I IM; Therefore I AM

The Changing Face of Campus Communications

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Shedding Light on New Ideas…

Rapid technological advances and convergence coupled with societal changes have led to a different communications dynamic on campus –

A dynamic that most campuses are ill-equipped to keep up with, provide service for, or leverage to their advantage.

Answer this…

If most campus telecomm/video/data operations were **<u>not</u>** a monopoly on campus…

How long do you think they would last in a free-market economy where the consumers have freedom of choice?

Today's Technological Catalysts

- Wireless communications has become omnipresent
- Technological convergence is finally becoming a reality
- Global super-networks means China is no further away than you neighbor
- Fiber pushing deeper into the residential neighborhoods
- Deregulation is bringing new and different players onto the scene
- Communications sector is consolidating and non-traditional competitors are emerging

Today's Societal Catalysts

- Generation Y and iGeneration are now moving through high school/post-secondary schools and their wallets are fat
- Supper-connected teens are forming vibrant "global" social networks
- Societal communication patterns are shifting to shorter communiqués and demand instant gratification/feedback
- Knowledge workers need/demand access to information without regard to time, place, or manner

Home is where the…

We clearly see that what people use @home is driving more and more of today's communication needs, especially in campus and residential dorm services.

3G cellular

2G Broadband services

Streaming video/audio

VoIP services

IM/text messaging

Technological, Market, and Societal Drivers…

OMNIPRESENT HIGH-SPEED WIRELESS

What We Know – Omnipresent Wireless

- Cellular Ownership in 2005
  - Ireland – 100%
  - Asia/Pacific – 90.2% ownership
  - Russia – 89.3%
  - European Union – 78%
    - Czech Republic, Estonia, Lithuania, and Slovenia @ 100%
  - US – 70%
  - Mexico – 46%

- One billion wireless high-speed (3G) data users worldwide by 2012

US mobile subscriber activity (2005)

Activity	% of US subscribers	Reach (000)	% Change
Sent or received text message	**33.32**	**60,983**	**4.6**
Retrieved news and information via browser	10.15	18,572	0.1
Purchased ring tone	9.66	17,675	7.3
Used photo messaging	**9.29**	**17,005**	**9.4**
Used personal e-mail	**7.35**	**13,454**	**9.4**
Used mobile instant messenger	**6.32**	**11,568**	**10.5**
Used work e-mail	**4.31**	**7,886**	**12.8**
Purchased wallpaper or screensaver	3.92	7,176	8.5
Downloaded mobile game	3.31	6,052	6.5

Source: M:Metrics, Survey of US mobile subscribers, quarter ending January 31st 2005, n=35,381.
Data for photo messaging, ringtones and graphics downloads for two months ending January 31st 2005, n=23,209.

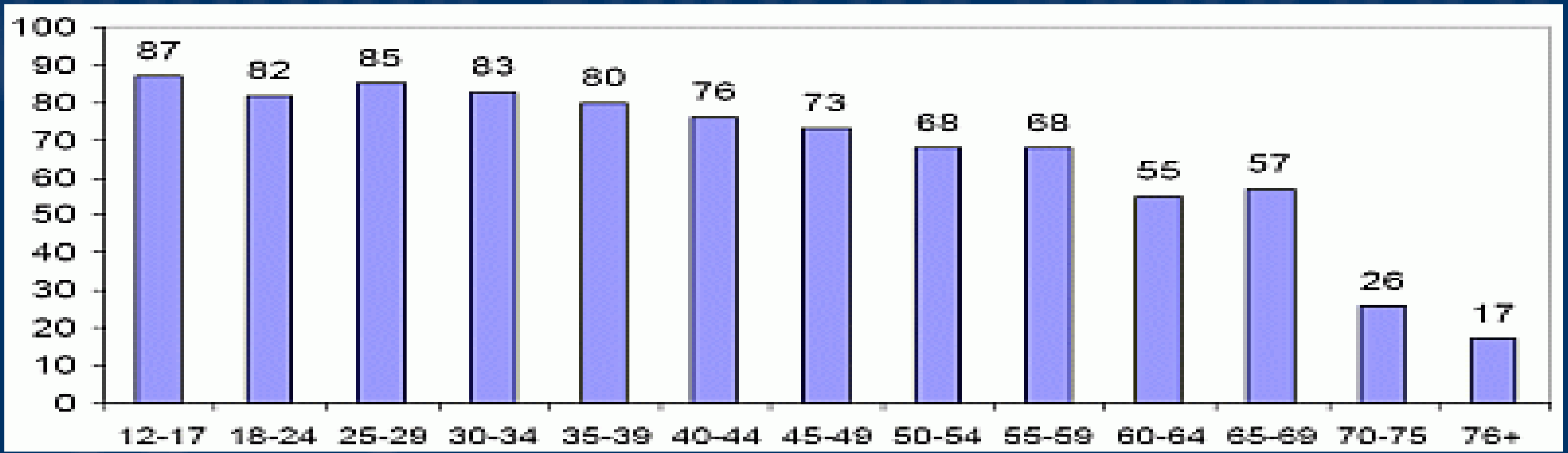
But how do we stack up against…

Activity	% of US subscribers	% of UK subscribers	% of German subscribers
Sent or received text message	**33.3**	**83.6**	**79.7**
Retrieved news and information via browser	**10.2**	**10.7**	**4.1**
Purchased ring tone	9.66	6.5	7.5
Used photo messaging	**9.29**	**26.6**	**19.9**
Used personal e-mail	**7.35**	**5.9**	**6.4**
Used mobile instant messenger	**6.32**	**3.2**	**3.1**
Used work e-mail	4.31	2.7	2.9
Purchased wallpaper or screensaver	3.92	2.5	3.2
Downloaded mobile game	3.31	4.0	2.7

Source: M:Metrics, Survey of UK and German mobile subscribers, quarter ending February 28, 2006

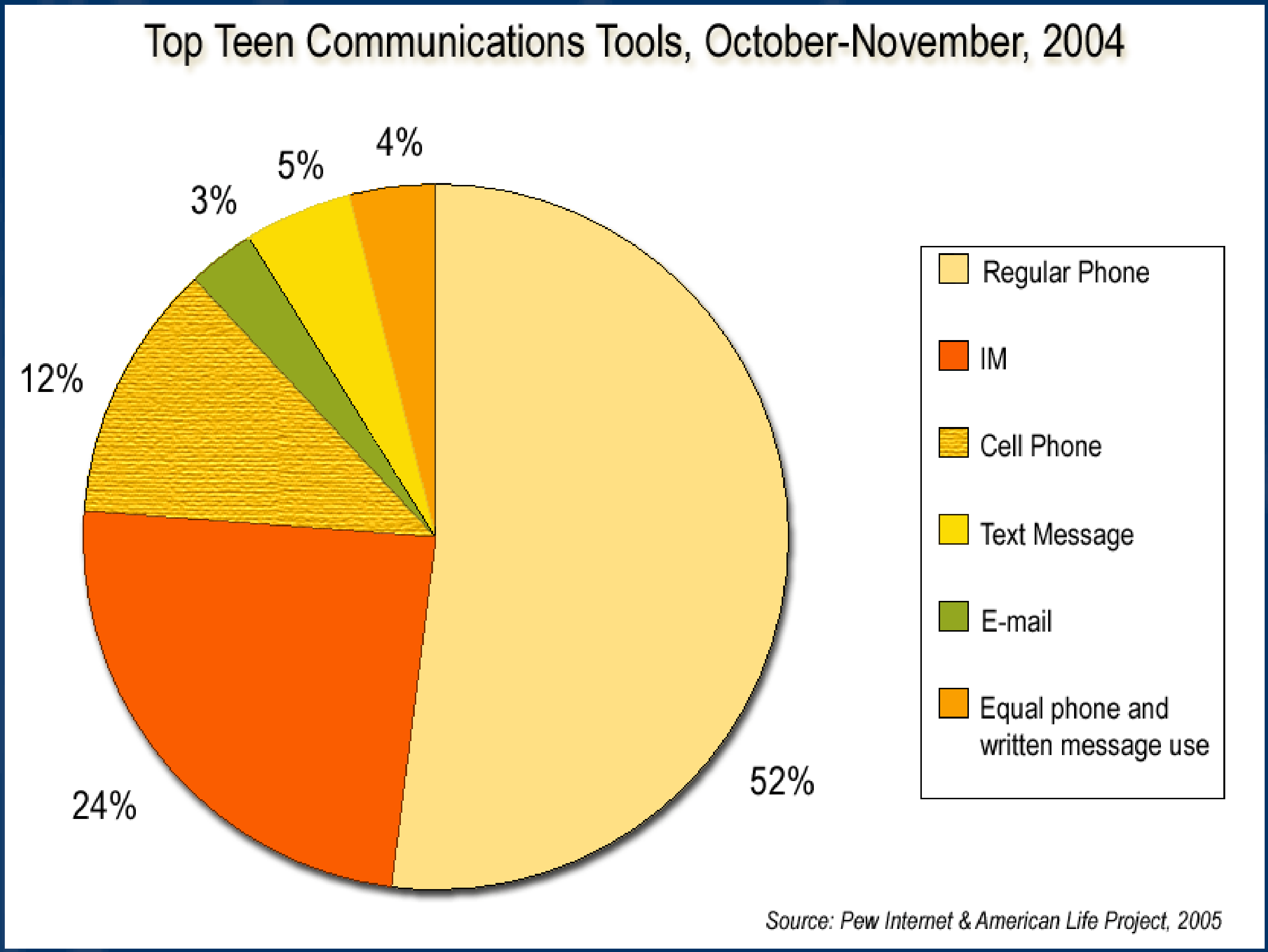
US Internet users by age group (2005)

- Pre-college and college age kids show the highest percent usage.
- E-mail is almost universally used by 90% of ages 12-24 years – however, it is not their preferred communications medium as the next chart shows



Pew Internet & American Life Project: 2005

Teen Communication Modalities (US 2004)



Wireless use by college students (2005)

"It's a protest about her college-age son's phone bill..."

- **90% of students** (5.3 million) have a cell phone
  - Nearly half of the remaining 10% plan on getting cell phone in the next 12 months
  - 75% of students use cell phone as primary LD device
  - Monthly cell spending has grown to more than 13X that of monthly LD spending

Spending by College Students

	Spring 2005	Spring 2004	Spring 2003	Spring 2002	Spring 2001	% Change 2004-2005
Cell	**$54.78**	$43.60	$38.24	$30.29	$20.88	26%
LD	**$4.13**	$5.85	$5.17	$10.75	$21.32	-29%

Leading us to only one conclusion…

Oh look Julia -- he just texted me his first word!

Wireless will rule in the future!

TECHNOLOGICAL DRIVERS

What We Know – Technological Convergence

- Sector consolidation – eat or be eaten
  - Cingular/AT&T Wireless vs. Verizon
  - SBC & AT&T bell merger
  - New AT&T and BellSouth bell merger
  - Comcast, Cox, & Time Warner all potential merger candidates
- Non-traditional competitors
  - Comcast, Vonage & Skype poaching on traditional Voice
  - New AT&T, Verizon betting farm on FTTH and IPTV
- Fierce competition from both within sector and from non-traditional competitors will lead to more services at equal or lower prices

What We Know – Technological Drivers

- Wireless revenue from US businesses will grow to $52B in 2010 representing an increasingly important business tool
  - US businesses see wireless as communications tool that should be pushed deeper in the organization
  - Many US businesses are opting for cell-only business models

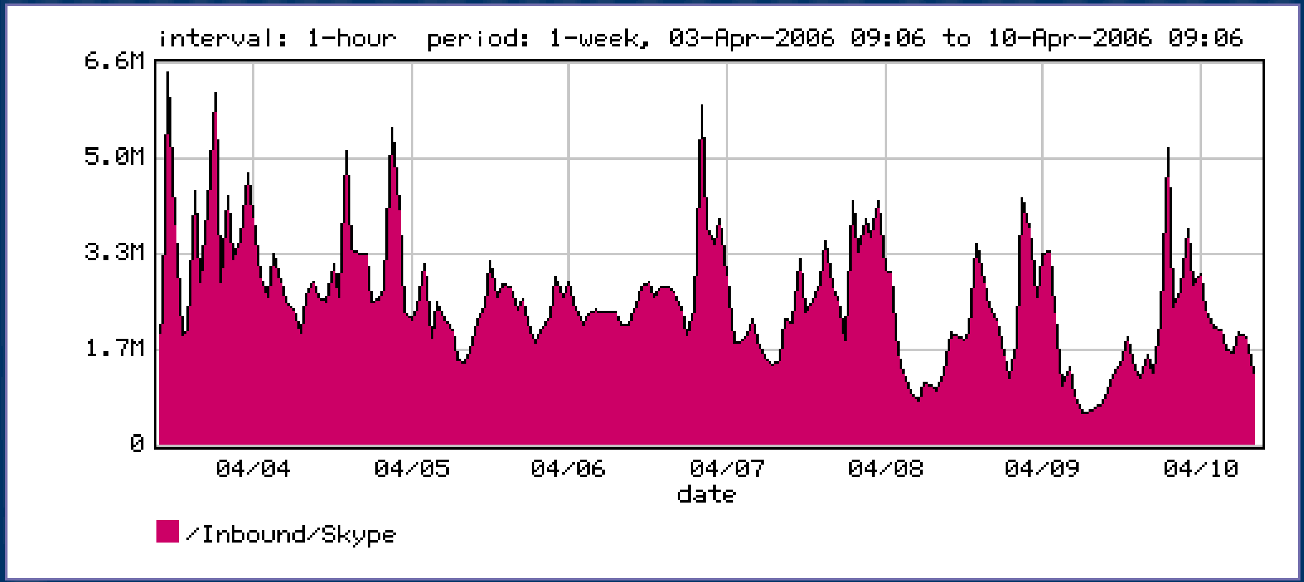
- Wireless revenue from US consumer will begin to stagnate forcing carriers to emphasis non-voice media-rich services
  - 20% of US wireless revenue will come from data services by 2010
  - 30+ million US wireless subscribers will be consuming commercial video/TV content and services over their wireless devices by 2009
  - 50 million 3G US subscribers in 2010

What We Know – Technological Drivers

- The US Wireline Service Market is Expected to Suffer a Decline of 8.5% over a Five Year Period
  - Pressure from both wireless and VoIP providers
  - VoIP To Hit 12.1 Million US Households By 2009
    - New AT&T dropping requirement for DSL to provide VoIP
- Almost 20% of current wireless users plan to “cut the cord” in the next 12 months
  - 9% of US wireless subscribers currently use only wireless
  - By 2010, the number will grow to 37%
  - 37% wireless subscribers indicated that cellular use had decreased their local phone usage
  - 44% indicated cellular use had decreased their traditional long distance bill

What We Know – Technological Drivers

- When it comes to US College Students
  - 1% of students use VoIP in 2005
  - 22% are very or somewhat interested in using it
- At Notre Dame, we're seeing an average of 2-4 Mb/sec of Skype traffic in the ResNet cloud



Technological, Market, and Societal Drivers...

SOCIETAL DRIVERS

What We Know – Societal Changes

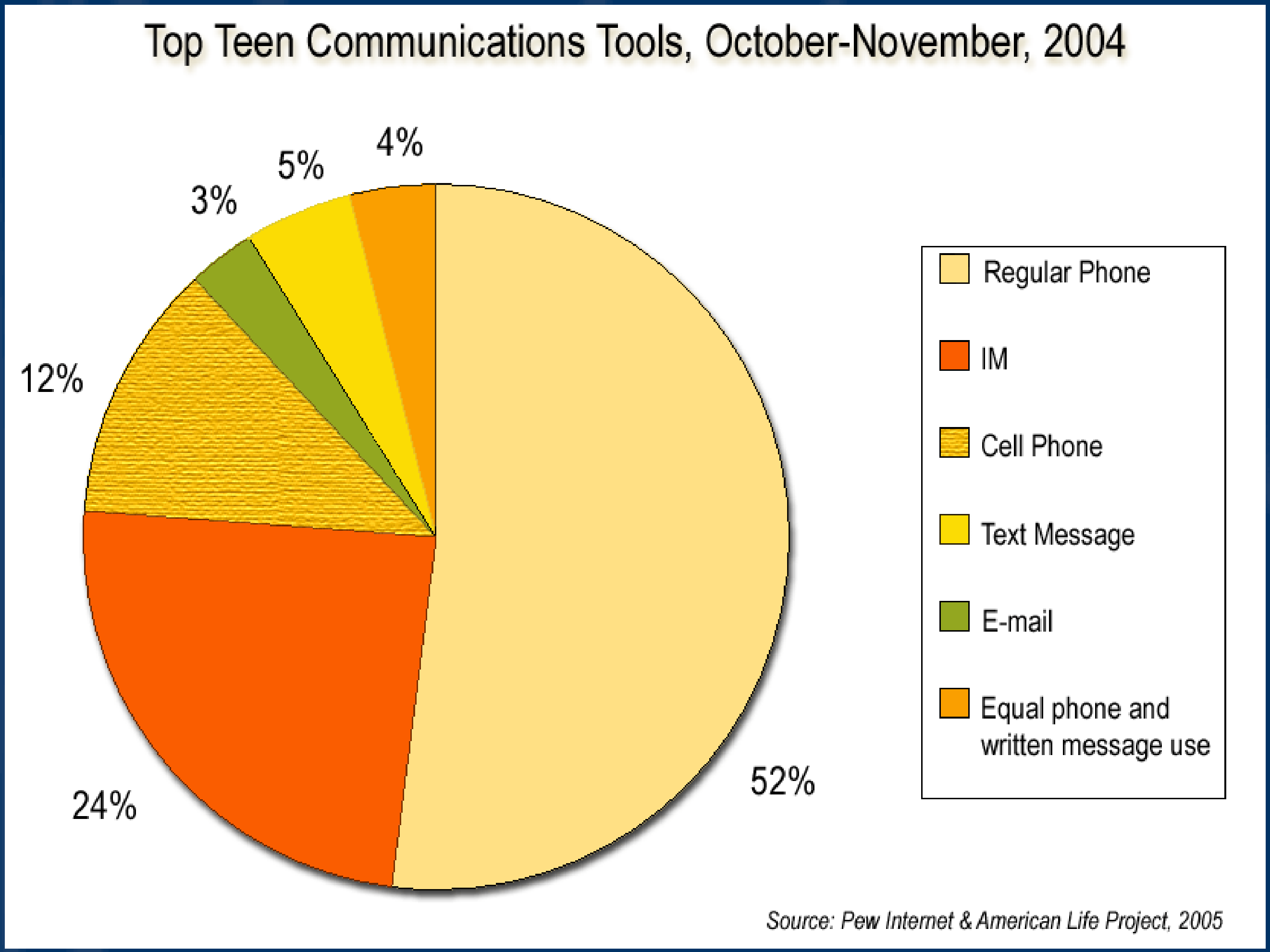
- Generation X and iGeneration are taking root.
  - They are the next generation of global teens, and they are unlike any generation that came before them.
- They are the “supper connected”
  - Being wired no longer limited to a global techno-elite (wealthy kids in the developed world)
  - They have an active lifestyle that uses multiple means of connectivity at any given time
  - Today technology is a hallmark of mainstream cool.
- Vibrant “global” social networks play a large role with this group

GenWorld: The New Generation of Global Youth
Engergy BBDO GenWorld Study

Generation X and iGeneration (worldwide)

- 81% of teens worldwide between 12 and 17 use the Internet to e-mail friends or relatives
- 70% use it for instant messaging / text messages
- Among older teens (18 to 19 years), these statistics jump to 91 percent for e-mail and 83 percent for instant messaging
- 56% of teens aged 18 to 19 prefer the Internet to the telephone
- 25% of the parents surveyed indicated that their teens currently use cell phones with instant messaging and/or e-mail capability
    - When asked which wireless devices their teen would most like to own, 51% responded a cell phone with messaging capability

Teen Communication Modalities (US 2004)



Generation X and iGeneration

- Facebook.com
  - Founded in 2004, grown to 6 million subscribers and 2100 post-secondary institutions
  - 15K accounts added daily
  - 4 million "Facebookies" log in every day
  - Estimated book value -- $100M
- MySpace.com
  - Founded in January 2004, grown to 47.3 million subscribers
  - 18th-most-visited site in 11/05
  - 4th largest page views ahead of eBay and Google
  - Sold in July 05 for $580 million

These are just a few…

…but what does all this mean to higher education and those of us who provide services?

Changing Communications in Higher Ed

- We're loosing the ability to effectively communicate to our constituent groups
  - Some would say we've already lost our ability to communicate to students
- Most of our telecomm cost models are out-dated and uncompetitive
- Most of our data infrastructure is not ready for converged services
- We must recognize and embrace wireless as the future primary communications medium of choice

Constituent Communication Challenges

- Colleges continue to be challenged to effectively communicate with various stakeholders.
  - Development figured it out first
  - Alumni Services were quick behind
  - Teachers/profs were brought along by the students
  - Administrative and Student services are still largely clueless

So lets focus on Student Communications…

- Whether you're residential or commuter school, student communications has become increasingly difficult.
  - Old days – US Postal to @home address
  - Today – email or voicemail, directed portal communiqués
  - Tomorrow?

- But are we getting through to them?

How (un)competitive are we?

School	Campus rate inc Voicemail & no LD	
IUB	$	23.00
Grinnell	$	29.94
Concordia	$	35.99
Emory	$	45.46
Purdue	$	27.10
Umich	$	17.25
ND	$	24.11
UVA	$	35.75
UTK	$	27.77

Source: Google Search “campus phone rates site:.edu”

What about this VoIP thingy???

- IP-based telephony will begin to quickly replace traditional analog landlines in the business sector then eventually @home residence
(where wireless doesn't do it first)

- VoIP scales – the more you have, the cheaper it becomes to deliver

- Most campus LANs are not hardened for five-9 reliability or VoIP security

So what’s a person to do?

Notre Dame has pretty much bet the farm that advanced communication services will be required to run the modern university and that doing so was not a core competency of the school.

The Notre Dame Story…

- Notre Dame had been a 14,000 line Centrex shop (Ameritech/SBC) shop since early 90's
- Same basic switch technology, limited feature set, limited voicemail, unable to support unified messaging
- With 2005 contract renewal, ND asked for "life after Centrex" roadmap
- SBC presented a hosted IP communications platform that delivered advanced services for same rate as Centrex
  - Required no upfront CapX investment by ND
  - Year-to-year contract, no expense to exit
  - Allowed ND to "test" its network infrastructure
  - SBC was able to present a unified communications strategy with Cingular Wireless

The Notre Dame Story…

- Notre Dame included cost of land-line service in Student Room and Board rate
  - Students had to pick LD plan of their choice
- Spring 05 student survey showed top 4 of 5 most desired campus services were IT Centric
  - WiFi in dorms
  - Local network printing
  - CATV
  - Better cellular coverage
- Centrex station calling statistics show marked decline in land-line usage by students
  - Spring 05 survey showed less than 50% students used dorm phone more than once/week
  - 24% used less than once/month
  - Voicemail statistics showed most voicemail not read in 7 days
  - Spring survey showed 94% student cellular ownership

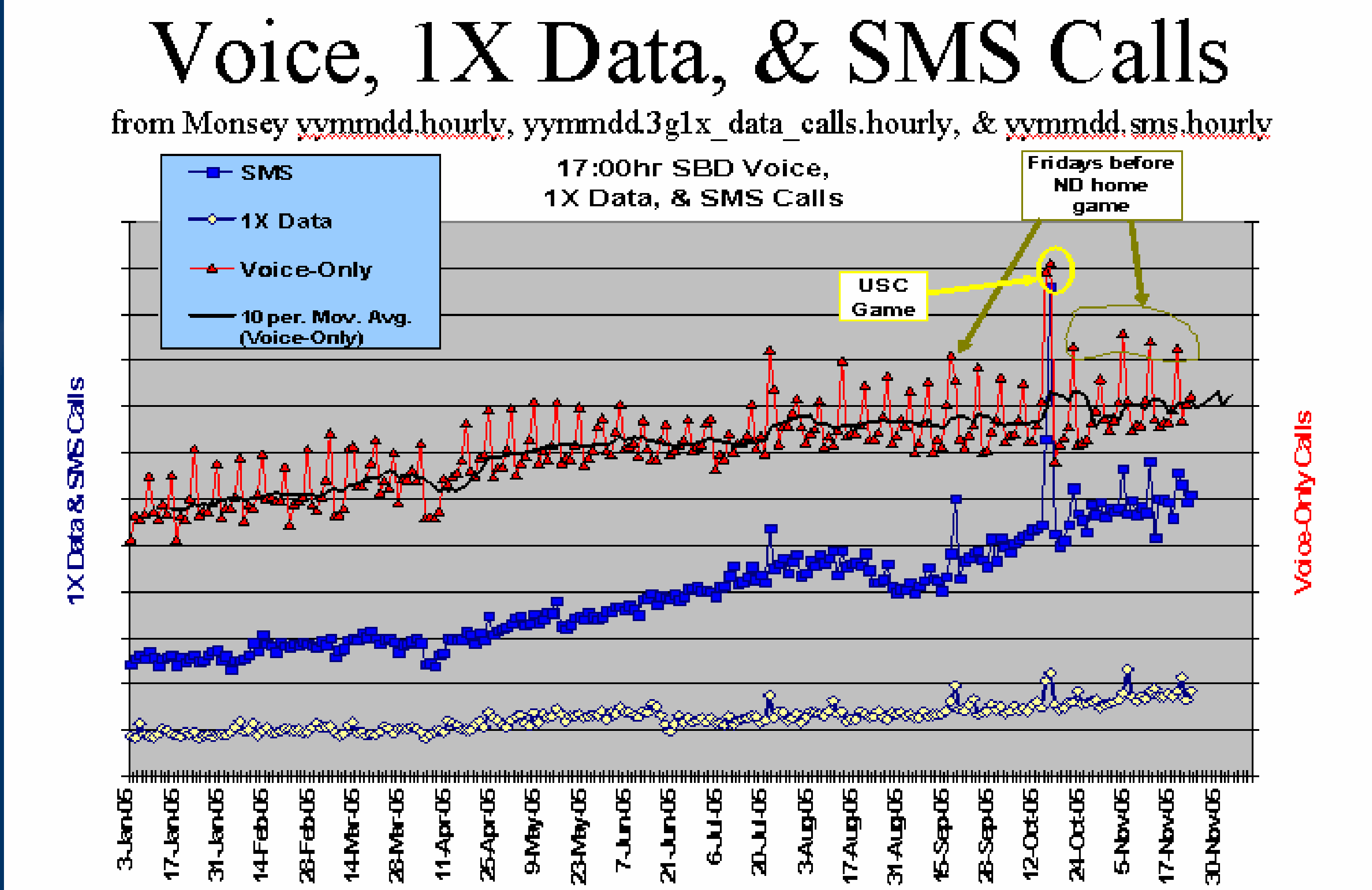
What ND did…

- Removed mandatory phone service in dorms
  - Flipped Dorm cost-model to be “opt-in”
  - Student can pick from any voice service of their choosing including cellular, VoIP, Skype, and even ND service
- Redirected Voice revenue to cover top ResNet priorities
  - Expanded basic CATV included in R&B
  - Any advanced digital CATV/HDTV services billed to student
  - WiFi in all dorms
  - Cellular Distributed Antenna System
  - High-end print stations in dorms

Cellular @ Notre Dame

- ND had a proud heritage of keeping cell towers away from campus
- ND suffered from poor coverage in residential dorms and across campus
  - Students complained they often couldn’t connect
  - Employees couldn’t rely on wireless devices for day-to-day usage
- ND experienced cellular-capacity issues during sporting events
  - Public Safety and Athletics department couldn’t use cell phones as a tool during game days.

Cellular @ Notre Dame

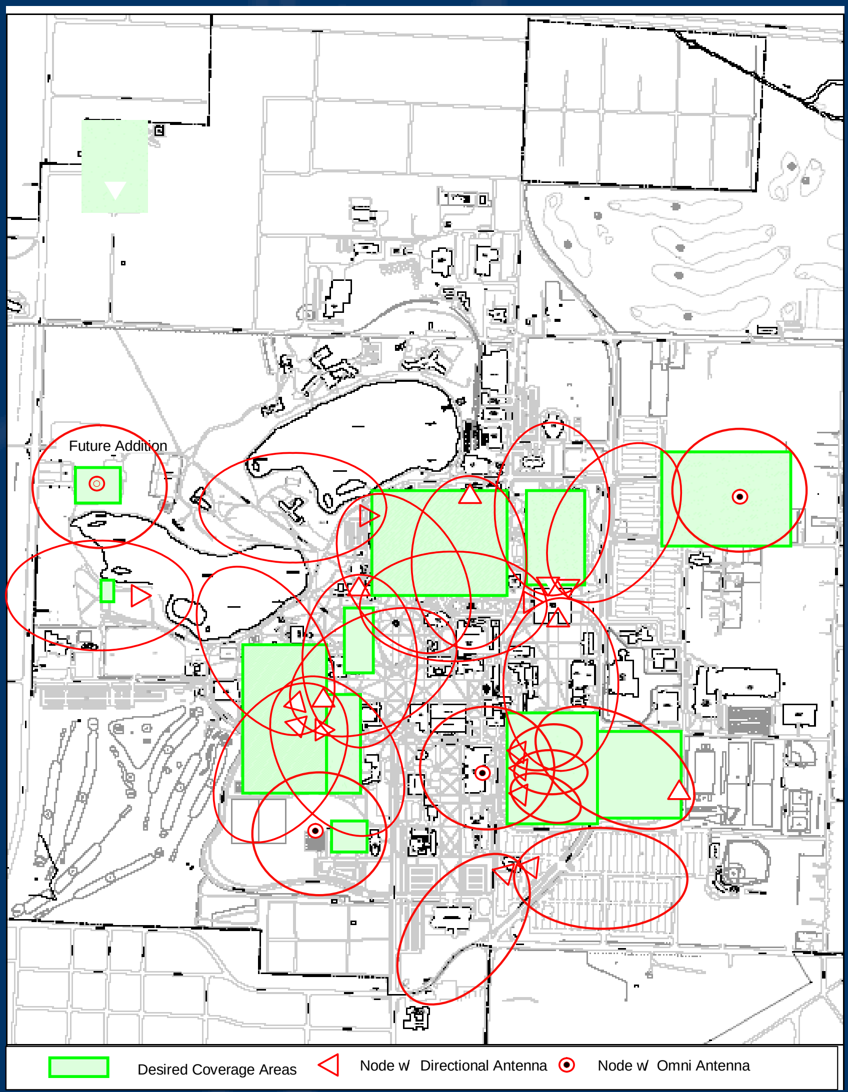


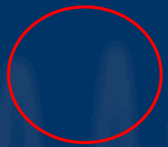
- Data is 17:00hr, except ND Game Day which is peak BHCA

Cellular Distributed Antenna System

- Notre Dame signed agreement with NextG Networks to deploy start-of-the-art carrier-independent distributed antenna system
  - No CapEx outlay required by ND; carriers cover cost
  - Carrier & technology independent; 850 & 1900 MHz, CDMA and GSM
  - Multiple carriers per antenna cuts down on antenna deployment
  - Fiber backhaul from antennas to carrier equipment in co-lo facility

Notre Dame Cellular DAS





Anticipated outside coverage rings of 16 microcells

Notre Dame Cellular DAS

Communication Partnerships

- Working with various communications partners for a unified communications strategy
  - AT&T and Cingular for transport – there will be little difference between voice over wire, WiFi, or cellular.
  - All will soon be IP-based and the rest are merely transport mediums
- Looking at and talking to a number of portal and specialty software companies on how best to deliver targeted communications
  - RAVE wireless

Still challenges to overcome, however…

- Communication to the handheld instrument is still some years away
- In the meantime, ND will continue to rely on portal and e-mail
  - Portal will be focal point of pull communiqués
  - E-mail will be focal point of push communiqués
- Every student will get a voicemail box his/her 4 years on campus
  - Like e-mail, they will be expected to check it

Conclusions

- Wireless devices will be the communications future
- Wireline/wireless convergence will provide greater features at reduced cost
- Sector consolidation will drive costs down while features up
- College and universities are ill suited to stay in such a rapidly changing and competitive arena

- Seriously consider outsourcing your communication needs.

Things to look forward to...

- Global 2005 mobile porn sales hit $1 billion, up 175% from 2004, says Juniper Research.
  - Good news -- US sales are just $30 million

Cell phones are being taken to the grave in greater numbers

Cell phones for tots

GPS pet finder

Things to look forward to…

- The link to Blackberry spoof can be found at:

http://www.cba.ca/mercerreports

- Look under Video Archives: Season 3: Week of January 10, 2006: Blackberry

Thank You

Questions/Comments?

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