A New Model for Open Sharing

Jon Paul Potts
I. Vision

II. Implementation

III. Outcomes

IV. What It Means
Vision — Institutional decision-making

- Fall 1999 — Faculty committee appointed
- Fall 2000 — “OpenCourseWare” concept recommended to MIT President Charles M. Vest
- April 2001 — MIT OCW announced in *The New York Times*
Vision — Institutional decision-making

“OpenCourseWare looks counterintuitive in a market-driven world. But it really is consistent with what I believe is the best about MIT. It is innovative. It expresses our belief in the way education can be advanced — by constantly widening access to information and by inspiring others to participate.”

— Charles M. Vest, President Emeritus of MIT
Vision — Vision to reality

› June 2001 — Funding partnership with the William and Flora Hewlett Foundation, and the Andrew W. Mellon Foundation

› September 2002 — MIT OCW pilot site- 50 courses

› September 2003 — MIT OCW officially launches 500 courses

› April 2005 — 1,100 courses
Vision — What is MIT OCW?

**MIT OpenCourseWare IS NOT:**

- An MIT education
- Intended to represent the interactive classroom environment
- Degree granting

**MIT OpenCourseWare IS:**

- A Web-based publication of virtually all MIT course content
- Open and available to the world
- A permanent MIT activity
Vision — Why is MIT doing this?

› Furthers MIT’s fundamental mission

› Embraces faculty values
  ▪ Teaching
    ▪ Sharing best practices with the greater community
    ▪ Contributing to their discipline

› Counters the privatization of knowledge and champions the movement toward greater openness
Vision — Dual mission

› Provide free access to virtually all MIT course materials for educators and learners around the world

› Extend the reach and impact of MIT OCW and the “opencourseware” concept
Vision — Where we are

<table>
<thead>
<tr>
<th>Phase I Pilot</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses</td>
<td>50</td>
<td>500</td>
<td>900</td>
<td>1250</td>
<td>1550</td>
<td>1800</td>
<td>1800</td>
</tr>
</tbody>
</table>

Phase II Expansion

Phase III Steady State
Implementation
Implementation — 1100 courses available

Site Highlights

› Syllabus
› Course Calendar
› Lecture Notes
› Exams
› Problem/Solution Sets
› Labs and Projects
› Video Lectures
Implementation — Publication process

Managing a course through the MIT OCW process

- Recruit faculty and courses
- Plan
  - Transcribe, convert materials
  - Identify IP
  - Design layout
- Build
  - Input content
  - Add metadata
  - Scrub content
  - Clear IP
  - Initial QA
- Publish
  - Test site
  - Final QA
  - Faculty signoff
  - Stage for publish
- Support
  - Edit/add
  - Respond to inquiries
  - Troubleshoot

MIT OCW = Snapshot of Completed Course

A New Model for Open Sharing
Implementation — Intellectual property

› Course materials available under a Creative Commons license that:
  ▪ Grants users the right to use, distribute, and modify

› Obliges users to meet three use requirements:
  ▪ Use must be non-commercial
  ▪ Materials must be attributed to MIT and original author or contributor
  ▪ Publication or distribution of original or derivative materials must be offered freely under identical terms “share alike”
Outcomes
Outcomes — Access data

MIT OCW Monthly Traffic (since 10/1/03)
Outcomes — Access data from Ethiopia

MIT OCW Traffic from Ethiopia (since 10/1/03)
Outcomes — Access data from Ghana

MIT OCW Traffic from Ghana (since 10/1/03)
Outcomes — Access data from Kenya

MIT OCW Traffic from Kenya (since 10/1/03)
Outcomes — Access data

Site Traffic Data (since 10/1/03)

<table>
<thead>
<tr>
<th></th>
<th>March 2005</th>
<th>Averages Since 10/1/03*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Daily Visits</td>
<td>15,620</td>
<td>12,335</td>
</tr>
<tr>
<td>Total Visits</td>
<td>484,205</td>
<td>375,536</td>
</tr>
<tr>
<td>First-Time Visits</td>
<td>267,778</td>
<td>197,556</td>
</tr>
<tr>
<td>Repeat Visits</td>
<td>216,427</td>
<td>161,810</td>
</tr>
</tbody>
</table>

* Figures in italics are averages
Outcomes — Access data

Traffic by Geographic Region (in Web hits, since 10/1/03)

<table>
<thead>
<tr>
<th>Region</th>
<th>Hits Since 10/1/03</th>
<th>Hit %</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>195,801,509</td>
<td>43.6</td>
</tr>
<tr>
<td>East Asia</td>
<td>89,788,460</td>
<td>20.0</td>
</tr>
<tr>
<td>Western Europe</td>
<td>71,038,243</td>
<td>15.8</td>
</tr>
<tr>
<td>South Asia</td>
<td>27,180,996</td>
<td>6.1</td>
</tr>
<tr>
<td>Latin America</td>
<td>24,196,746</td>
<td>5.4</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>20,308,716</td>
<td>4.5</td>
</tr>
<tr>
<td>MENA</td>
<td>11,498,519</td>
<td>2.6</td>
</tr>
<tr>
<td>Pacific</td>
<td>5,801,715</td>
<td>1.3</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>3,432,571</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>TOTAL HITS</strong></td>
<td><strong>449,047,475</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Countries with most hits in March 2005 (outside of U.S.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Web Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. China</td>
<td>2,129,103</td>
</tr>
<tr>
<td>2. India</td>
<td>1,222,719</td>
</tr>
<tr>
<td>3. Canada</td>
<td>1,048,524</td>
</tr>
<tr>
<td>4. South Korea</td>
<td>1,008,295</td>
</tr>
<tr>
<td>5. Taiwan</td>
<td>974,456</td>
</tr>
<tr>
<td>6. United Kingdom</td>
<td>776,755</td>
</tr>
<tr>
<td>7. France</td>
<td>529,660</td>
</tr>
<tr>
<td>8. Germany</td>
<td>486,608</td>
</tr>
<tr>
<td>9. Japan</td>
<td>422,402</td>
</tr>
<tr>
<td>10. Brazil</td>
<td>406,532</td>
</tr>
<tr>
<td>11. Turkey</td>
<td>380,605</td>
</tr>
<tr>
<td>12. Sweden</td>
<td>375,965</td>
</tr>
<tr>
<td>13. Italy</td>
<td>357,541</td>
</tr>
<tr>
<td>14. Australia</td>
<td>306,286</td>
</tr>
<tr>
<td>15. Spain</td>
<td>305,774</td>
</tr>
<tr>
<td>16. Singapore</td>
<td>301,704</td>
</tr>
<tr>
<td>17. Netherlands</td>
<td>244,064</td>
</tr>
<tr>
<td>18. Iran</td>
<td>215,478</td>
</tr>
<tr>
<td>19. Indonesia</td>
<td>210,760</td>
</tr>
<tr>
<td>20. Mexico</td>
<td>206,790</td>
</tr>
</tbody>
</table>
Outcomes — Overall user profile

› Visitors generally fit one of three user profiles:
  ▪ Educators are 15.3% of all MIT OCW traffic
  ▪ Students are 31.4%
  ▪ Self-learners are 48.2%

› 66% of visitors hold a bachelor’s or master’s degree

› Visitors most frequently interested in courses in electrical engineering, business, physics, and mathematics

› Visitors average 1.6 visits per month

› Review average of 9.36 HTML pages per visit
## Outcomes — Use data

<table>
<thead>
<tr>
<th>Use Scenario</th>
<th>% of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educators</strong></td>
<td></td>
</tr>
<tr>
<td>Planning, developing or teaching a course</td>
<td>36%</td>
</tr>
<tr>
<td>Enhancing personal knowledge</td>
<td>22%</td>
</tr>
<tr>
<td>Planning curriculum</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>32%</td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td></td>
</tr>
<tr>
<td>Complementing a subject currently taking</td>
<td>43%</td>
</tr>
<tr>
<td>Enhancing personal knowledge</td>
<td>40%</td>
</tr>
<tr>
<td>Planning future course of study</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Self-learners</strong></td>
<td></td>
</tr>
<tr>
<td>Enhancing personal knowledge</td>
<td>81%</td>
</tr>
<tr>
<td>Learning subject matter—course not available for study</td>
<td>9%</td>
</tr>
<tr>
<td>Planning future course of study</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
</tbody>
</table>
Outcomes — Educator use case study

James, affiliate instructor at the University of Idaho

> Adopted both course material and site structure of an MIT Sloan Course

> Added his own material and modified the MIT OCW site

> “I will probably differ in that I will introduce the concept of Value Engineering and I have a lecture prepared on FMEA. I haven’t seen these topics discussed in the MIT curriculum. But... OpenCourseWare gives me a fast start on the design of the course.”
Outcomes — Institute use case study

› 70 students taught by MIT’s Africa Internet Technology Initiative (AITI) at the University of Ghana in Legon

“[AITI] downloaded all the material from Course 1.00 and provided it offline. We modified the links to work in off-line mode, and we distributed a version to every student... Students literally applauded.”
— Excerpt from AITI Preliminary Report

› AITI Computer Science Department using MIT OCW materials to update its curriculum

“OCW reflects current trends and thus provides an immediate bridge of the digital divide that would otherwise take five years to cross... Other resources for curriculum review include so much hassle and bureaucracy that by the time the review is made the material is easily years old... OCW bypasses all of that by connecting everyone in real-time to MIT’s most up-to-date material.”
— Professor Jacob Aryeetey, head of Computer Science Dept.
## Outcomes — User impact

### Visitor Impact Statement Agreement

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree/ Agree</th>
<th>Neutral</th>
<th>Disagree/ Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helped me be more productive and effective</td>
<td>81.1%</td>
<td>18.3%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Helped me learn</td>
<td>88.0%</td>
<td>11.6%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Improved my courses using OCW (Educators)</td>
<td>84.5%</td>
<td>12.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Increased my motivation and interest in learning</td>
<td>80.2%</td>
<td>19.0%</td>
<td>0.8%</td>
</tr>
<tr>
<td>I would recommend OCW to others</td>
<td>92.5%</td>
<td>7.1%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Source: 2004 Intercept Survey
Outcomes — Feedback data

➢ 21,000 emails to ocw@mit.edu
  ▪ Majority (60+ percent) are grateful or congratulatory
  ▪ Other inquiries
    • How to register
    • Technical questions
    • Inquiries from other educators
    • Vendors
  ▪ Negative responses (less than 1 percent)

➢ 32,000 users self-subscribed to monthly email newsletter
Outcomes — Feedback

According to users, MIT OpenCourseWare is:

“... the Eighth Wonder of the World.”

“... the Big Bang of the Knowledge Universe.”

“... the greatest thing any institution of higher learning has ever done.”

“... one of the best things ever in history.”

“... like falling in love.”

“... the coolest thing on the Internet.”

“... worthy of the next Nobel Peace Prize.”
Outcomes — Benefits for MIT

› Institute-level benefits
  ▪ Advances MIT’s institutional mission
  ▪ Enhances MIT’s image around the world
  ▪ Generates community pride (alumni)
  ▪ Stimulates collaboration among faculty

› Department-level benefits
  ▪ Showcases individual departments and their curricula
  ▪ Enhances faculty and student recruitment efforts
  ▪ Accelerates adoption of the Web
Outcomes — Benefits for MIT faculty

› 1 in 5 courses on MIT OCW (175) had no prior Web site

› MIT OCW has transcribed lecture notes for 44 subjects, and created more than 2,500 open images

› 32% of MIT faculty report using their MIT OCW site for teaching, advising and research

› “I think [OCW] is a great way for MIT to put its principles into highly visible action... People all over the world, of whatever status and background, need only a computer to see what is happening here and begin thinking about how they can benefit from it.”

— MIT History Professor
Outcomes — Benefits for MIT students

› More than 100,000 visits from MIT.EDU in 18 months

› 68% of MIT students use the site (excluding freshmen)

› 95% of MIT students report positive impact on student experience

› 53% of MIT freshmen are aware of MIT OCW

› 16% of freshmen say it influenced their decision to attend MIT

› “This is a great way to go back and review material from a class I took in the past (I do this as part of my research and to prepare for job interviews). It makes the material more accessible and much more useful.”

— MIT EECS Graduate Student
Outcomes — Benefits for MIT students

- 9,362 visits in March from MIT.EDU
- 108,672 total visits from MIT.EDU since 1/1/04
- Traffic from MIT.EDU domain follows periods of peak student use
What It Means
The World of Open Educational Resources

**Tools**

*Software for development and delivery of resources*

- **Content Management Systems (CMS)**
  - USU's Educommons

- **Development Tools**
  - Rice Connexions

- **Learning Management Systems (LMS)**
  - H20 (at Harvard)
  - Wikis
  - USU's OSLO research

- **Groupware**
  - Sakai
  - Moodle

**Content**

*Materials published for learning or reference*

- **Learning Courseware**
  - MIT OCW
  - JHSPH OCW
  - Tufts OCW
  - UMich OCW
  - Utah St. OCW
  - Sofia

- **Learning Objects**
  - Rice Connexions
  - Merlot
  - UUC-Berkeley videos

**Reference Collections**

- UTOPIA
- Library of Congress
- Internet Archive
- Google Scholar
- Wikis
- PLoS and other open journals

**Standards**

*Shared conventions for digital publishing of open resources*

- **Licensing Tools**
  - Creative Commons

- **Interoperability**
  - OKI
  - IMS

**Best Practices**

- CMU (design principles)

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Meaning — Open sharing at universities

A New Model for Open Sharing
Meaning — Emerging “opencoursewares”

> Other OCWs are beginning to appear — both in the United States and abroad
Meaning — Universia translations

Universia.net is a network of 840 universities in Spain, Portugal, and Latin America.

90 courses in Spanish and Portuguese through Universia.net partnership.
Meaning — CORE translations

› China Open Resources for Education (CORE)
  ▪ 100 university members in PRC
  ▪ 10 to 20 million users

› Objectives
  ▪ Enhance the quality of education in China
  ▪ Translate MIT and other courses into Chinese
  ▪ Offer Chinese courses for sharing globally
Meaning — What does it mean?

› Continues to be tremendous excitement

› The vision is achievable

› The impact of MIT OpenCourseWare will be significant
Thank You!

Visit MIT OpenCourseWare online at http://ocw.mit.edu

Visit the “Opencourseware How To” site on the Web at http://ocw.mit.edu/OcwWeb/HowTo/index.htm