Laptop Ownership Requirement for Georgia Tech

Student Computer Ownership Committee
27-Feb-2007
SCOC Membership

- Linda Cabot, OIT
- Miles Edson, Housing
- Alex Taubman, Computer Store
- Jim Foley, CoC, Executive Board
- Eric Carlen, MATH
- Michael Gamble, College of Architecture
- T. Govindaraj, ISYE
- Aaron Lanterman, ECE
- Jim McClellan, ECE
Outline

• Rationale
• Data
  – Surveys of students and faculty
  – Benchmarking
• Usage/Pedagogy
• Support & Infrastructure
• Recommendation
  – Start in Fall-2008
Why Laptops?

• “Georgia Tech will define the technological research university of the 21st century and educate the leaders of a technologically driven world."

• GT Strategic Plan Goal 5: Intelligent Development of Effective Information and Educational Technology
  – Ubiquitous, secure wireless network access will be available to all students, faculty, and staff from any location on the Tech campus.
  – Use educational technology to enhance the educational experience of students who are enrolled in Georgia Tech programs inside and outside of the Atlanta campus.

• CoC will require laptops starting in Fall-2007 for CS-1301
Why make it a Requirement?

• Enhance Teamwork and Projects
• Lab or Studio usage
  – Analyzing data; writing programs
  – (re)Searching
• Consultation during Office Hours
• Active Learning
  – Small (and Large) classes
• Use during internship, co-ops, or Study Abroad
• Preparation for the “real world”
  – everyone carries and uses a laptop
Laptops In Classes

• Profs will develop new educational experiences

• Guarantee all students in a class have them
  – Example: CS-1301 will require laptops of CS majors
  – Complication: also taken by College of Science majors
    • Separate section?

• Ultimately, the follow-on CS course will need laptops
  – Grant from Microsoft
  – Puts GT in the forefront of CS education
Why not?

• Classroom Behavior
  – Attractive Nuisance

• Financial
  – Very small difference at purchase time
  – More susceptible to loss, damage
  – At support time, there are costs to GT

• Expectations will change
  – Students will expect “classroom” usage
  – Profs will have to adapt

• Don’t force me to have one
Attractive Nuisance

• Most common complaint is that laptops are a distraction during lecture
  - Students web surfing, instant messaging, etc.

• The same issue exists with cell phones

• Problem already exists regardless of whether there is a laptop requirement or not
  – 88% of incoming students had laptops in Fall-2006

• Professors are responsible for classroom management
  – and should feel empowered to control their classroom
  – and enforce an explicit "laptops down" policy, unless the laptops are specifically needed
Laptop Ownership Data (ResNet)

### Laptop Ownership – Housing Freshman

<table>
<thead>
<tr>
<th></th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>619</td>
<td>778</td>
</tr>
<tr>
<td>Total</td>
<td>785</td>
<td>880</td>
</tr>
<tr>
<td>Percent</td>
<td>78.9%</td>
<td>88.4%</td>
</tr>
</tbody>
</table>

Out of approximately 2000 Freshman
96% of Freshman live in the Residence Halls

### LAPTOP OWNERSHIP

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3 Fresh, 1/3 Soph, 1/3 Upper Class &amp; Grad</td>
<td>34.3%</td>
<td>45.7%</td>
<td>57.8%</td>
</tr>
</tbody>
</table>

25% Response Rate
50% of undergrads live on-campus
ResNet Survey (Freshmen)

<table>
<thead>
<tr>
<th>Cost of Machine, with monitor (Excluding printer and peripherals)</th>
<th>Fall 2005</th>
<th>Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>$999 or less</td>
<td>94</td>
<td>130</td>
</tr>
<tr>
<td>%</td>
<td>11.97%</td>
<td>14.77%</td>
</tr>
<tr>
<td>$1000-$1499</td>
<td>262</td>
<td>285</td>
</tr>
<tr>
<td>%</td>
<td>33.38%</td>
<td>32.39%</td>
</tr>
<tr>
<td>$1500-$1999</td>
<td>198</td>
<td>225</td>
</tr>
<tr>
<td>%</td>
<td>25.22%</td>
<td>25.57%</td>
</tr>
<tr>
<td>$2000-$2499</td>
<td>126</td>
<td>134</td>
</tr>
<tr>
<td>%</td>
<td>16.05%</td>
<td>15.23%</td>
</tr>
<tr>
<td>$2500 or more</td>
<td>75</td>
<td>66</td>
</tr>
<tr>
<td>%</td>
<td>9.55%</td>
<td>7.50%</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>%</td>
<td>3.82%</td>
<td>4.55%</td>
</tr>
<tr>
<td>Total Responses</td>
<td>785</td>
<td>880</td>
</tr>
</tbody>
</table>

For reference the laptop that ResNet recommended to students in Fall 2006 had a cost of $1,310.
It had a full 3 year warranty and included Microsoft Office.
OIT Log-in Survey: Jan-2007

• Users responded to two questions and answered yes or no to each question.

• Of the 8418 responses received –

• Question #1 (favor making laptop ownership a requirement)
  – 34% responded with YES
  – 66% responded with NO

• Question #2 (people who think that having laptops would improve the classroom experience)
  – 37% responded with YES
  – 63% responded with NO

• BUT, 80% already own laptops!!
Faculty Survey

- Conducted in Nov-2006
- Small Response: 43

- Looking for Pedagogical Factors
- Looking for “first adopters”

  - Question 3: Would significant class activities that use laptops be part of the curriculum in your courses?

    Yes 14
    No 28
    No response 1
Exploitation by Faculty

• Question 10: What new computer-based instruction would you introduce in your class content if students were required to own laptops?  Open-Ended Response

Total responses 35/43
None  13
(Hands-on) Simulations  2
Interactive demos  4
Interactive design  1
Quiz, questions  5
Short tutorial  1
Coding in class  2
Numerical problems  1
Laptops don't change what we do or how students learn  3
Won't modify material, or change pedagogy (in short term)  3
Question 11: We are considering a **mandatory** student laptop requirement for fall of 2008.

- Do you favor or oppose this initiative?
- If you either favor it or oppose it on the basis of issues that are not touched upon above, please explain.

Total responses 39/43

- Strongly Favor 3
- Strongly Oppose 3
- Favor 13
- Oppose 14
- Neutral 3
- Optional 3 (laptop or desktop)
## Laptop Ownership Trends Among Peer Institutions

<table>
<thead>
<tr>
<th>California Institute of Technology</th>
<th>Texas A &amp; M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carnegie Mellon</td>
<td>University of California Berkeley</td>
</tr>
<tr>
<td>Cornell</td>
<td>University of California Los Angeles</td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td>University of Florida</td>
</tr>
<tr>
<td>MIT</td>
<td>University of Illinois – (UIUC)</td>
</tr>
<tr>
<td>North Carolina State</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>Northwestern</td>
<td>UT Austin</td>
</tr>
<tr>
<td>Penn State</td>
<td>University of Washington</td>
</tr>
<tr>
<td>Purdue</td>
<td>Virginia Tech</td>
</tr>
</tbody>
</table>
LAPTOP OWNERSHIP TRENDS AMONG PEER INSTITUTIONS

- Laptop Ownership among undergraduates at our peer institutions follow a similar trend to Tech, with an average of 83% of all undergraduates owning a laptop in 2005. The trend is upward.

- While all of our peer institutions do not mandate laptop ownership by undergraduates, many graduate programs now require mandatory laptop ownership.

- Several peer institutions have laptop rental programs and offer full technical support for all students who own laptops.

- Most peer institutions do not have pooled insurance policies for students who own laptops. Laptop security is the student’s responsibility.
Support: Impacts OIT & Housing

- Support for problems affecting academic use of laptops
- Length of time to diagnose/resolve problems
- No on-site laptop repairs - what if damaged/stolen?
- **Loaners needed (or Daily Rental)**

- Validation for installed licensed software (proof of purchase)
- Replacing or upgrading operating systems - who/how?

- Data recovery parameters
- Liability issues working on personally owned equipment

- **Increased workload on central and local IT staff**
- Since April, OIT Resource Center has had increase of 6000+ requests
- Training for frequently encountered problems

- **Upgrade wireless infrastructure**
- **Upgrade backup possibilities**
Status Quo

• Existing Student Computer Ownership Program
  – Choice: desktop or laptop
    • SCOC Brochure already encourages laptops
  – More students are buying laptops
    • Ownership → 99 %
  – Individual units can add their own requirements above and beyond the SCO policy
  – Encourage Schools, or Colleges to require them
  – **DOWNSIDE:** can’t use them in courses
Recommendation

• **Universal requirement starting in Fall 2008**
  – All undergrads would have them by 2011
    • i.e., the class of 2012
  – Continue to allow diversity of machines
  – Requirement enables enthusiastic Profs to design new course activities around the laptops

  – Other benefits
    • MS campus agreement
    • Integration with Sakai