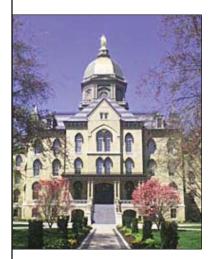# Success Story:

University of Notre Dame: Meeting the Goals of Higher Education in a Continuously IT Driven World

University of Notre Dame faces the challenge of a continually growing and changing campus.

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Challenge:

In 1842, Rev. Edward Sorin, a priest of the Congregation of Holy Cross, founded the University of Notre Dame, an independent Catholic university located in South Bend, Ind. Originally consisting of several hundred acres and three small buildings, the campus has grown to span 1,250 acres including 137 buildings, many dating back from the late 1800s to the 1930s. With over 14,000 students, faculty and staff to support, the University's Office of Information Technologies (OIT) has worked to install and maintain a network infrastructure capable of providing the technology needed by the University, while still sustaining the historic aesthetics.

Notre Dame constantly faces the tasks and challenges associated with maintaining a current network infrastructure and planning for future changes. To meet the goals of higher education along with a continuously IT driven world, Notre Dame is wiring and installing IT infrastructure equipment in many newly constructed buildings while also re-wiring existing academic buildings and residence halls. This re-wiring process will take approximately three years as the campus has a great deal of antiquated twisted pair directed to old computer closets. New computer closets will be created to rack-mount equipment and all phone systems will be updated to VoIP. Additionally, the University has expanded its wireless capabilities from one percent to more than 60 percent in less than two years.

Solution:

Notre Dame's OIT has various divisions to support a successful network infrastructure. Key to this support and effective network uptime is the IT infrastructure equipment which is managed by Eric Mauch, a Network Infrastructure Design Engineer at the University. Mauch, who functions out of the Integrated Communications Services Department, a division of the OIT, works diligently to achieve the organizations goals.

The University's network infrastructure originates out of a centrally based backbone building where all fiber optics and telecommunication multipair terminate. This building consists of two sides. One side houses six racks of communications equipment, fiber optic backbones and patching equipment. The other side is new and was created to house the equipment supporting campus-wide IT upgrades and expansions. This side consists of three cabinets and nine racks, with 20 racks currently proposed for installation. Additional fiber optic backbones and electronics along with new wireless applications and phone equipment are also housed in this area.

The network infrastructure is connected through an underground tunnel system. "Select buildings throughout campus serve as our fiber distribution hubs which connect via the underground tunnel system. These fiber distribution hubs homerun through the tunnel system to our centrally based backbone building, and then branch out to remote campus buildings. This tunnel system typically goes within 50-60 feet of each building's foundation. Fibers extend from the tunnel system into the basement area of each building," explained Mauch.
"We have several CPI Racks and Cabinets on campus. CPI products are installed in our new state-of-the-art Guglielmino Athletics Complex and

recently completed medical center, Ernestine Raclin and O.C. Carmichael Jr. Hall. Raclin-Carmichael Hall has five closets with all CPI products installed, including Cable Management Products, Ladder Racks and Racks. The largest building on campus, Jordan Hall of Science was recently completed and contains 10 closets, with over 30 CPI Racks and more than 5,500 data connections. In Jordan Hall, the OIT trusts over one million dollars worth of critical IT equipment to the support of CPI products. Jordan Hall employs CPI Cable Management Products and Ladder Racks to keep closets and equipment rooms organized and efficient as well as CPI Grounding Products to safeguard the electronic equipment," stated Mauch.

To meet the goals of higher education in a continuously IT driven world, Notre Dame is re-wiring 30 academic buildings and has begun re-wiring more than 27 residence halls. "This will probably be a three year process," stated Mauch, "we have a lot of antiquated twisted pair going back to closets that are no longer of proper spec. Therefore new closets are being created and we are replacing all Cat 3 and Cat 4 cables with high level Cat 6 cables. All equipment in theses closet spaces will be rack-mounted, so CPI will become a major player in this rollout project."

"We are also changing our phone system to be VoIP," said Mauch, "in the long run a VoIP system will save the University money and will replace the aging telecom switch currently providing service." A VoIP system will allow students, faculty and staff at Notre Dame to make telephone calls using the campus computer network over a data network like the Internet.

In less than two years the campus has gone from one percent to over 60 percent wireless coverage. "Many of the campus buildings date back from the late 1800s to the 1930s, therefore it has been tricky to keep everything concealed, as the aesthetics at Notre Dame are taken in high regards," said Mauch.

"When changing out your network it is reassuring to know that you have high quality products in place. The quality found in CPI products is number one, from the support structure to the weight tolerance, down to the precisely drilled thread holes. Even a small problem such as thread holes can create unnecessary downtime," stated Mauch.

Notre Dame, which is rated among the nation's top 20 universities, uses CPI Products to organize, store and secure their critical IT equipment. "At the University of Notre Dame we demand the best quality products, and therefore choose CPI Products to keep our critical IT equipment safe and secure," explained Mauch, "our distribution partner has been very responsive and the quality of product has been outstanding, which speaks volumes for CPI."

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- explained Mauch

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