Click, whir, hum and watch it all fly or completely fall apart! The computer user, often, is the last to know when a major change happens to their system. In this paper, we would like to share some of the ups and downs of trying to, not only “keep up with the Joneses”, but with technology itself. As equipment becomes obsolete, so do many of the ways in which things are done. No matter what you do to prepare users for change, sometimes a bit of resistance can still be felt. Plymouth State College is preparing to use an Alpha box instead of its VAX’s, and at the same time, keep business running as usual. Meetings are held and discussions are shared concerning these issues. Some programs which were heavily used will no longer be supported. Will the replacements outshine what was there before? Only time will tell. This paper will share, and hopefully enlighten others, with our experiences in preparing for the year 2000.
Plymouth State College
Dealing With Change: A User’s Perspective

History of Plymouth State Computing

Plymouth State College (PSC), founded in 1871, is a residential campus and is part of the University System of New Hampshire. It is located in the heart of the White Mountain and Lake Region areas of New Hampshire. It averages approximately 3,500 undergraduate students and also includes two graduate programs and continuing education. Curriculum Support is a subdivision of Undergraduate Studies which services transfer students, the Academic Catalog, Interdisciplinary Studies, and general education requirements. Our office is experiencing many changes (as are many other offices on campus) in the way we do our computing. We decided to take a closer look at these changes and interview people on campus who are either in charge of the decisions which create change, or are co-workers in the offices most highly affected by the changes.

During an interview with Steve Burrell¹, Director of Information Technology Services, we were able to obtain the following history: In the mid 1980’s, “Fred” and “Ginger” (our VAX mini-computers) came on-line and were considered state of the art technology for Plymouth State College. PSC also implemented and maintained a Pyramid system, using UNIX, to maintain the student accounts. Eventually “Fred” and “Ginger” were replaced with the smaller-in-size but much more powerful “Pooh”, “Piglet” and “Eeyore” running VMS. The Pyramid was replaced with “Oz”, running Ultrix. During the time of “Fred” and Ginger”, PSC was operating primarily a terminal based system and personal computers were not commonly used in the offices. Most of the applications we used to perform our jobs were available on the VAXs via terminals.

PSC, in the effort to integrate with the growing popularity of the personal computer, started developing a change in the direction of computing. Digital scaled up to the 90’s and started writing word-processors and calendars. This was not the core part of their business and so, these packages were partnered with Microsoft. Eventually, this led us to migrate our VMS system to another operating system.

All-In-1, a product which ran on the VAX’s using a simple terminal, provided word-processing, file sharing, e-mail and a calendar. This package, which most of us were using, went into a state of maintenance and had no real future or intention of expanding. Other applications, such as spreadsheets and statistical programs which used to run on the VAX’s, were also abandoned as personal computers started replacing the terminals. We were gradually becoming more PC centered and began integrating products by Microsoft, Lotus and others. This was mostly due to the support issue of the programs on the VAX’s and the fact that our VMS system was at least four operating system versions behind.

Our Current Direction

Microsoft Office is now being used for our primary office tools. The Computer Science and English Departments, along with the “Introduction to the Academic Community” course (which includes an exercise in computer skills) started using these tools in conjunction with the Windows ‘95 upgrade.

¹If interested in more information his homepage is: http://eeyore.plymouth.edu/~sburrell/home.html
POISE², the database we currently use, will remain stable for the time being. When the system is ported over to the Alpha box, Reg3.0, a package used by the Registrar’s Office, will be implemented for the Registrar’s Office, and, Information Technology Services at PSC will be doing an annual evaluation. The costs of implementing something new right now are much greater and POISE, for the time being, is reliably servicing our needs.

All the other tools and applications will be client-server based and PSC will be implementing Netscape Communicator along with Microsoft Office Tools. This will all be driven by the World Wide Web. We found that Netscape can be used for many of the features All-In-1 used to offer, such as e-mail and shared calendars. This brings the campus together much more like a family. We will also be seeking future applications.

How Things are Progressing

Plymouth State’s Information Technology Services (ITS) is making the effort to help bring other offices into the year 2000 by analyzing the current equipment and making recommendations. There are problems where, if the hardware is not powerful enough, work can be very slow. This is being addressed by offering recommended packages to the offices who need an upgrade. The packages can be viewed online using Netscape at ITS’s homepage³ where ITS has done quite a bit of research to put together the best packages possible for each office’s budget. Training is also offered by ITS in the form of various workshops or individual appointments.

In charge of most of the workshops is Katharina Kelsey⁴, who is highly involved in ITS’s Management Information System support. During an interview with her, we found that the first reaction for newcomers is fear. Questions such as: “Can I do my job?” and “Can this new system do everything the old one did?” often come up. People are feeling an inadequacy when migrating and learning new software and this often leads to frustration. Rarely did she get the “Heads” of the departments and dealt mostly with the primary users. The people in charge of training had just started using the new systems, and it has been a learning experience for both the trainers and trainees. When the workshops first started, a common problem occurred when people were turned loose in front of all the new, fancy equipment. Often the attendees did not pay attention to what the person trying to conduct the workshop was saying. During subsequent workshops, it became more effective if everyone was pulled away and explained what they need to know first. After this is done, handouts are distributed and then the attendees are turned loose to experiment and practice what they had just been shown. Physical setup is also important when designing and planning these workshops. If a cluster has even a small area where people can listen without sitting in front of a PC, the workshop ends up being much more productive.

Initial reactions, to the new software and hardware changes, are for the staff to immediately put up their hands and state “Not in our office!”. Interestingly enough, once these same people make even a little effort to get involved in the workshops and applications, and just try some of the new things, they get excited, then the resistance barriers come tumbling down! One of the biggest obstacles we have come across is to convince others to try these new ways of doing things. The calendar, which probably is the most complicated application to learn, has a lot of great features. We just have to convince the offices that this is something which can be very beneficial.

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² People Oriented Information Systems for Education, developed by Campus America, is our on-line database system
³ Information Technology’s homepage can be viewed at: http://www.plymouth.edu/psc/infotech/
⁴ If interested in more information her homepage is: http://eeyore.plymouth.edu/~kkelsey/home.html
Computing security will need to be tightened, due to the way we set up our UICs (user identification codes). Right now, a lot of the departments share UICs and “Samba”, an application which will allow us to manipulate programs between systems that have long filenames, will not work with shared UICs. After changing over to the Alpha box, this problem is no longer an issue.

A comment heard frequently across departments is “Things change so quickly we do not have the time to do our own jobs anymore”. We intend to eventually put together a platform where new applications can be easily developed and maintained using JAVA, viewed through the Web, instead of VAX Basic and DCL. We are now working to create an easy way to use POISE, in conjunction with JAVA so we can perform POISE or ASQ queries and updates using Netscape. On a brighter side, the Netscape Web Page Composer (and other HTML page designing tools) have made it easier to design the various department Web pages. Applications, such as Microsoft Word and Excel have add-ons which do HTML conversion automatically so that no matter what a user’s familiarity with HTML is, he or she will have the ability to design and update pages.

The Alpha server, which initially had a few setbacks, (mostly due to bad disk drive controllers) is now fixed and ITS has implemented a good tape backup system. The VAX’s will be used for storage, for door-locking purposes (designed primarily for the Security office and Plymouth’s Police Department) and mail functions.

**Pressure Points**

We took time to interview some of the users of this new technology and decided to pick on the offices who deal with the students first. These offices do not often get the luxury of time to bring themselves up to speed. Busy offices, such as these, need to be fully functioning 99.9% of the time.

Sue O’Callaghan, who is the Computer Use Coordinator for Admissions, mentioned that there was a disturbing glitch in one of her applications which caused quite a bit of frustration. Her frustration was mostly due to the fact that none of the other PC’s were having this difficulty and it just appeared to be the copy of software on her machine. She could not get the immediate support she needed. Even though the specific problem was clearly explained, it was two months before a solution was identified. In spite of this, she still needed to perform the task and did whatever needed to be done, even if it meant the editing of shared mail merge documents was not possible on her PC. She also states “We are not doing the same jobs we did two to three years ago. A significant amount of time is spent on training co-workers. This needs to be done if we want to remain cutting-edge.” She is currently planning what direction the office will take and wants to be on top of frequent changes. In accomplishing this goal, a large amount of patience is needed. When a busy office demands a lot of training, there are constant interruptions.

When Netscape Communicator was introduced to Admissions, Sue realized that it was important to concentrate on getting the rest of the staff up to date. This way other staff members can help with the tasks and one person is not doing all the work. After installing Netscape Communicator on three co-worker’s PC’s, she discovered that the required Oz accounts had not been established. If ITS installs a software which requires an account on a specific node, that account should exist before the PC is delivered or upgraded. When Sue first contacted ITS she was told by the ITS help desk that everyone had to come to the ITS office to obtain Oz accounts. Most of the staff already had VAX accounts and used them for their e-mail, so this did not seem to be necessary. Miscommunication can occur when personnel changes have been made in busy areas across campus. New people sometimes either were not told everything, or there was too much to

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5 Admission’s Homepage can be viewed at: http://www.plymouth.edu/psc/admit/index.htm
remember. When a secretary position is eliminated, student workers are used to perform the many tasks. Not all the student workers are up to date with all information, and, mistakes can occur. This leads to frustration. Sue and the Admission Office are pushing forward in spite of these challenges and do not make any attempt to fall back to the old ways. She sticks with moving forward.

Sue found that recommended HTML (Web design software) editors are not always readily available. She ordered one package and waited weeks. Finally she decided to continue a beta version downloaded from the Web.

One question comes up frequently: “Once the campus is up to speed with the Microsoft and Netscape products, is POISE going to go away?” Each office has a specialist who does complicated routines which help to keep the office functioning as efficiently as possible. These routines are not always clearly documented. These are important issues we frequently try to address. We are all of the belief that the customer (the students) comes first and we must provide the best service possible in spite of changes.

We interviewed Laurie Porter, who is the Financial Aid Office Computer Use Coordinator for Plymouth State College.

In 1993-94, the Financial Aid Office submitted a proposal to the Principal Administrator’s that would bring PSC in line with the Department of Education initiative of Electronic Data Exchange. At about the same time, Laurie had back surgery. As this DOE initiative was PC-based and most of what she had grown-up with was main-frame based, this would be a very big undertaking.

The proposal was approved, two PC’s were purchased, and Laurie was given the time needed to successfully complete the project and to make an easier transition back into the swing of a normal fast-paced work day after her surgery.

Her learning style, being a bit different than most, enabled her to build a number of her own programs/systems that have proven themselves. During this new project, she quickly learned that not all schools that she deals with are at the same electronic level. Other offices have mixed hardware and software, which are not all compatible with what we at PSC are running. She also quickly realized that she had a tremendous amount of new things to learn in a very limited amount of time and decided to purchase her own PC and set up her home PC workstation to help. She has found that most on-line help, whether available through the application or by phone, appears to be very useful.

Keeping up with electronic initiatives and information technology is very important to PSC. After many years of working with a successful main-frame based system, a common problem that many offices at PSC are experiencing, is the idea of wanting a PC on one’s desk. Becoming comfortable with a PC is a challenge but much needed. Laurie states: “With electronic systems, we are able to improve our service to students. Department of Education electronic initiatives are positive, will get us away from using a lot of paper, and will save future trees.”

Over time, Laurie has built a number of programs/systems for serving students, staff, and outside agencies. These programs/systems have proven themselves and she is not one to quickly jump to something new just because it is new. As with all new directions, she has questioned herself and heard others question her with “Are you doing this right? Is this the direction that we should be taking…..”

6 To view the Financial Aid’s office homepage use: http://www.plymouth.edu/psc/finaid/
She has found that you must be flexible, but there are times when you also must stand your ground.

Most recently, she has been working on ways to do historical diskette back-ups of POISE main-frame data bases, restore the data bases to their original main-frame locations, and re-create the data in its original form.

Laurie has had the opportunity to work for PSC since June of 1981 and feels “very fortunate to be working with so many talented people!”

We interviewed Deb Burnell, who was an Accounting Clerk III for the Bursar’s office. (She has recently changed to a new position in the Business Department) She is new to PCs and just obtained one this summer. So far she likes it (especially the CD-ROM player) and it appears to have many nice features which she does not have a lot of time to explore. The Bursar’s office relies on a lot of batch\(^7\)\) which are having a rough time performing their tasks due to changes which have been occurring on campus. Some of these changes are personnel changes, but quite a few do involve hardware and software upgrades. Deb was not all that involved in All-In-1, so that change will not affect her and gives her a chance to concentrate on what is coming. (Other people are frantically scrambling to convert or eliminate their All-In-1 documents in preparation for the demise of the program at PSC) She has been attending various workshops, but does not have much time to use the new applications. This is due to the fact that most of their processes are done using POISE routines. The Bursar’s office is moving slowly in regard to the new upgrade and originally had no intention of converting to Netscape mail but they have recently started the conversion. Eventually each staff member will have a PC. One benefit is the ability to have more than one window open at the same time. This is useful when performing POISE routines. Now, users find they can perform lots of routines at once!

Deb took a class in HTML and Web page design which was offered outside the college and is not only excited, but found she loves doing that type of creative work. She also attended other workshops and discovered that it pays off when networking with other people and knowing “who to talk to” to learn to do “what”. Having a PC at home also gives her a chance to explore and see what is happening on the Web. She wants to concentrate on using the new applications for reporting and doing more Web development. She does not see the Bursar’s office using these applications yet, because the office depends mostly on their POISE routines to function, but, that may change once those POISE routines can be manipulated using the Web. PCs are relatively new to the office and they are looking forward to getting one more. This means each staff member will have one, and only time will tell where this will lead.

We also interviewed Stacey Curdie, who is the Associate Registrar for the Registrar’s office\(^9\). This interview was especially fun because of her history. She attended PSC as a student, a student hourly worker, a staff member, then she went away to graduate school and came back when she was hired as our Associate Registrar. She was able to see, over time, the changes which took place at many different levels.

During the time we were purchasing our PC’s, she was away. She noticed people who have them now, mostly still use them as terminals. She finds that integrating new things needs time, which is hard to find.

\(^7\) The Bursar’s current homepage can be viewed at: http://eeyore.plymouth.edu/~tschofield/bursar.html
\(^8\) POISE routines which are run in the background of other processes. They are usually queued nightly.
\(^9\) Registrar’s homepage can be viewed at: http://www.plymouth.edu/psc/registrar/
“The Internet is popular, although word processing has experienced the biggest change in offices.” Stacey mentions, “People are just starting to realize the power of being able to work in more than one environment at the same time.”

She has lots of programs running at the same time, when doing her job, and finds the windowing environment a great plus. She says, “When there are many sessions opened to the same process, we now have the ability to do a lot of things much more efficiently than before.” Right now, the Registrar’s Office could use more PC’s at the window they use to service students.

Available to the students at the Registrar’s service window are two terminals used for inquiries and for printing out their curriculum reviews and transcripts. It does not look like these terminals will be turned into PCs right away, but in the future it could be a feasible option if the equipment could be secured. Stacey enlightens us in saying “It is good to get students into SILAS (Student Information Lookup Access System) and computing in general.” She also notes that “Nowadays students expect to be on PCs.” She also points out that allowing students to quickly and easily access information on their own frees up valuable staff time for other tasks.

“Menus are everywhere and to follow their octopus paths are difficult” Stacey mentions. She prefers simplification. When a process is “disconnected”, the individual maintaining the menus and batches needs to know, so that everything is up-to-date. We are still unsure on how much a client-server based environment may affect this issue. Since we are still using POISE and it does not look like POISE is going to go anywhere in the near future, we can still count on the decentralized VAX systems. One application which has proven most useful is ASQ, the Administrative Query Language used with POISE. Persons in charge of doing a lot of research and reports often prefer the simplest ways of getting the task done. Stacey states “Anything which saves time and is simple, is worth the effort of learning. We must get away from the mindset of ‘that is the way we have always done it’, and open our minds to explore new ways of doing things.”

When new hardware, software and ideas come along, Stacey likes to learn and use them. However, she says, “Deciding which technological advances to bring on board and support is not an easy call; but the people making these decisions have to recognize the time constraints we all work under. Learning new applications is not necessarily difficult, but it can be time consuming.”

In an interview with Amy Phillips10, who works for ITS as their Web Administrator, she mentions “Changes, such as what PSC is experiencing, are hard to coordinate. We need to have a more formal introduction to the personal computer. Several years ago ITS (then known as the Computer Center) offered POISE workshops which awarded a certificate to show completion. This may be a good idea to revisit.” She currently offers a workshop to the staff and faculty at PSC concerning maintaining Web pages. The workshop is casual and attendees can just show up. “It is sometimes difficult for some employees to get the release time to take workshops, so having a flexible schedule helps.” The workshop is conducted similar to a user’s group meeting or a class which meets certain times of the week.

“We need to understand who is responsible for what needs to get done, and create a cooperative effort for what we are required to do in our jobs.” She enjoys it when people come and ask for a workshop in different software applications. “We are experiencing a whole new learning curve and we are opening ourselves up to a new environment. There is a level of learning where ‘play’ is involved. This can lead to a small level of concern that there are hours in the day which end up less productive.”

10 Her homepage can be viewed at: http://eeyore.plymouth.edu/~aphillips/home.html
She also mentions that “Many different creativity levels are out there, and people are finding that they can design pages easily. We need to have fun in what we do. If ITS can provide quality and fun workshops, we can create a well rounded product.” Tools such as Netscape Composer and Microsoft Word makes learning HTML easier. The “point and click” interface is friendly to the users.

PSC’s webspace has a committee who works behind the scene to form an image of consistency. Amy spends time researching and exploring to see what is happening on other sites and collects ideas from what she finds appealing from each site. By combining the methods she likes the best, she is able to come up with some good ideas of her own, keeping in mind the keywords “user friendly” when constructing PSC’s Web pages.

**Opening up new horizons**

At Undergraduate Studies¹¹, we reflected on the differences in the way we did things before, to the way we are doing them now. We realize that we have the same time constraints as everyone else, and are working to find ways to merge new technology into our office. “Arms folded, he or she sits at their desk staring at the monitor which has just appeared to have gone bezerk” is a familiar scene to some of us. So is the phrase “The gremlins were at work again” when data has been mysteriously altered, or “It did it, all by itself and I can not make it stop!”, while text is spewing uncontrollably everywhere on the screen. Our office used to consist of terminals and DECmatests. Now we are using the power of the PC and experiencing new and faster ways of performing tasks which were much more complicated than when we were attempting to do them using VMS.

We have had to make a giant leap and take whatever time we can spare to learn the applications we need. After we became comfortable with each application, we realized that it was worth it, but, getting to that point did not always happen easily.

Most of our applications were either command scripts or were written in VAX Basic, which were all done on the VAXs. Now the transition to the Web has us learning JAVA and HTML. We are porting most of the old routines onto our PCs and constructing Web versions where applicable. This has made us look at the way we did things before and re-think new versions of the programs. JAVA, as far as we know right now, does not easily ‘talk’ to POISE, so we will have to come up with new solutions. Time is also spent learning the new lingo, and we realize that we need to be more flexible in designing the new versions of any programs. The programs people were used to using may come out looking entirely different, and the users will need time to get used to the changes.

Production in the office has been up and down. For several weeks, we spent more time setting everyone up with their PCs while training them to use them and found we were not getting our own work done. Our front desk is manned by student workers and, for a time, we had to remind some of them that they needed to do the work on the desk before “surfing the net”. Previously, they only had access to a terminal, so this was all a new experience. One student was a bit fearful of the PC, but once she realized that it is not much different than the terminal (when it is logged in as a terminal), her fear disappeared. She even has ventured into some of the other available applications!

We are in the process of setting up electronic calendars, and that has been going well. We realize the benefit of shared calendars and decided to take it one step at a time, instead of worrying

¹¹ Undergraduate Studies page can be viewed at: [http://www.plymouth.edu/psc/undergrad/](http://www.plymouth.edu/psc/undergrad/)
about the amount of time it will take to learn it all. We are taking the approach that we are trying not to overwhelm ourselves unnecessarily learning new applications, instead, we are concentrating more on the jobs at hand. This approach appears to be working because we are definitely moving forward technologically everyday.

In the classrooms and computer clusters, the students are enjoying viewing the world at their fingertips. Most of the students come into PSC with some knowledge of the PC, but there are still some who have not been exposed to its full potential. There are still some students who have "computer phobia", but because the Web is so diverse, it inspires incentive. Students realize the fun and usefulness in what they experience, and soon get over their phobias with a little instruction. Other applications, such as word-processors and spreadsheets, are available to the students and include online tutorials. One student was pleasantly surprised when she found that she could contact her relatives and friends via e-mail. Students end up not quite so homesick when they have an easy way to contact someone close. Another student was elated when he found that cutting and pasting from one document to another was so simple. Others liked the ability to look up information easily. Last year, PSC ran an online Black History Month trivia contest and most of the students found the answers just by using the Web. This tool, the Internet, increased participation and interest in the game, which also resulted in being able to share and learn Black History in a fun way.

Student areas, placed on PSC Web pages, helps to keep students informed on events and news on campus. Departments are starting to contribute pages in the effort to inform students (along with staff and faculty) about the programs offered by each department. The Business Department’s page includes course descriptions of all their courses. Meteorology has been maintaining a weather page, including animated satellite pictures. The Academic Calendar is also available for view for the year 1997-98. The Physical Plant did extensive pages on details (blueprints, maps and other demographics) of the campus and uses them regularly to help check out areas on campus.

Lamson Library has been maintaining a large system called LOLA (Lamson Online Lookup Access), which is used by the students, staff and faculty to check out books. The library has been operating mostly on an electronic basis because the college has been in the process of constructing a new library. Their Web page is quite informative and allows students to not only check out books from our local library, but other libraries as well. Lamson started out maintaining pages using Oz and the menus were mostly text-based. Now their pages are not only graphic, artistic and fun to explore but are vast in number. LOLA has been online for quite some time so it is not unusual for a student or faculty member to naturally use it to look up books. Use of LOLA has also been incorporated into the Introduction to the Academic Community (IAC) class. A skill test is administered, based mostly on LOLA and its use, and in order for a student to pass IAC, they must pass the library skill test.

When faculty found how easy it is to place a document on the Web, they realized that they can take ownership and have a lot of pride in their pages. Some faculty members have students do their pages, but others are willing to learn, and have quite a good time once they get the hang of it.

**Coming up in the near future**

Either UNIX or NT will be the direction for our future operating system, according to Steve Burrell. Most likely we will shift to NT because windows appears to be heading in the NT direction. Macintosh does not have the market share so there might be some changes in that direction - leaning more toward IBM compatibles. "Tigger" (which is the name of our new Alpha box/server) entered its test phase and ITS is trying to do it with as little disruption as
The true sign-off from the VAX’s to “Tigger” happened in January, during Winterim. Some of the VAX programs at Undergraduate Studies needed to be recompiled and other re-written, but we survived! Servers are being used to handle Netscape Mail and changes in the workload. ITS is making the effort to get everyone to use one mailer (Netscape). Gradually we will be adding additional servers to handle other components as needed. CUFS, which is used for financial jobs on campus, is also talking about going to a client-server platform. Now things are becoming much more complicated. What was once known as a computer based environment is now considered system based. Data clerks on campus need to be “knowledge workers” and are migrating from terminals to PCs. Some hardware replacement cycles can be every two years as it is unreasonable to ask faculty members and others across campus to replace their equipment or software every year. Realistically it is easier to change a little bit every two years and evaluate as we go.

**Conclusion**

It appears that individuals are approaching computing changes in different ways. There is a common problem in which we know we need to move forward, but also need the time to do so. Some of us are worried that these changes will interfere with our jobs. Others are worried that they may not be able to perform their jobs at all (or at least in the way they were used to doing it). ITS is sensitive to these issues and is taking measures to inform, assist and assure us. ITS made the jump to the ALPHA system and although we came across little glitches and problems here and there, we are still functioning and progressing forward. This jump forced some of us to re-evaluate processes which probably needed a change, but kept ending up on the back burner because as long as they still functioned, why fix them? Now that the old system is gone, those processes no longer work. The new programs and processes that are in their place are much better and efficient. ITS also gave PSC’s homepage a face-lift and asked other offices to use the same format. This presents a nice picture of PSC to the world. This also presents a task for those departments who have a lot of pages to change. It all depends on how we look at it.

**Acknowledgments**

Special thanks to all who contributed interviews and shared their thoughts with us. We appreciate their time, their efforts and especially the excellent service they all provide on campus.