

 UNIVERSITY OF DENVER



Smart Phones/PDAs CSU Mobile RFP Activity

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Smartphones/P.D.A.



- 3 Major *Operating Systems*:

- PalmOS



- Microsoft Pocket PC 2006



- RIM (Blackberry OS)



- Smartphone/P.D.A. ownership issues

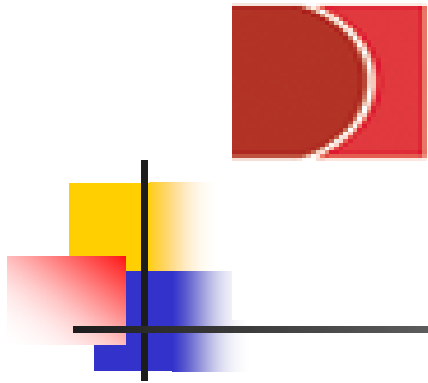
- Similar to laptops

- E-mail, Web-Browsing, Calendar, Contacts are "killer apps"



Smartphones/PDAs

- Currently no site license @ DU Smartphone/P.D.A. Anti-Virus packages
 - "on your own"
- Smart phone or P.D.A. is lost/stolen
 - What is at risk?
 - What is the policy?
 - Do you have one?
- As bandwidth increases and 802.11 is integrated, more apps will appear
- Cisco dropped official VPN Client support for their gear ☹



- No official policy on P.D.A.s
- Laptop requirement for students
- Goodlink wireless messaging trial for Staff (www.good.com)
 - Pushes e-mail to phone (Over-the-air)
 - Must have "data plan" with cell carrier
 - WAN application with 802.11b/g LAN possibilities.



According to good.com site:

- Proprietary solutions (blackberry/RIM) offer limited support for industry standards
 - Users limited to one device
 - Users compromise functionality, choices
- “Remote wipe” for lost or stolen P.D.A.s
 - Common “Over the Air” feature among several management vendors
- \$300 per device



- Server Admin from Smartphone
 - Using Pocket PC 2003 with Verizon data plan
 - Using MS-PPTP VPN Client to access server
 - Then use MS RDP (built into Pocket PC OS)
 - Built 640x480 VMWare server for this purpose
 - Backup monitoring, other applications



DU – University Tech Services

- Researching sonicmobility.com's (Avocent)
- Smartphone/PDA client much easier to read
- Pocket PC and Palm OS Clients
- Client well-suited for certain server applications - status, restart, reboot, etc.
- Trial
- Avocent KVM over IP products installed

- Sprint Higher Education Sales Team interested in a pilot course using Treo 650 (Palm OS Device)
 - 30 Students pilot
 - No decision yet
- Daniels IT officially supports Microsoft Pocket PC PDA/Smart phones – faculty & staff
 - Chapaura/Palm conduit software and Outlook/Exchange issues



DU Health Center

Health Center

- Working on HIPAA deadline (4/22/05!)
- Worried about patient data on P.D.A.s
- No official support yet, but looking at PDA/Smart phone Management platforms for Doctors perhaps Staff
- Using MS-ISA 2004 Server for VPN from Tablets to Server. Smartphones?



It's a PDA – no – it's a phone!

- Cell Phone with some PDA utility
 - Small, real-time access to mail, calendar
 - Not handy for typing; bluetooth may help
- PDA with Cell Phone functionality
 - Full-sized handheld with keyboard or stylus
 - Use headset or hold unit to your ear
- The sofa bed approach to mobile tech.



Synchronization problems

- Cradle synchronization
 - Cable, IR, links unit to a computer
 - Effectively a backup tool
 - Old, clunky approach; what you need is...
- Over-the-air synchronization
 - Must consider portable device, wireless carrier, backend systems



Wireless data service

- Provided by wireless carrier for flat fee
- Voice an optional add-on
- Myriad of T&Cs, such as peak hours, overage charges, voice/data roaming, coverage, US vs. International
- Carriers support specific devices; vendor-carrier partnerships



Over-the-Air Synchronization

- Stay current with mail and calendar
- All require IP accessible backend server
 - Exchange most common (ActiveSynch included with ES 2003)
 - Symbian and Palm licensed ActiveSynch
- Windows Mobile 2003 supports “push” synchronization via SMS messaging



OTA Synchronization (cont'd)

- Blackberry Enterprise Server and Goodlink Server are examples of intermediate software, between client and Exchange Server
 - Additional package to install, support, and license



MS Exchange Server Best?

- No commercial product supports OTA synch. using disparate calendar and email services
- Exchange has clear market share for integrated calendar, email
- Quick poll – who has standardized on Exchange for email & calendar?



Security Concerns

- Web, email most popular applications
 - Consider history of web client vulnerabilities, email worms and viruses
- Physical security – what do you get when you find or steal one of these?
- Transmission security – bluetooth?
- Authentication – especially important
- Carrier security

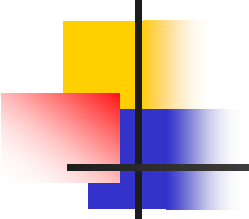


Virus Protection

- McAfee VirusScan PDA
 - Pocket PC 2002, Mobile 2003
- Symantec AntiVirus for Handhelds Corporate Edition (Palm, Pocket PC)
- Trend Micro Mobile Security
 - Mobile™ 2003/2003SE
 - Symbian OS v7.0 with UIQ 2.0/2.1 User Interface



CSU Cellular RFP



University Student Telephone Environments

- Mobile communication devices have almost saturated the student population
 - Voice mail comes standard – uses up “minutes”
 - With LNP, better services, and more services, more students are completely abandoning their land lines
- Decline in Long Distance (LD) revenue
 - More than 70% in the last 5 years
 - Student LD revenue just about insignificant today
- Basic service connections in residence halls are diminishing – at CSU now, only about 50% of residence hall rooms have a traditional telephone installed.
 - E911 poor triangulation technology may be the only remaining attribute of significance deterring wholesale abandonment of traditional telephones
- Cell telephones are students’ “preferred” modality of communication



The Cellular Industry

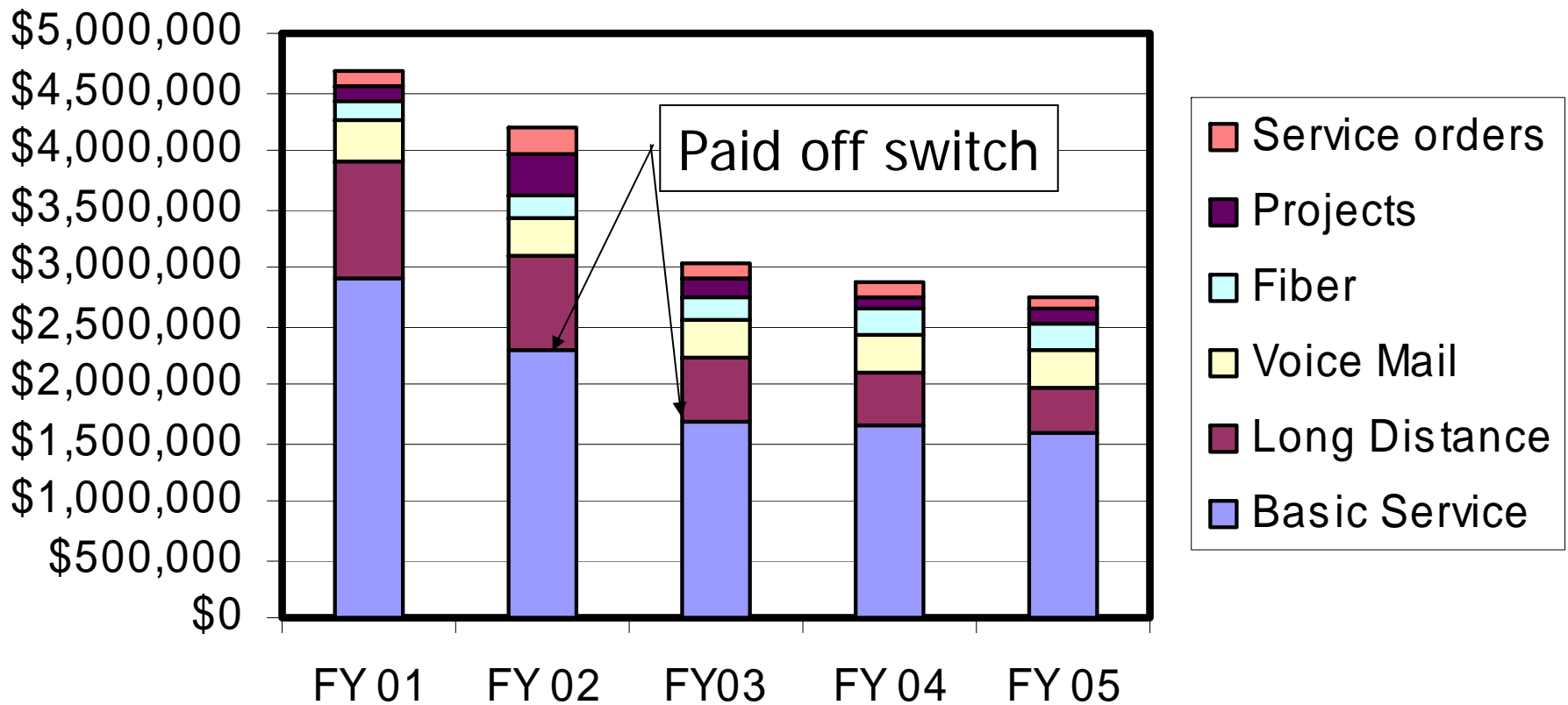
- The only consistently profitable telecommunications offering over the past 15 years
- Next pending consolidation, Sprint and Nextel, that will become the 3rd biggest provider
- Attractive features
 - Text messaging, including “push” messaging technologies
 - Web access
 - Push to Talk (PTT) or mobile to mobile– essential to “trades people,” who also need ruggedized devices



Third Generation Data (3G)

- EVDO – Verizon's CDMA solution
 - Washington DC and San Diego
 - 300-500 Kbps average, 2 Mbps peaks
- EDGE – AT&T
 - Throughout GSM/GPRS network
 - 100-130 Kbps, 200 Kbps bursts
 - UMTS coming, ≤ 2 Mbps
- Still expensive, WiFi hotspots better

Telecom at CSU Annual Revenue by Service Type





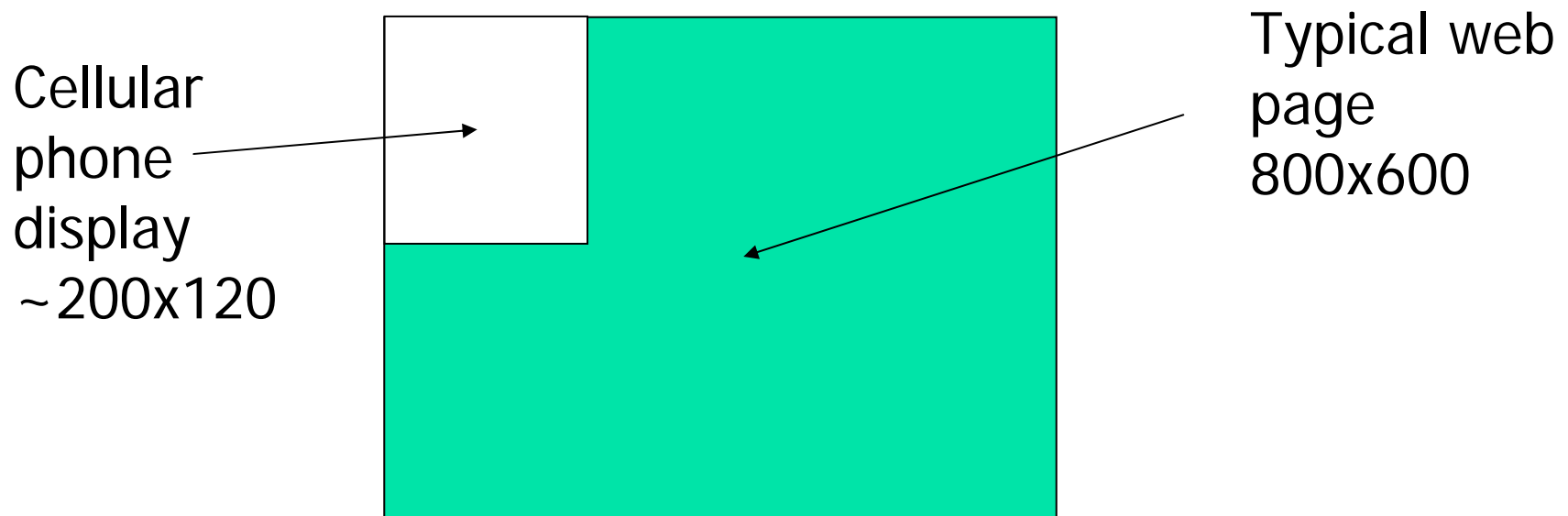
University Data Environments

- More mobile devices are emerging
 - Web-enabled cellular telephones
 - Voice enabled PDA's
- Students desire to access CSU's portal using these devices
 - "Can't I just...?"
- "Too many types of devices" places a significant strain on support staff



(Aside) The Major Problem

- Screen size, including size of artifacts





Data Environment

- The “Holy Trinity”
 - Web access, calendar
 - Directory services
 - Email access
- Futures
 - More personalized, individualized access into back-end services (databases)
 - Especially important for trades people



Rationale for a Mobile Offering to Students

- Meet customer's needs
 - Ensure 3G gets deployed locally
 - Ensure good coverage
 - Ensure good plans, especially mobile to mobile, no roaming, "bundled" voice minutes and data
 - Put "mobile" telephone numbers in directory
- Facilitate support
 - Standardize on a small number of devices ~5
- Recover some lost revenue from LD decay



Purchasing Process

- RFI
- RFP
- More than two years of plowing through an onerous purchasing process



RFP Parameters

- Exclusive University program
 - Mandatory for departmental-paid units
 - Only sanctioned program for students and employees' personal plans
- University performs all billing
 - No bad debt to the vendor
- University performs "front-line" support
 - User support
 - Device "personalized" configuration and support
- University and partner jointly market the program
- University performs development for integration with the portal: mobile.colostate.edu



Projection

- University can obtain sufficient revenue to enable portal development and administration of the program, and maybe a little more
 - Nowhere close to the drop in LD revenue
- But may facilitate the support activity and provide better desired service to users



Questions

- Are most welcome
- The only thing between you and lunch

