

## Information Technology Services: Brief Facts & Trends, for UNCG BOT, 2/19/14

### Significant challenges:

- demand for new services, as well as expansion or enhancement of existing services, with reduced funding and staffing
- explosion in demand for online technology services such as video (online learning and edutainment)
- with proliferation of mobile devices, demand for location and device independence for consumption of technology services – anywhere, anytime, any device

### I. **Banner ERP/UNC Genie**

- Banner is used to process transactions and capture administrative information for enterprise activities such as registration, financial aid processing, purchasing, cashiering and payment transactions, employee management, and donor activity.
- Using UNC Genie, self-service functions permit faculty to enter grades and access class rosters; the Registrar to provide registration assistance and transcripts; and employees to access monthly paystubs and annual W-2's.

### II. **Service Desk & Service Operations Center (SOC)**

- Service Desk = “6TECH,” UNCG’s Help Desk
- SOC 24x7 monitoring of all campus technology services

### III. **Wired network**

#### 2006 to 2013:

- Increased performance tenfold from 10/100 Mbps to 1 Gigabit
- Increased availability to levels regularly above ITS goal of 99.90% uptime

### IV. **Wireless network**

Average wireless user counts (8 am – 6 pm):

- September 2008            1,310
- May 2013                    7,100 (442% growth)

#### 2005 to 2013:

- expanded wireless coverage by 220% to all of campus, including residence halls and outdoor common areas (from 565 to 1,800 access points)
- with redesign, saved more than \$1M in hardware and operating expenses over a four-year refresh cycle
- increased academic and recreational use of video (e.g., YouTube, Netflix & Skype) helps drive steeply growing bandwidth demand

- pervasive wireless facilitates in-class use of technology, such as mobile devices used as “clickers” for classroom response system

#### Plans for 2014+:

- 10x increase in wireless network speeds
- 3 – 4x density of wireless coverage on campus

#### V. Server virtualization

From 2007, the number of individual server-based services housed in ITS data centers has increased by 250% from 200 to 700. 500 of these services are now virtualized and provided on 24 physical machines.

- reduced hardware costs by an average of 50% per server
- reduced system failover and recovery time from days to minutes
- extended the useful life of campus data centers by an estimated 10 years
- 60% reduction in annual Banner operating costs from \$441,881 to \$178,314

Servers previously in distributed machine rooms (Library, DCL, Geography, Chemistry) moved to ITS data centers, for improved security and cost-effectiveness.

#### VI. Communications

- UNCG was the first UNC campus to outsource both faculty/staff and student email/calendar.
- In 2009, ITS deployed a voice over IP (VoIP) system for the campus.

#### VII. “Blackboard Learn” Learning Management System

- An LMS is software used primarily to create, deliver, and administer courses and course material online. From Spring 2011 through mid-semester Fall 2012, **~10,000** courses were actively used. Discussion boards had over **900,000** individual posts in that period.
- During the 2012-2013 academic year, UNCG Blackboard Mobile Learn had over **1 million** logins by over **20,000** unique users/devices.

#### VIII. Research computing

- UNCG-licensed software includes a variety of statistical, computational, qualitative, and other research & design software (e.g., SAS, SPSS, Matlab, ArcGIS, AutoCAD).
- Partnership with NC State for access to high performance computing cluster (“Henry 2”); for one UNCG graduate student’s dissertation research, a large computation that ran for **7+** days & then failed due to lack of memory on a standard PC, completed in **~3** minutes on Henry 2.

#### IX. Collaborative programs with other UNC campuses

- UNCG Blackboard Learn hosting provided for NCA&T, UNCSA, and FSU
- Disaster Recovery: In 2006, commercial solutions that met UNCG’s objectives would have cost \$1M annually. In 2007, ITS designed and implemented a full disaster recovery hot-site for core Banner in partnership with Appalachian State that exceeded UNCG’s requirements for \$130K in initial equipment investment, and \$10K annually.