It's a LAN Speed Record:  
From 0 to Complete Communications Network in 56 Days  
(aka: a model for effectively and affordably networking the small college)  

The Hartwick College Network Project Team  
Hartwick College  
Oneonta, NY  

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Director of Facilities Services  

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Director of Curricular Technology Services  

ABSTRACT  

The typical small to medium sized college finds that to access and effectively utilize networked resources (voice and video in addition to the WWW and Internet) a sophisticated and powerful network system to every location and every person on campus is a must -- at significant cost and with significant installation effort. The typical solution is to stretch the installation of the system out over a period of years. But what if the college doesn't want to (or can't) settle for the typical?  

Hartwick College didn't settle for typical. In a period of eight weeks, the College designed and installed a sophisticated voice, data, and video network with completely new infrastructure, despite many perceived insurmountable challenges including budget, services expectations, timeline, and terrain. Expedition survivors describe how an unusual strategy was used to complete this enormous undertaking in record-breaking time, on budget, and with more system services than first anticipated.  

It is also the story of a college which is committed to educating people who will thrive in and contribute to the world of the future; people who are prepared to meet the challenges of a rapidly changing, ever-more technological, and increasingly interdependent world. It is a college which did what it teaches: it had people of different backgrounds who shared a common goal work together in a collaborative team to create a new and positive piece of the world of the future.
Introduction
Hartwick College, A President, A Plan

Hartwick College is a selective residential liberal arts college in the idyllic countryside of upstate New York -- an area of mountains, trees, lakes, streams, and more cows than people. The College was founded as a result of the will of John Christopher Hartwick, a Lutheran minister. The modern Hartwick is a descendent of the Academy which was established near Cooperstown in 1797 and which then became the first Lutheran seminary in the U.S. About 1500 students attend Hartwick, which has a long-time commitment to “education for the future.” More than a decade ago it adopted Curriculum XXI (meaning “a curriculum for the 21st century”), as its curricular commitment to the long-standing Hartwick tradition of educating people to be contributing citizens for the world of their future.

Richard A. Detweiler arrived in July 1992 as Hartwick's president. Charged with enthusiasm, as well as a directive from Hartwick’s Board of Trustees to think and plan strategically for the College, President Detweiler quickly engaged the campus community in a planning activity. That's when training for our expedition began.

I arrived at Hartwick College in 1992 -- a new first time President at a college which, having become increasingly strong over the prior decade, was sensing that it needed to take bold action if it was to fulfill its growing sense of aspiration. From my years as a faculty member and administrator in higher education I brought to Hartwick some competencies which seemed important to the people of this college, including experience in assessing the implications of higher education trends, the ability to imagine a renewal of higher education, an understanding of institutional planning processes and systems, knowledge of the innovative use of information technology in higher education, and a track record of implementing wide-scale initiatives in near record time.

Rick Detweiler, President

In January 1993 a trustee planning retreat, which included faculty and student leaders was held. Its purpose was to clarify Hartwick's fundamental educational values, and then to assess how those values could be fulfilled better through programmatic initiatives. This retreat, and the focused and intense planning activities which followed it, resulted in a complete institutional five-year programmatic, facility, and financial plan for the College which has guided all decision making since.

The College could not wait to complete the plan before implementing its most compelling parts -- and information technology was the first and most compelling. Campus discussions led to two guiding principles for information technology on the campus: first, that information technology should be looked upon as a method of leveraging the human mind: it is a method of accessing, processing, and communicating information and second, information technology must be implemented pervasively. That is, if it is to be a normal part of everyday life, then it must be present whenever and wherever a person normally works or thinks.

In spring 1993, with about two months planning, Hartwick initiated its “countless computers” program which provides each first-year student with a notebook computer.
system, software, and printer. As students and faculty now had the tools to process information, they began to ask for access to information and networks for communication. The number of NYNEX phones in residence hall rooms and modem lines were increasing, as were requests to install cable TV services. Students quickly discovered the “do-it-yourself” method of connecting to video services which were provided to common lounges and the data network hubs in one recently remodeled residence hall. In spring 1995, Hartwick's Student Senate passed a resolution asking the College to provide a campus-wide network including telephone and voice mail, data, and video services.

At the same time faculty were uncovering the wealth of information available through networked resources (accessible from a few campus locations and computer labs) and incorporating Internet and WWW resources into their courses. Two teaching computer labs were not enough for the growing demand for “networked” spaces for teaching. Faculty also wanted to incorporate more video-based teaching materials into their courses, but without taking from class time. More and more faculty, students, and staff were using email. The Director of Facilities Services coped with daily reports of “noise on the wires” of the aging quad-wire cable plant. The Director of Data Communications managed the few network hubs around the campus by literally walking around to monitor them. The Chief Information & Planning Officer was grappling with increasing numbers of requests for basic answering machines for individual phone lines, growing demands for expensive Centrex lines, a not user-friendly telephone system, and a president who had been voice mail-less for three years.

The Vision (ISIT)

The implementation of this network was a clearly defined step in The Five Plus Plan. The trustees endorsed the concept originally in 1993, but as we came closer to needing official authorizing action from the Board greater concern was expressed -- we would be investing a lot of money up front and would be stuck with that large expense even if it turned out to not be worthwhile. Everyone (trustees, faculty, and senior administrators) had heard the stories of enormous cost overruns during typical implementations due to the need to redesign, solve unanticipated problems, or because things just didn’t work. We needed to have a compelling and rational vision for the network at Hartwick, one which would provide us with the infrastructure and tools we needed, and guide us so that we did not make unrecoverable mistakes. As we knew the collaboration of technology vendors and service providers would be key to our success, this vision statement had to excite them about the prospects of partnering with us.

Our vision document for our futuristic infrastructure was titled “Information Systems Infrastructure for the Third millennium” – ISIT for short. ISIT has two fundamental components: transport and management. We envision a pervasive implementation that enables people to have access to information technology tools and resources whenever and wherever they needed them to do their work, whether that was class assignments, research,
organizing events, contacting a friend in a foreign country, or paying the College’s bills. The transport component of this system ideally would be wired to resources and wireless to people. We also want incredibly seamless simplicity in management of this system (there would be transparent hardware and software protocol translation and automated database integration). ISIT was not to be confused with the ’96 Olympic mascot Izzy, though we did ask “is it?” a number of times throughout the process.

The RFI Process

With ISIT in hand we went shopping. President Detweiler always sends us shopping without our checkbook or credit cards. The purpose was to see if we could generate interest among technology providers in our concept, and because of that interest, form partnerships which would enable us to get on the road to ISIT cost effectively.

We chose to use a “Request for Information” rather than “Request for Proposal” process. We wanted the best thinking about how to meet our goals, we wanted the vendors and service providers to obsess about solutions, not pricing. From the RFIs we would select those which clearly understood what we wanted to do and offered well thought out solutions and a commitment to partner with us. We did not necessarily want the latest and greatest technology – we could not take that risk – we wanted proven technology that would meet our current, desired, future, and unanticipated needs.

We cast a wide net, sending our RFI to more than 60 individuals and corporations. These ranged from the vendor who would provide the network adapter cards to the integrated services provider who would respond with a comprehensive solution covering trenching and infrastructure to intelligent building management systems and long distance telecommunications services.
We learned that when you send what many would consider an incomplete set of specifications to so many people there are bound to be questions. Within two days after the RFIs left campus, our phones began to ring. Respondents had questions about this and that, they wanted more information, they wanted campus maps, they wanted to come and visit for a day.

At this point in the project timeline we had about 25 days. There were five of us who could do the campus tour/spend a half day with the vendor routine. We had 60 vendors calling (and in some cases, with their affiliated respondents who were doing one portion of their response, so this began to grow geometrically). We knew we couldn’t make the math work.

Since one of our objectives was to identify one or more partners, we decided to test vendors’ partnering potential from the outset. Rather than acquiesce to the vendor requests for individual meetings, campus tours, and specific information we chose to hold two “open” information sessions. Potential RFI respondents were invited to campus to an informational meeting at which they would receive maps and other detailed information about the project, tour the campus, and have the opportunity to ask the project team questions. We also hoped that this would spur some competition and creative thinking. While it was not intentional at the time, we chose to hold these sessions in the worship room of our chapel building. As we think back now the setting couldn’t have been more appropriate.

The RFI Process was in a word nuts! The shear volume of information along with the short turn around time made this process most challenging. I remember taking home a four foot high stack of proposals and reading them all weekend. I made notes as I read each proposal in order to attempt to make some sense of the whole mess. It was rather like trying to compare apples and grapefruits. I lived with this four foot stack of plastic coated folders and three ring binders for about a week and carried the retched things to countless meetings. After a while we got a little smarter and teamed up. “I’ll bring AT&T if you bring Northern Telecom.” My kids are the envy of the local high school to this day because they have the coolest three ring binders. I also fondly recall the vendor days on campus. Those surreal meetings in Shineman where 100 vendors came and no one had anything to say. It’s the only time I have ever seen so many speechless sales people.

Doug Carroll, Director of Telecommunications & Networking

The Realities
The Challenges
The Project Parameters

Beyond the conceptual issues of what this network should be, there were the limits of implementation posed by a long academic calendar (commencement is Memorial Day weekend), a very active summer schedule, a long winter and "mud" season (until June), the campus terrain (Hartwick is built into the side of a hill of shattered shale and bedrock), and an existing Centrex contract.

The parameters called for the installation of a totally new wiring infrastructure, both inside and outside. New electronic distribution systems for video and data were required in every building. There likely would be a conversion of the existing Centrex system to a more
functional PBX with voice mail (we, at the time, had no staff with extensive telecom experience). Network applications software would have to be identified, tested, and training programs developed. All of the “countless computers” (more than 700 student-owned PCs and 400 faculty and staff ones) would need to be reconfigured and have network cards installed.

President Detweiler also had his expectations: all ISIT objectives should be met, or at least we should have a clear path to achieve them; the entire system was to be completely installed and operational within eight weeks (his purpose was to better the record achieved at his previous institution which was 75 days but that installation did not include video at that time and the data network was async voice/data); on-going summer operations, which included an extensive camps program with hundreds of campers ranging in age from 8 to 88, could not be disrupted; and the project should be under budget.

However, we would not truly appreciate these parameters until after we met with President Detweiler on March 7, 1995, less than eight weeks from the close of the term. We had carefully reviewed the many RFI responses. We each came to the meeting with our favorite RFI responses, hopeful that the resulting network system would be a cornucopia of one or more of the proposed systems, and hopeful that we would contact the successful respondents after the meeting, giving them the proverbial “green light” to start work on campus. Project budgets based on the proposals totaled in the $4 to $6 million range, reasonable for an undertaking of this size. Enthusiasm was high.

Each project team member responded to President Detweiler’s questions about options for each component of the project and pricing. Options and pricing ranges were:

<table>
<thead>
<tr>
<th>System Component</th>
<th>Options</th>
<th>Cost estimates range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring plant</td>
<td>complete</td>
<td>$500K - $1.2 M</td>
</tr>
<tr>
<td>Video</td>
<td>own dish farm; option for local CATV service to supplement</td>
<td>119K - 260K</td>
</tr>
<tr>
<td>Data</td>
<td>10 B-T ethernet; various vendor equipment + management options</td>
<td>286K - 654K</td>
</tr>
<tr>
<td>Voice</td>
<td>Keep Centrex add VM PBX &amp; VM</td>
<td>120K - 1.3 M</td>
</tr>
<tr>
<td>Software</td>
<td>email, WWW, network access; Windows upgrade</td>
<td>$30/person</td>
</tr>
<tr>
<td>Staffing</td>
<td>2.5 - 3.5 people</td>
<td>$150 K+ annual</td>
</tr>
<tr>
<td>Other</td>
<td>network cards, systems, renovations</td>
<td>$350K</td>
</tr>
<tr>
<td>Total</td>
<td>Capital equivalent</td>
<td>$4.3 M</td>
</tr>
</tbody>
</table>
The $4.3 million was in the range of reasonable proposals; particularly since the entire campus wiring infrastructure required upgrade. This equated to about $1.2 million annually with services fees included, or $852 per student.

President Detweiler then advised the enthusiastic group that it was unlikely the Board would approve more than a $400 annual fee increase per student for the project. That, he figured, equated to a capital investment of approximately $2 million.

At that point, a look around the room showed project team members drained of any enthusiasm. We were depressed, hopeless, speechless.

Implementation & Management

The Real Fun

We immediately went back to the drawing board. The commitment to students, faculty, staff, and Board members had been made that we would have a network. We had until August 15, 1995 to find a solution, wire the campus, and train people.

The first budget decision we made was to proceed with the wiring plant. The least expensive option was to do-it-ourselves with the assistance of local professionals and contractors already on the campus. We designed a dual Petroduct conduit system to run throughout the campus, and took the opportunity to design solutions for other “problems” in the process (such as the corridors of our residence halls, which are scheduled for renovation over the next six years).

When we started to have a firm idea of what it was we wanted to do we had our first real budget meeting with the President. When I left that meeting I thought the whole project was dead. The president pushed us to define what was needed, not just buy what we wanted. We basically threw out all our work and went back to the drawing board. My office began to get over run by spreadsheet printouts and petroduct samples as we took on parts of the project ourselves. We ran so many combinations and permutations of the numbers the poor old TI-35 calculator I had used since college died.

-Doug Carroll
We took a significant risk by starting trenching for the project in late April. Signs warning campus visitors to "Please don't trip over our progress" sprouted up alongside the 2,500 tulips and daffodils which dot the campus grounds. A ceremonial groundbreaking featured President Detweiler, the Student Senate President, students, faculty, staff, a decorative backhoe, and a build a sub contest. We would not know until late June exactly what was to go in the trenches.

Our Project Management Style

The core Project Team began to take shape – little did we know we would spend our summer immersed in the project. Davis Conley, director of information systems, Doug Carroll, then director of data communications, Tim Catella, director of facilities services, John Willis, director of audio visuals, Robert Gann, chair and professor of computer and information sciences, Reid Golden, coordinator of educational technology initiatives, and Ellen Falduto, chief information and planning officer plunged into a project which had 10 basic steps:

1. GO! (motivate the troops)
2. Build the budget, project...project, budget...
3. Find partners willing to take risks and make the vision a reality
4. Go! (don’t ponder)
5. Ooops! (correct immediately)
6. Go again… (use creative abilities)
7. Design/build with partners & campus staff (keep staff excited along the way)
8. Plan cutover and introduction for the campus community
9. Cutover
10. Do punch list items
Still without a complete network design, the campus infrastructure was underway (we were in GO! mode). The team had only a few weeks to decide what would go in (and over) that infrastructure.

As the infrastructure was taking shape, so was the remainder of the project -- and the budget. We knew where we needed to get to achieve the budget target President Detweiler gave us.

<table>
<thead>
<tr>
<th></th>
<th>Where we were</th>
<th>Where we needed to get to</th>
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<td>CAPITAL</td>
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<td>Wiring Plant</td>
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<td>200,000</td>
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<td>Voice Systems</td>
<td>1,400,000</td>
<td>750,000</td>
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<tr>
<td>Software, etc.</td>
<td>300,000</td>
<td>125,000</td>
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<tr>
<td>Staffing</td>
<td></td>
<td></td>
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<tr>
<td>Other stuff</td>
<td>350,000</td>
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<td>Total</td>
<td>4,300,000</td>
<td>2,000,000</td>
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We continued to search for technology partners – as of late May we still did not know what was to go within this infrastructure. The search continued until June 23, 1995, just about six weeks before the system was to be on-line.

After talking with leading candidates for partnership, we put our cards on the table with them and said "If you can deliver what we want, within this budget, then you've got the job." Only one vendor met our challenge, Intecom, a network/communications systems provider based in Dallas, Texas. For voice and data, they brought to the table a proposal including a state-of-the-art voice system, a high-speed data network, and the capability to link voice/data/and video in a product they were about to release.
A partnership like this meant give and take for both the vendor and the College. We agreed to be a demo site for higher education institutions, to host workshops and conferences, to share applications we develop using the system.

We approached mid-July and still did not have a video solution. We had two models for video before us after the RFIs came in. The first was our local cable company who had had some experience wiring other campuses in the area. If we did the wiring we could get services for less (which is what we were doing). The alternative model, proposed by several vendors, would be to build a dish farm and provide the services ourselves. This model involved an obvious capital outlay, and monthly fees based on services chosen. The wiring would be part of the upfront costs.

Costs notwithstanding, there were arguments for and against each model. The cable model allowed us easy access to regional television outlets, not easy to attain in our hilly part of the world. It had the advantage of a variety of programming with no maintenance of a satellite farm. On the down side, it failed to meet our need for foreign language and multicultural programming. We chose to do a combination of both, partnering with the local cable provider, and installing a small dish farm of our own.

Meanwhile, by downsizing the size of the dishes and moving the farm to a somewhat risky location on the top of our physical education building, we were able to reduce the upfront costs considerably. With the cable company's change of heart as to how they would count subscribers on the campus, we were able to reduce equipment costs further.

Throughout July and early August the [sometimes frantic] work continued. We needed to work before, between, around, and during many activities in the campus buildings. These activities included the normal operation of the College in administrative buildings and a full series of summer camps in the residence halls. We were also challenged with a variety of building types and layouts; nothing was standard. A schedule was prepared for each building in advance of the summer work. This took into account the windows of opportunity available for each and those which would be in use during our work. We then created space for the wiring and the closets, considering future wants and needs for each building. This included a chaseway developed for speedy installation, security, aesthetic, and future renovations. By contracting with a firm already working on the campus, we were able to reduce our cost for their services as well as assure the quality of the work.
The Product
Cutover Weekend…

If we thought we were nuts up to the point of cutover weekend, we didn’t quite appreciate what was ahead. We literally lived on campus 24 hours for three days. We began reciting “pound-star-1-1-3” (which was the code for testing phone line locations) when the mood struck us.

A significant amount of planning went into cutover weekend itself outside the system work to be done. We needed a communications system on campus in case of emergency as we had about 500 students back on campus already. We needed to keep a phone line open (we arranged to cut the College main number over the following Monday after everything else was done). We needed ways to have communications for pre-season athletic events which were happening that weekend. We needed lots of hands to do all sorts of things, from detailing phone sets to testing lines to running errands. We needed “cheat sheets” for faculty and staff returning Monday to a totally new system on the desktops. We thought far enough in advance to run training sessions for office staff the week before cutover and two sessions during faculty workshops.

Simultaneously, Doug Carroll and Jim Walsh, his student assistant, and John Willis were out working singlehandedly on the data and video portions of the network. This was where the project would be “made” or “broken.”

When school opened, every person had a 10 megabit data connection (with design capability of moving to 100 megabit) and every building was connected by a 100 megabit channel (with design capacity in the gigabit range). Every person had a video connection with services ranging from CNN and MTV to live foreign language news broadcasts direct from about 30 countries around the world. Every person had a new telephone and voice mail system, with the ability to talk across the campus and around the world to one two, or even up to seven people involved in the same conversation. All of this, combined with the notebook computers everyone receives, is exciting not because of the technology, but because these are all tools for the educated and effective person. This “pretty incredible” system consisted of:

- Entirely new horizontal cable plant in all campus structures
  - One port per pillow
  - Four pair cat 3 (voice)
  - Four pair cat 5 (data)
  - RG-59 coax (video)

- Entirely new fiber optic campus backbone
  - Petroduct duct system
  - 18 multi-mode fiber strands
  - 6 single-mode strands
  - Star topology
• Intecom digital non blocking PBX
  • Fiber distributed
  • Digital service for staff
  • Analog service in residence halls
  • Incite multimedia networking capabilities
  • Remote location capabilities

• Octel voice mail system

• FDDI campus data network
  • 37 FDDI to Ethernet bridges
  • 97 24-port Ethernet hubs with SNMP
  • HP Openview network management software

• Campus video network
  • 32 channel system carrying a mix of programming, including Scola and four language channels, a movie channel, a student-programmed channel
  • 5 classroom channels, a steerable dish channel, and a DSS
  • Programming from six 3 meter C-band dishes, three satellite digital feeds, C-band, and fiber feeds from the Time-Warner franchise
  • AMX system which allows pre-programmed playback over 7 channels
  • All workstations/offices, classrooms and “pillows” cable ready, including a bi-directional video distribution backbone

• Ethernet cards and adapters for more than 1,500 machines on campus

• More PCs for administrative and faculty offices which were capable of running Windows 3.11

• E-Mail Connection, Netscape, and other connectivity software

• 1 _ additional staff to assist in supporting this

• UPS and Generator System (the anti-oops officer somehow wiggled the budget and convinced the President that we needed to make sure we got this: she kept saying "if this system goes down, it's a big oops!". He bought it. We think he did because when there are big oopses, people complain to him.)
  • 2 hour battery backup ups
  • 35 kV natural gas generator
  • Automatic bypass switch

• AT&T as communications services provider (previously disparate telephone services were aggregated under a private colleges consortium agreement with AT&T providing significant per minute savings on long distance, 1-800 lines, and calling cards; increased commissions on student resale; complete outsourced student resale operations and administrative billing).

We also met our budget targets, with some creative thinking about how to acquire some hardware and software, and negotiating new services agreements.
<table>
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<th>What we spent</th>
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<tr>
<td>Less: New revenues</td>
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<td></td>
</tr>
<tr>
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<td>481,500</td>
</tr>
<tr>
<td>Per student*</td>
<td>852</td>
<td>332</td>
</tr>
<tr>
<td>* net financial aid</td>
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</tbody>
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**What we learned**

**Would we do this again?**

We did not recognize it at the time, but President Detweiler gave us what others would consider an insurmountable challenge – yet at the same time gave us talents within our project team to pull this off. We had what he termed a “multi-disciplinary” management team which combined expertise in human behavior as well as information technology and facilities. The team was composed of a specialist in higher education planning and finance with training in psychology (Ellen Falduto, project manager), a sociologist (Reid Golden), a computer technologist with previous experience in super computing (Davis Conley), a computer scientist (Bob Gann), and specialists in networking, video systems, and infrastructure building (Doug Carroll, John Willis, and Tim Catella, respectively).
One other ingredient guaranteed our success: an incredibly committed college staff who voluntarily gave up their summer days, nights, and weekends to get everything done.

Our significant learnings

- meet, meet, meet
- one team with responsibility
- practicality over theory
- don’t obsess over planning & perfection
- trust others’ & your instincts
- creativity helps
- partnerships don’t happen overnight
- others will believe in your vision
- vendors aren’t always your enemies
- swivels can be expensive

Project Team Members Reflections:

Doug Carroll: For me the implementation phase of the project was the most stressful. If you dig up the entire campus you had better have something to show for it come September. As we took on management of the project the work load increased dramatically. I had primary day-to-day responsibility for the cable plant installation. Keeping track of all the details and trying to keep the crews on the time line was a monumental task. I recall one time when my assistant Jim told me that the fiber crew needed new swivels. I asked Jim to price the needed swivels and order them for delivery at the required time. Jim told me the price was “three 80” so I said order five thinking they were $3.80 only to find out that they were actually $380.00 each (I knew the anti-oops officer wouldn’t go for this). It was certainly a most splendid swivel indeed however I was beginning to wonder if perhaps I should have gone into the swivel business. The fiber crew had to share the swivel and guard it jealously all summer. As the summer came to an end 90 hour weeks were the norm and my dog barked at me when I came home in the wee hours of the morning. Dogs don’t understand about networks. I think my wife was about to side with the dog.

John Willis: After cutover, reflecting back, would we ever do this again? Well, at my age, I probably won’t have to, unless someone wants to make me an offer I can’t refuse…. I was in a somewhat anomalous position in the group because I was working under an 11 month contract, which meant that I had a different time-line in mind than the others. To them, the 15th of July was more like half-time. For me, the clock was running out. The middle of June came and
still we were up in the air about exactly how we were going to get our signals. We knew we had to have some sort of dish farm, and we knew we could afford only a patio garden on the Gym. There was still the issue of getting regional news from the networks, and we wanted to put FM on the system as well. At this point, the local cable company, who had been in the process of being swallowed by a bigger player, called me to say that they had a change of heart and would now bill us based on residential rooms, not individuals, and charge us only for the normal school year. In addition, they would supply engineering, all the splitters, amps and power supply for the _inch external cable plant. That left only the internal 2000 or so f-connectors for me to screw to the splitters and about 2 weeks in August to do them in.

Tim Catella: Looking back at the project is real easy. Recounting the way and why we did the project is very clear now; easy to understand. It was not so easy when we started. It was difficult trying to imagine taking on this size project in such a short time frame, let alone no budget and having to rebuild the way people approach this type of project.

Out with the old style, that was for sure. The most important thing that was needed, as I see it now, was making sure that everyone knew the importance of the project to the mission of the institution, and their importance to the project. If we had relied on the old way of working and planning, we would still now be designing, negotiating among ourselves and the outside world, and begging for more money from the Trustees. Having the new way placed firmly in our laps, and having myself been taught about it in the planning of our new residence hall project that was occurring simultaneously, well, it left little room for an argument. The theme in our department was “don’t fight city hall, just go with the idea and make it happen.”

We also committed to keeping our quality as high as possible, never lowering our standards because of money restraints; be more creative. As it turns out the 60 hour weeks and no real weekends got to be a part of the desire to see it completed. We began to see results, and this desire to succeed became contagious. We began to realize that we were accomplishing something pretty special, as a team, and it was a good thing. Another factor that affected us was the desire to prove the nay sayers wrong. As we were looked at funny and told “no way,” we really wanted to respond with success. Creativity, past experience, cooperation, and a vision made this happen. It sure is easier looking back at it.

Ellen Falduto: Two days before cutover -- which was the weekend before we opened for fall term -- the president called me into his conference room. I'll never forget what he said: “You've got to pull off this weekend with no problems. No cutover goes perfectly, but given our schedule we have a risk of going worse than typical. You've got to keep the team calm and collected -- it will be a long weekend. And folks around here Monday morning will have little or no patience if their phones don't work.” He also told me that if I needed to scream somewhere, to come to his office (but he wouldn’t be there). I had been through a similar project about eight years earlier, but on the periphery (as the financial oops person).

Such a project takes its toll. That became evident cutover weekend and during the couple of weekends which followed where we did our punch list work. Doug, Tim, and I were on campus cutover weekend for all but about 10 hours of it.
Adrenaline, and coffee and Tab kept us going. Tim and I and two of his staff were testing phone ports at 4:00 a.m. Sunday morning, after a full day of work -- it was literally rote at that point. We made it through Sunday -- dragging by about 2 in the afternoon. We were fortunate to have campus staff who volunteered to help - - colleagues from Academic Affairs, the Registrar, Human Resources, the Alumni Office, and the President and his family worked one or more shifts assisting with the cutover.

Doug and his student assistant focused on the data network. We saw John occasionally - most of the time he was in one of the buildings on campus completing connects on the video cable plant. The division of labor exemplified the do-it-ourselves aspect of the project.

We had about 10% "troubles" following cutover. Not bad given our timeline and the fact that many were student lines and where students had changed housing assignments since we built the database. Where we had more trouble was with reconfiguring faculty, staff and student PCs and getting people up and running on the new data network as there was new software to learn and machines that didn't quite run the same way. It took us nearly a year to get through all of the configurations and one-on-one help sessions with faculty and staff. For students, we took a month and a half early in the fall and took our help desk “on-the-road”, working on their network connections, phone problems, and PC problems by bringing teams to their residence halls in the evenings.

The Future

Members of our campus community are using the new tools we provided through this project. We are now extending these tools: networked classrooms with one network connect per student so faculty members can make a typical classroom an instant computer lab with all students now having a notebook PC and network software. Our “Help Desk on the Road” project was such a success that we have been asked to continue the program as a regular function of our User Support department. We have upgraded our central systems (both academic and administrative) as demand for services and the economics of upgrading quickly led us to realize this was the way to go. With our initiatives and infrastructure, educational program planning now includes a significant emphasis on use of information technology and resources in the curriculum.

Since the project was completed we have answered many inquiries from colleagues at other institutions and hosted about a half dozen visiting teams from places as far away as Illinois. They usually leave amazed. We try to assure them that they can do this too.

Thinking of taking on such a project at your institution? We would agree that our approach was a viable one – for us. However, we are a "GO!"-type institution, we had the expertise on our campus, and we were very fortunate to have the partners we did in technology providers, service providers, and contractors. We also had the good will and support of the campus community who wanted improved services and access. You give your life to this type of a
By the way, we're into our third major record timeline project (the first was the residence hall construction which was mentioned earlier – that was 9 months, through an upstate New York winter, two new residence halls). In about 10 months we expect to complete a conversion to a new administrative information system. We've already been told “you're nuts...you're never going to make it...no one pulls off a conversion in less than 18 months.” We're in the learning curve of it now – everyone is learning the new system and software, including the IT team supporting the project. People naturally dread “conversion” because many have had past, bad experiences. We look at the project positively – “look what we’ll be able to do!,” “here’s an opportunity to learn new things,” “here’s a chance to work collaboratively with other departments.” We tell people it will truly be a “conversion” experience, and we have held a few meetings in the worship room of the Chapel.

Acknowledgments & Thanks
For more info…

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