Laptop Ownership Requirement for
Georgia Tech

Student Computer Ownership
Committee
27-Feb-2007

SCOC Membership

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- 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

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

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

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)

<table>
<thead>
<tr>
<th>Laptop Ownership – Housing Freshman</th>
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</thead>
<tbody>
<tr>
<td>Fall 2005</td>
</tr>
<tr>
<td>Laptop</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Percent</td>
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96% of Freshman live in the Residence Halls

LAPTOP OWNERSHIP

ResNet Satisfaction Survey
1/3 Fresh, 1/3 Soph, 1/3 Upper Class & Grad

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<thead>
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<tbody>
<tr>
<td>Laptops</td>
<td>34.3%</td>
<td>45.7%</td>
<td>57.8%</td>
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</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>
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<tbody>
<tr>
<td>Fall 2005</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>$999 or less</td>
</tr>
<tr>
<td>$1000-$1499</td>
</tr>
<tr>
<td>$1500-$1999</td>
</tr>
<tr>
<td>$2000-$2499</td>
</tr>
<tr>
<td>$2500 or more</td>
</tr>
<tr>
<td>Don’t Know</td>
</tr>
<tr>
<td>Total Responses</td>
</tr>
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</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

Faculty: For or Against?

• 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

California Institute of Technology
Carnegie Mellon
Cornell
Johns Hopkins
MIT
North Carolina State
Northwestern
Penn State
Purdue
Stanford
Texas A & M
University of California Berkeley
University of California Los Angeles
University of Florida
University of Illinois – (UIUC)
University of Michigan
UT Austin
University of Washington
Virginia Tech

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