9AM to 5PM weekdays. The weekday hours could be extended. The operators could be asked to start 1 or 2 hours earlier, and other operators to start 1 or 2 hours later. One hour would change the 9AM – 5PM Help desk service to 8AM – 6PM, and 2 hours would change the Help desk service to 7AM - 7PM. Sick leave or recreation leave may require a temporary person to fill in, and planned leave can have someone rostered on. This would greatly assist Division IT staff for early morning work and events, and also in the evenings. (See Appendix A: HELP desk hours).

The ITS Help desk weekday hours could be extended to 24 hours. Adding 2 extra staff members would provide a 24 hour weekday service. Two extra shifts could be added, 5PM to Midnight, and Midnight to 7AM. The shifts could be permanent shifts or staff could be rotated by roster. In slack times, the staff could be given a list of secondary tasks, for example, updating documentation, and reviewing web pages.

The ITS Help desk hours could be extended to cover the weekends and public holidays. Help desk staff can be rostered for weekend coverage as a Ready A service based at their home. This would require a budget to cover the salaries and penalty rates. Macquarie University would need to provide each staff member with a mobile phone, a desktop computer and cable net connection. (See the Macquarie University Enterprise Agreement 2006-2009)

ITS TECHNICAL STAFF

The ITS Technical staff hours could be extended outside normal business hours, to cover a greater daily period, similar to the ITS HELP desk hours. This could be extended to 24/7 operation. The same on-call conditions, rosters, salaries, overtime and benefits, as the Division IT staff, would apply.

STAFF DETAILS

Division IT staff details need to be on a webpage link or one page document which is sent to the ITS HELP desk each month, quarter or yearly, and kept updated when changes occur. This would provide a central place for all IT staff details to be kept. When a problem occurs, ITS (and Divisions as well) can quickly determine who to contact. The HELP desk should print this out, as the details may be inaccessible when needed, if there is a web or network problem. The HELP desk should keep it in a folder, and replace the old pages, as they change. A suggested layout would contain, Division Name, Head of Division, IT staff, position, skills, and responsibility. The Division IP range. Laboratories, and Servers, Operating system, email, file, web. And importantly, the Date. Keep the details to one web page if possible. This webpage is also useful for the Division, and should be inside an Intranet, where it will be protected from web crawlers and SPAM generators. (See Appendix G: IT Details).

The ITS staff needs to be known to the Divisions, and not just a voice on the phone or an email. They should be encouraged to visit Divisions. The staff details should be on the ITS web page and kept up to date. Logging a HELP desk call will cover most problems. For the more tricky problems, direct contact will save ITS time and prevent fruitless coverage of the same ground. However, if the fault is already being solved, direct contact will slow the fault resolution, so some discretion is necessary. If the ITS HELP desk places updates, service alerts, and current faults on the ITS webpage, then Division IT staff can check here first and save time.

The Division should also invite ITS staff for visits to meet Division IT staff, and to see how the Division IT works, where it is physically located, and the special functions that the Division IT staff support. This would benefit ITS staff, to see the breadth of unique IT applications, apart from normal usage.

The remote location at 299 Lane Cove Road causes some problems, as access is limited to email and phone, and quick visits are not as easy. Relocation to a central

convenient on-campus location, with access to Division IT staff, would be beneficial to all.

CENTRALISED IT STAFF

If general desktop support and computer laboratory support may be more efficiently handled by ITS, the Division may wish to consider asking ITS to provide this service. This may reduce the Division budget, administration, accommodation and personnel load, by more efficient sharing of IT staff. A simple way to achieve this would be a paper transfer the existing Division IT staff to become ITS staff, which would in many cases be merely a title change and require no physical relocation. The Division ITS staff would have many specialised technical skills pertinent to that Division, and so their role would be unchanged. The Division would benefit from centralised computer supply, and direct access to ITS technical services, including closer links between technical staff. The relocated IT staff would benefit in becoming part of a larger IT organisation, which would mean better knowledge sharing, and more opportunity for career advancement.

PERMANENT AND CONTRACT STAFF

There should be a core of permanent IT staff, that is dimensioned to cope with normal work loads, day to day operations, maintenance, and fault repair. These staff are familiar with the systems, and can repair the faults faster. New projects and abnormal conditions may require the hiring of contractors to temporarily handle the excess, be it a one off, or cyclic occurrence. Part of the contractor obligation and written contract, should be to document the project and pass this on to the permanent maintenance staff, to ensure that knowledge is retained. This may include a seminar for all those affected. Perhaps a final payment could be conditional to ensure this. This practice would make the service smooth, reduce outages, help with future planning, and reduce the ramp up time of new staff. Division IT staff often have to explain the same details to each new contractor, each time they have a fault, this time would be saved, and the fault would be fixed faster. Additionally, contractors may be unaware of inter-dependencies, and may inadvertently make an error.

APPENDIX E: TRAINING ITS TRAINING

The Division IT staff would benefit from specialised training. Each specialised ITS tech (for example, an email tech) could run a course, with sufficient detail to understand most faults, overcome many, and enable accurate reporting of others, thus reducing the repair time. This could be a moderate length, 2 hour course, on the functionality, common problems, fixes, and when to escalate faults. They could also provide course notes, a FAQ, and a trouble shooting chart. This would aid in fixing the problem before it is escalated to ITS. Any new problems and fixes, identified by the Divisions, could be sent to the techs to increase the knowledge base, and be included in future courses. The Divisions can also show ITS how they use the systems, as some features are used in different ways within Divisions, which may be unfamiliar to ITS techs. Training should be regular, perhaps every 12 months, or as a new service is added or changed. By encouraging preferred procedures and common fixes, ITS may reduce problems, reduce repair times, and increase standardisation. The courses should be regarded as way to help the Divisions and the techs, and not as a chore. The Division IT staff could then run an internal course for their users, which would avoid some of the potential problems, and increase accurate fault reporting.

DIVISION TRAINING

The Division could run a training course. This would cover any specialised Division software or hardware, that involves the ITS techs and the ITS Help desk in maintenance. This could be a moderate length, 1 hour course, run annually, on the functionality, common problems, fixes, critical up times, and when faults are escalated. They could provide course notes and a FAQ to ITS and the HELP desk.

ADMINISTRATION TRAINING

The Central Administration should also run an annual training course for other Divisions and ITS, that use its services (e.g. Student One), how to use them, how to configure them, and common problems. New features introduced during upgrades can be demonstrated. Increased sharing of knowledge will reduce problems.

TRAINING FOR ITS HELP DESK

The ITS HELP desk would benefit from specialised training. They should attend the courses run by the specialised ITS techs, and the courses run by the Divisions and the Administration. They could be provided with a one page FAQ, and questions to ask the user. This would aid in clarifying the problem when escalated. The FAQ sheets should be kept in a loose leaf folder in front of each operator, with a separate page for each service (email, web, desktop, other services), and a blank section on the page, to add new problems and fixes. The Help desk should have monthly meetings to analyse the faults, and update the FAQs. The meetings should be regarded as way to help the users, the techs, and the operators themselves, and not as a chore. Any common faults can be passed on, for inclusion in future training sessions.

FYI MEETINGS

These meetings are a valuable method of passing information back and forth, between all the University stakeholders. Increasing the frequency to monthly would be helpful. Divisions may wish to make presentations. There would be a benefit from having an open forum in each session. This would allow off topic questions, and an opportunity for information to flow between Divisions.

APPENDIX F: PLANNING PLANNING

The Divisions should meet with the ITS Projects team regularly, to develop 3 year plans, for new projects, and major upgrades. This will allow budgeting, tendering, space allocation, and any building facilities to be prepared. This will also allow any IT impact and dimensioning to be determined, and implemented.

Agreement on the scheduling of maintenance will benefit all the stakeholders, and ensure minimum disruptions to Divisions in critical periods. It will also allow ITS more flexibility, a less hurried installation, and a greater testing time. The initial consultation, and the subsequent testing time, will reduce problems, as the implications of changes (even small ones) may not always be obvious.

SERVICE AND MAINTENANCE SCHEDULES

Divisions should prepare a yearly schedule, depicting essential computer, essential server, essential network uptime periods, normal usage periods, and preferred maintenance periods. Meetings with between the Divisions and ITS can determine a schedule, and will aid in the provision of a reliable service, in coordination with regular maintenance and minimal disruption. These reports should be made available to ITS annually, in advance, and with quarterly amendments where necessary. Realistic schedules might include 1 day per month for patching, 2 days per quarter for upgrades, and 1 week per year for major installations. Normal business hours should be used as much as possible. The Divisions should estimate targets for number of users, number of computers, number of software licenses, expected disk storage, probable network traffic, and expected number of webpages. This should be based on known existing levels and planned staff, teaching and research loads. This should include removal of obsolete accounts, obsolete data, obsolete IP numbers, and obsolete webpages. Divisions should be proactive and provide as much information as possible to ITS.

STANDARDISATION

Where possible, Divisions should use standard hardware, which would make communication of problems and solutions easier. This would be an approved computer type with known advantages and limitations. ITS could supply several approved vendors and negotiated pricing. This would avoid the necessity to obtain three quotes when placing orders. Alternatively, an order could be placed with ITS who would supply the required number of machines with a preloaded desktop. They would also take away the ewaste. They could be leased from ITS or purchased.

The CAUDIT agreement has promoted a large degree of software standardisation. University wide software licenses for virus and email software has further produced standardisation.

However, since this is a University that does research, there are many exceptions that require non-standard or special hardware and software. Some Divisions collaborate with other institutions, so compatible software and hardware are required. Some vendors provide free services that assist Divisions with small IT staff numbers. Where possible, standardisation within a Division should be attempted. This will provide known local solutions to problems, which the Division IT staff are familiar with, and can solve, before escalating problems to ITS.

APPENDIX G: IT DETAILS SHEET
DEPARTMENT OF LINGUISTICS

(Part of the DIVISION of LINGUISTICS and PSYCHOLOGY)

Head of Department: Associate Professor Linda Cupples C5A529 Phone 8788

Administration Officer: Ms. Collette Ryan C5A518 Phone 8774

Located in buildings C5A, E7B, W5C, W6B

IT CONTACT

Fault Reporting web page http://staff.ling.mq.edu.au/internal/fault_report.htm

Fault Reporting by email: LINGIT@ling.mq.edu.au

Fault Reporting by phone..... (no central phone as yet, still to be set up)

Mr. Ray Robinson (IT Manager) C5A538 Phone: 8765

covers RESEARCH problems with Sun / Unix / Splus / Waves.

Personal email: Ray.Robinson@ling.mq.edu.au

Ms. Lalana Knox C5A539 Phone: 8794

covers GENERAL problems with PC / APPLE / Microsoft / Windows / Groupwise / Novell.

Personal email: lalana.knox@ling.mq.edu.au

Mr. Neville Gilbert C5A545 Phone: 8791

covers WEB problems with Sun / Unix / Linux.

Personal email: neville.gilbert@ling.mq.edu.au

Mr. Chris Callaghan (Technical Manager) C5A540 Phone: 8766

covers RESEARCH specialised computer devices.

Personal email: chris.callaghan@mq.edu.au

Mr. Sam Perera C5A540 Phone: 8766

covers WEB Updates, GENERAL problems with PC and Software.

Personal email: sam.perera@ling.mq.edu.au

SUBNETS: 137.111.158.*** 137.111.160.***

SERVERS

Webserver: Panania.mq.edu.au www.ling.mq.edu.au 137.111.158.33 (Linux RedHat V8)

Email: srsuna.shlrc.mq.edu.au www.shlrc.mq.edu.au 137.111.158.21 (Solaris V7)

Email: Photocopier Konica1.ling.mq.edu.au (Konica 9155)

Email: Photocopier Konica2.ling.mq.edu.au (Konica 9155)

CENTRES

Speech Hearing and Language Research Centre (SHLRC)

Centre for Language Sciences (CLaS)

Dictionary Research Centre (DRC)

Translation and Interpreting (T&I)

LABORATORIES

T&I Teaching Lab E7B146

Conference Lab W6B301

Division Lab C3A414 (shared with Psychology)

APPENDIX H: REPORT STRUCTURE

Brief Report

Details in the Appendices

Revise Report after Division and ITS Feedback

TIME SCALE

Research August 2007

Plan September 2007

Interviews October 2007

Report November 2007

Implementation December 2007

GOALS

How to make a cohesive MQ IT team

How to implement 24/7 support

Timetable of introduction

Information flow

Who calls who

- Who does what

- Personnel

- Equipment (hardware, software, infrastructure, interactions)

- Help desk function

How does ITS work

How does Linguistics work

How do other Divisions work

What is common (procedures, problems)

- Study procedures

- Implement (ITS -> Linguistics -> ITS)

- Remainder of University

Propose solutions (minor, medium, and major)

- Solutions should be attractive and logical to encourage adoption (forcing won't work)

- Offer many facets (for each stake holder, some will work, some won't)

- Make recommendations (some are easy, some are cheap, others aren't)

- Suggest a path for gradual introduction

EXCLUSIONS

Network reliability

Access, dialup and broadband

Network traffic loads

Email Size (html, cards, signatures)

DHCP (fixed IP verses requesting an IP)

Routes (local servers verses remote servers)

Web pages (size, java, flash, frames, jpegs, versions, updating)

Staff sizes

Servers, location and ownership

Budgets

Document management system

Asset control (hardware and software)