Abstract:

Victoria University of Technology was formed in 1992 as a result of the merger of two Institutes of Technology. This merger brought together a diverse set of technologies, services and support practices.

The authors discuss their attempts to set up a centralised Help Desk to cover the geographically dispersed institution and the introduction of Help Desk technologies in an attempt to balance the demands of the customer with the available skills of the staff. Some approaches to raise the skills of information technology support staff to provide quality service in a distributed environment covering six campuses spread over a 50 mile radius are also presented.
1. Preamble - A Historical perspective of Information Technology Support

In trying to develop the appropriate model for the support of Information Technology, especially in a University environment, it is interesting to briefly examine the organisational development of computing and its support models.

Management of computing resources and their support needs have to a large extent been influenced by developments in technology. In the early days of computing, support was at a local level by the people actually using these highly specialised machines. As they became larger and more applicable to commercial and general applications, computer centres were set up to concentrate the large investments and the expertise needed to manage and support it. With the development of the personal computer, the “end-user” became more responsible for providing support. Then, as networks developed, support again became more centralised. Now, the technology is such that there is a need for support at the user or “client” level for the many minor problems that can occur due to hardware, software or local networking issues in the work place, as well as support from the centre by specialists. This support generally relates to the corporate or strategic systems and the corporate network. The central support services can also provide a valuable service in coordinating bulk or site software licenses, equipment purchases and setting procedures and standards to assist in standardisation of data models and software interoperability.

This paper is an abridged account of one new University's experience in introducing a Help Desk and grappling with improving support services during a time of uncertainty and rapid changes. It is not a unique tale. It may sound very familiar to staff from many Universities, especially new ones or ones where there has been a major restructure or a radical change in culture.

It is however our story.

2. The formation of a new University

Let us first set the scene by spending a brief moment introducing you to our infrastructure and organisational framework, which, by the way, is still in the process of developing its own identity and work culture.

The Victoria University of Technology (VUT) was established on the 1st Jan 1992 as a result of the amalgamation of the Footscray Institute of Technology (FIT) and the Western Institute (WI) - both located in the western metropolitan region of Melbourne.

FIT was a single campus institution founded over fifty years ago with a focus on Engineering, Business, Applied Science and Arts and at the time of the merger had about 7000 students (5500 efts).

Computing was provided through a central Computer Services Department (CSD), managed by the CSD manager who had an academically linked position. The CSD managed several computing platforms, supported the student administration system, the main campus network and four central computer student laboratories. They ran a small computer shop, some training courses and provided limited technical support to Schools and departments. There was no Help Desk or any central booking or work scheduling system. Calls for support were rung through to operations, the central office or the
workshop or to any individual the user could contact the Schools such as Engineering and Business ran their own computer laboratories and had their own support staff. Others, such as Applied Science and Arts also had their own computer laboratories and provided their own desk top computing support. Schools provided hardware repair services and assistance with networking, especially cabling. The administration, apart from student administration, used a mix of packaged support and external bureau services for computing support.

The Western Institute of Technology (WI) was 5 years young and had been set up as a new initiative in Education. It was established to provide a continuum of education from TAFE (community colleges) through to higher degrees. At the time of the merger, the Institute had three campuses, each about 15 - 20 miles apart, about 3000 students and was growing rapidly with many buildings (especially on the main campus at St Albans) in different stages of construction.

Information Technology support was provided through the Information Systems Unit (ISU) to support the administration and the Educational Computing Unit (ECU) to provide academic computing and networking support. Two physically different networks had been set up; one for administrative access and one for academic access. The ISU developed application software using Informix and supported various commercial packages. The ECU was part of the Faculty of Business. It had developed the academic computing network throughout the Institute and installed and supported about 15 computer laboratories (each with 20 personal computer). These were used by all Schools and departments.

The merger brought together a wide range of computer hardware including CDC, IBM, SUN, MIPS, Sequent, and Encore. Three networking systems were used: Banyan, 3COM and LAN manager. Personal computing at the Footscray campus was entirely DOS/Windows (and some OS/2) whilst at the other campuses it was a mix of DOS/Windows and Apple.

Following the merger the three different groups were merged into one department called Information Technology and Services and a new Director was appointed (from outside the University). Within this merged department three branches were established.

The CSD manager from the Footscray campus became the Manager, Computing and Networking Services (CNS) Branch, the former head of Educational Computing Unit from the St. Albans campus became Manager, Client Services and the former head of the Information Systems Unit from the former Western Institute became Manager, Administrative Computing Services. Each of these managers have University wide responsibilities for six campuses. The merging of the different cultures and the changes in the roles for the senior staff was achieved with considerable pain.

3. Establishing an infrastructure
During the amalgamation negotiations, it was recognized that the soon-to-be-established University required a number of fundamental services including:

1. a uniform and easy to use telephone system
2. a communications network that ensured the teaching and administrative processes functioned in an uninterrupted manner, and
3. standards.
Prior to the amalgamation, a Communications Steering Committee was established and was made up of the senior IT management, specialist subordinate staff, and knowledgeable academics as well as an external consultant (who was subsequently appointed as the new Director IT&S). This committee reviewed and implemented the necessary communications strategies to ensure that:
1. all campuses would have access to a common PABX service and
2. all campuses had communications links capable of accessing the central administrative and academic systems.

Apart from the inevitable amalgamation politics, work practices continued at the campus level as they did before the amalgamation.

Following the merger, it was recognised that information technology in the University will be best served by identifying the principal functions. These were identified to be:
1. developing and implementing administrative systems
2. providing a communications and network infrastructure
3. providing support to the University community for technology services;
4. developing and implementing information technology standards;
5. assisting in the enhancement of academic pursuit.

The current structure is based upon the acknowledgment of these functional requirements.


With the changing structure, there developed in our IT Department a consequential change in work practices. Some of this was intentional owing to politics and personalities that needed time to assimilate to the new way, and some by necessity as a result of the impact many work activities had on the new and wider community. However, the main focus was to provide the best possible service to our new University community. What came before us were four key issues:
1. The necessity of getting to know the "new" opportunities that we all had inherited.
2. Learning to let go of prior ways of doing things and thinking about things.
3. Coping with radical change and ensuring people in our Department and outside it knew what was going on.
4. Perhaps most importantly, each of the managers in the IT Department had to appreciate their changing roles and scope.

These four issues still face us today - but fortunately, in considerably lesser degrees.

Change can be implemented softly and compassionately but with every intention that the change will go ahead, or, alternatively, change can be implemented in a very short space of time with far more adverse and expensive results. Fortunately, the former has occurred.

To paint the picture a little more, since early 1992, the need to extend information technology services has escalated to an extremely high level. The network at our western campuses had to go through substantial change in order to cope with the new buildings and campuses being erected as well as coping with the increased network traffic between campuses. Although it is acknowledged that we may not be unique in this growth-intensive activity, it should be made quite clear that this is not an exaggerated portrait of growth we have been, and are, experiencing. Indeed, this growth has not slowed down and we believe will continue for some years. For example
the last campus was opened at the start of this year (1995) and will be expanded next year. Additional buildings are being constructed or planned for at least three of the campuses. All of these require substantial additional network infrastructure and IT support.

5. The Evolution of a Model
The following are some of the practices adopted earlier to monitor change activities. Prior to the amalgamation the Western campuses had in place a pseudo help desk system using the PC-based Paradox database software. All reported problems, requests for changes or requests for new services were documented, serially numbered, logged on a database, and assigned to a specific individual for problem resolution. A work authority or Job Request Form was developed. The system was primarily used to:

1. condition our clients to record their requests for changes and to have those requests approved by their supervisor
2. make the solution provider accountable for specific tasks assigned to them - a piece of paper with a person’s name means a lot more than a verbal instruction requesting them to carry out a task.

The methodology was merely a call logging and assignment facility. Nothing more. The Footscray campus did not use any formal call logging or problem reporting facility prior to the amalgamation. All calls for assistance were taken on an “as received basis” and mostly by those who the clients chose to deal with.

After the formation of the University, and the establishment of the Department structure, as it is today, the Client Services Branch purchased a commercial Unix-based Help Desk package and put in place a project team, from its ranks, to implement a University-wide Help Desk system. It was decided that Operation Help Desk should first happen at the Footscray campus as there was no reporting or call logging system in place at that time, or prior to the amalgamation and the need to formalise support services was greatest on this campus.

Until the Help Desk was fully operational at Footscray, the manual form-based call logging system at St.Albans continued to be used. The New Help Desk system was utilised to log calls and to generate reporting for tracking and resolution purposes as the staffing mix on this campus was not skilled at a suitable level to provide a more responsive service to the community. Computer Operations staff (who had previously also provided counter enquires) were partly retrained and became the Help Desk Operators. There was no other choice of staffing in the Branch.

6. Key Issues
The following are some of the key issues which emerged in setting up the new services:

The scenario at this point was that the Client Services Branch was introducing a formal call logging system on behalf of the Department. Staff belonging to this Branch are spread across the five campuses and the Branch has functional responsibility for:

1. Support at the desk-top level
2. Staff training
3. Documentation services
4. End-user computing support
5. Standards and Procedures

It took quite a while for IT staff to recognise the need to formalise the way in which they worked and how they should offer support to the client community. Specialist staff
continued to implement change without due regard for documenting their change activities with the justification that they were “too busy to do paperwork”. Nor did they communicate any proposed or planned change with their peers in the same department.

The order of the day was to get the job done - it was URGENT. There was an air of need and urgency. The University had to become operational within a very short time frame. New campuses were being commissioned, new buildings going live, students being enrolled. All required the involvement of our Department. At the same time, the Department was providing support to everyday problems and requests for service modifications and installation of new technology.

The Help Desk, in the meantime, became known as *The Disaster Desk*.

Help Desk staff had absolutely no idea what was going on. All they could do was log each call and forward the problem report to the relevant section leader. There was lot of activity happening around them, but nobody was keeping them informed of what was going on! Growth and change was occurring in too many areas. Criticism was being received from many sides of the organisation - from all campuses. On the one hand clients wanted a solution to their problems within the shortest possible time to meet deadlines they were expected to adhere to; and on the other side, limited funding and limited staffing in the IT area necessitated quick fixes, identifying and implementing solutions that caused the fewest problems, and so on.....

7. Reviewing the Work Model

Although initially there was no formal problem resolution or change management, a number of structural and resourcing changes have been implemented since early 1993. As part of our growth and establishment cycle, we had identified the key actions which would need to be taken to assist our situation.

What became apparent, was the need for prompt notification of problems and the need for prompt resolution to those problems. There was so much change happening on all campuses, a lot initiated by the central IT department itself. *Prompt attention to firefighting* was the order of the day.

The Help Desk was not fully utilised as a central reporting mechanism. Problem logging was still happening at the campus level with no consolidated reporting. Specialist IT staff still preferred to receive resolution requests from their clients as well as manage their own problem resolutions according the priorities they each set for their work load. The Help Desk was used only to assign problem calls if the clients chose to report their problems to the respective campus-based Help Desk.

We found that while each section in IT agreed that a central call logging facility was necessary, those same sections did not recognise the need to effectively communicate activities they each were involved in. For example, changes were being made to the network infrastructure and field support staff were not being kept informed of those changes. The work culture in the Department needed to change, and change very quickly.

It became apparent that it was not possible to approach problem resolution or new activity or change activity without effective communication between and within the Branches. We can say quite candidly, that an organization can buy the best technology,
spend many thousands of dollars to implement it, but that organization will not survive unless the surrounding infrastructure and attitude is in place and its staff members are attuned to the needs of the client community.

Many of the staff in the IT department were anticipatory of the Help Desk solving all of the Department’s communication and priority setting problems. Typically, they expected (and a some still do) the new software to overcome all of their procedural and communications problems as well as their problem and change priority and resolution needs.

In the course of this new growth period, a number of approaches and actions were attempted as measures to overcome apparent communication and resourcing problems. Most of these are now in place or in the process of being implemented.

**ACTION #1 - New Account Manager Positions**

At the St. Albans campus, some changes were made to the department’s staffing profile. Some of the part time staff salaries budget was translated to provide a limited number of established positions. The key responsibility of these “new” positions was to “account manage” or represent specific client groups.

1. Day-to-day requests for general assistance and reporting of problems, however, are still placed through and processed by the Help Desk.
2. The representative is required to follow through on any outstanding issues or planned activity that has an impact on IT services or where IT services needed to be changed or implemented that could impact the representative client group.

This model has been very well received and was eventually also adopted at the Footscray campus once the various other actions referred to below were implemented.

**ACTION #2 - Establish a Works Review Group**

Whilst it was fine to log all calls for assistance on the Help Desk system, there was no built-in mechanism within the Help Desk package that could be used to actually manage changes. A separate procedure was deemed necessary.

A Works Review Group was set up and met on a weekly basis bringing information, from each Branch, of planned changes or new activities for review, discussion and feedback. The objective was for relevant feedback to be taken back to the Branches for consideration in their respective project planning activities. **This initiative failed.** Managers did not want the group to determine priorities for projects proposed by or belonging to them. Review group members did not have the background skills to appreciate the impact of proposals brought before the Group; and those that should have attended were needed to work on projects on other campuses, and so forth, and, others just simply forgot to attend!

**ACTION #3 - Facilitate Communications**

As an interim measure, each Branch set up a generic email box to post instructions and activities such as project timelines, warning message about changes or hot spots, for their staff (who were spread across different campuses). This had an auto CC facility so that other branches were automatically informed as to what was occurring. Since then a more formalised Bulletin Service has been set up.
**ACTION #4 - Establish Training and Development Facilitators**
We have now established staff training and development **facilitators**. These individuals have become the Branch consultants for each particular software package such as Word Processing, Electronic Mail, Unix, and so on. Their role is to identify the skill levels of Branch staff as well as build up their own levels of expertise in a selected platform to enable them to provide advanced or consultancy-level support.

In addition, a process has begun where every staff member in the Services Branch must go through an intensive training program to provide them with the necessary skills, up to an intermediate level, on every software application package the IT Department supports for Desk Top computing - including a small range of utility software that will assist them to effectively troubleshoot general media, hardware and software problems occurring on the client’s desktop. This training covers both the DOS (Windows), UNIX and MAC platforms. There are some exceptions such as SPSS and ORACLE for which specialists are available.

Essentially what has been set up is a grid type skills set. Each support consultant has been allocated one of the most commonly used desk top application packages in which they must become proficient to “expert” level. In addition they must all know the basics of most of the commonly used application packages.

The introduction of this was different from the previous approach to support and is still being refined.

**ACTION #5 - Expand the Client Training Program**
An intensive client training program was initiated to build up the basic IT proficiency of our clients to a level that we hope will decrease the number of support requests logged by the Help Desk and thereby progressively reduce the Help Desk resourcing issue.

As an information technology provider, whether we like to admit it or not, we impose certain technologies upon our clients. We therefore have a responsibility to build our clients’ skills up to at least basic proficiency that will permit them to carry out their normal duties and not feel threatened by the new technology they are increasingly being introduced or exposed to.

Although the number of calls to the Help Desk has still not dramatically reduced, the complexity of calls being logged for prompt resolution has increased placing even more load on the Help Desk, especially on the skills base required. Hence the need to develop expert skills for the Help Desk staff.

**ACTION #6 - Establish the Central Help Desk**
The University, like most other organizations, has suffered financial restraint. In turn, the bigger money spenders in the organisation have suffered. Our department falls into this category. With the accelerated growth and extent of change our IT department has been involved in, the allocation of funds toward infrastructure support and growth was, and still is, substantial. We are, nevertheless, seen as one of the bigger money-spenders. As with all IT departments we have not always been successful in obtaining funds for all of the necessary infrastructure-related projects which we (and often the users) believed were “necessary”.
The increasing client base, the spread of the client community, the increasing complexity of problems, and the increasing need to introduce new technologies to the desktop were not matched with the number of people in the IT department who had to provide or support the services. As a support department we have a responsibility to accommodate the client’s expectations and needs without compromising the quality of support. Field support services on each campus are, however, stretched to the maximum. Establishing a central Help Desk then became essential.

Setting up a campus-based Help Desk was, we believed, an expense which could not be justified, even though it was often requested by the clients at those campuses. By centralising this service, it was possible to place more staff out in the field and get them sufficiently exposed to their community as well as rostering them on the Help Desk - in this way, we believed that the Help Desk has become more empathetic to the needs of the client and has enhanced the support skills needed to resolve a greater percentage of the problems being reported to the Help Desk without referral to a field consultant.

It has also been possible to roster support staff to perform duties on several different campuses. In this way they are exposed to the nuances and perhaps the culture of each campus, thereby enhancing their technical skills, their people skills and therefore the overall service quality, taking their blinkers off and exposing them to a wider and more interesting sphere of learning, tasks and people. Not setting up the campus based Help Desks has also provided financial savings.

8. The Help Desk - Why So Much Attention?

Earlier we put forward the premise that the focus of the Help Desk is in the process of changing and, as an industry, our reasons for establishing Help Desks are also changing. Let us now attempt to explain this.

Whereas in the past we have been concentrating on implementing technology to improve the performance of other technologies, it is proposed that the business focus itself is now being changed, and that revised focus is to improve the technology so that the level of customer service is improved. Perhaps this is a result of the international focus on quality and continuous improvement.

As IT professionals who have been in this industry for a long time, we should remember that he people who took advantage of our skills or services, or works of art ie systems we developed, were called or referred to as USERS. Some of the common phrases included:

“...get the User involved...”
“...have you spoken to the users ?....”
“...user involvement, ...”, etc

The more common reference to those same users is now Customers or Clients.

Our focus as IT professionals must change because our customer-base has changed and perhaps for the following reasons:

1. Technology improvements,
2. World trends to improve quality and service levels,
3. Economies in Recession., and
4. Technologically better educated customer base.

We must never lose sight of our customer. Our Help Desk exists solely to serve the customer, not the Help Desk staff.
The Help Desk must no longer be viewed as a poor relation in the Information Technology support area. It plays a key role in the provision of support and can be viewed as the representative of the IT Department as it regularly deals with issues where the work gets done. Information collated by the Help Desk can assist trainers and documenters to identify pockets of staff who require training or additional support documentation. Indeed, your Help Desk facilitates a pro-active service approach.

9. Tools of Trade
The Help Desk is only as good as the people who staff it and the tools they have to work with. There should be no compromise or shortcut to this premise.

Without a doubt, your Help Desk must be attended by skilled and field-exposed staff who can relate to the customer’s problems or concerns and can offer solutions to those needs or problems for the majority of calls received. The Help Desk can not be expected to solve every incoming call for assistance so it is essential that Help Desk staff possess a high level of inter-personal skills to handle difficult callers and sustain a high level of customer satisfaction. As it is important to have skilled Help Desk operators, it is equally important to have effective backup support who will be called upon to provide second level support in the field.

Some of the technology that can assist the Help Desk to cover peak call-in loads or to be used as resource-assisting backup equipment include:

1. fax-back information - customer service,
2. Interactive Voice Response technology - cover peak loads or after hours access,
3. pager messaging - prompt field support,
4. On-line services - WWW and gopher services and
5. Automatic Call Distribution - better a human voice than an answering service.

10. Marketing Your Help Desk
Promote your service to your customers and do it effectively. Make certain your support service facility or your Help Desk is recognised and has full support of your management and your management’s management.

Once you are comfortable with the physical Help Desk setup and resourcing, implement a marketing strategy that will promote your services. Make certain that you have the correct infrastructure in place to sustain any increase in support requests. You only get one shot at your customer and if your marketing, plan fails because your Help Desk could not meet the increased demands resulting from your promotion, it will take a very long time to regain your customer’s confidence, let alone support for future ventures or collaborative activities.

Some techniques you can use to promote your Help Desk include:

1. short seminars,
2. publication service,
3. “How to ..” tips for services in your publications,
4. Providing summary statistics,
5. Making your clients aware of operating procedures,
6. Conducting customer surveys and
7. Talking to your customers
If the quality of your support is acceptable to your customer, we suggest they would not object to paying for any extras. The Help Desk will continually be expected to maintain the same level of service to the ever-increasing customer base and at the same time not receive any additional resourcing.

Some of the tools and techniques mentioned above will help you to develop a better or more thorough understanding of your customer’s needs.

11. Service Level Agreements (SLA)
As more services are expected by the client, funding for those services need to be met by somebody, either you or the client. Service Level Agreements can formalise the support levels as well as ensuring the availability of resourcing necessary to meet those levels.

SLAs are also very effective mechanisms for quality reviews, either by your customer or by the service provider. Ideally this would be done by both parties meeting regularly to conduct progress reviews of service received and provided. SLAs are one very effective step in ensuring your Customer’s expectations match the quality of the delivery of services you have agreed to provide.

12. “Customer-Care” Program
A “Customer Care Program” is a valuable approach to formally letting your customer know that you are there primarily to help them resolve problems arising from the technology they need to carry out their business. If new staff to the organisation are made to feel that they can get assistance and are welcome by the technology staff, they will be much more understanding when problems arise. One approach to get them on-side is for the IT staff to:
   1. Adopt a Customer Care philosophy and promote it as one.
   2. Do a deal with your Human Resources people and have them notify your Help Desk when a new person starts employment.
   3. Have the Help Desk introduce itself and the services it provides to those new incumbents.
   4. Send out an information kit with useful names and contact telephone numbers.
   5. ......make new starters feel welcome.

13. “Frequent-Caller” Program
Study the reports generated out of the Help Desk system and identify customers who are frequent callers. Find out why they are frequent callers and carry out a telephone survey or personal visits to get to know your customers. The aim is to place a face to every name.

14. TQM & Continuous Improvement
The quality of the overall service your Help Desk provides to its customers is only as good as the understanding the Help Desk has of its customers. Some techniques that could be adopted to ensure that quality and continuous improvement remain at the forefront of your Help Desk are:
   1. Regular meetings with Help Desk Staff
   2. Posters in the Help Desk Room
   3. Help Desk staff to meet their Customers
The Help Desk can facilitate Continuous Improvement by providing reports with vital statistics highlighting inefficiencies.

15. In Conclusion
Our story is not finished. The University is maturing. Partly as a result of the training put into place and the increasing sophistication of customers, calls to the Help Desk have started to reduce, but, as predicted, many of the calls are now more complex and take a higher degree of skill to resolve. The Help Desk staff have risen to the challenge and have participated in most of the training, including training in answering telephones and other inter-personal skills. The Help Desk has lost its name as the “Disaster Desk” and is now considered an essential part in providing support services to the client.

The University is starting to establish a good reputation for innovative courses and a good Information Technology infrastructure for its students, who are after all the real customers.

Postscript
Norbert Riedl has since left the Victoria University of Technology to become Director of Information Technology Services at the University of Melbourne which is Australia’s leading research university, has about 30,000 students and over 5000 staff.

The IT support model used at The University of Melbourne is a two tiered one. Schools and departments are encouraged to become as independent as possible in the provision of direct desktop IT support to students and staff. The ITS department, has responsibility for the core infrastructure such as telephones, the campus network, administrative systems, large timeshare computers (including several High Performance Computers) and runs an extensive IT training centre providing training to staff and graduate students. ITS also runs a central Help Desk. All departments are encouraged to employ (or train existing staff) to be Local IT Experts (LITES) and Local Area Network Administrators (LANADS). Sometimes they are the same person.

The Help Desk primarily supports the LITES and LANADS. Although other staff and graduate students may call the Help Desk they are general referred back to their local LITE unless it is an emergency or the departmental LITE is not available, or is unable to resolve the problems. Over 85% of all problems can be generally be resolved on the direct call to the Help Desk without further assistance. Where it can not be resolved it may require a return call or be passed on to an expert in ITS who then becomes the consultant to the problem.

ITS also runs forums and provides specific training and information to LITES and LANADS improve their expertise. Extensive use is made of an extensive CWIS (using Netscape) to disseminate the information. ITS via the University IT Policy Committee develops the standards and policies on support and annually requires all LANADS to certify that they are administering servers in their areas according to the standards. This certification process is audited by the University internal auditor.

The model is a little different from that at the VUT, but works well for a large institution. It has its shortcomings but is constantly being improved.

It is our aim that the IT support at the University of Melbourne is adaptable and allows the clients to maximise the use of the very extensive IT facilities in the pursuit of
academic excellence, for which the University is renown. We wish to retain our place as a leading research University and are using IT as a strategic tool in the process. This requires support services of the highest standard and continuous improvement.
Acknowledgments:

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