2009 BUDGET MEMORANDUM
OPEN EDUCATIONAL RESOURCES INITIATIVE
November 17, 2008

OVERVIEW

Hewlett continues to play the role of catalyst in the emerging field of Open Educational Resources (OER). Our strategy remains focused on using information technology to help equalize educational opportunities for individuals, faculty, and institutions in the United States and throughout the world. A program review presented to the Board in February 2007 indicated we had been tremendously successful in building the new field of OER and recommended focusing resources more strategically. The year 2008 marked a new phase for OER, as our theory of change evolved to contain the two near-term goals of supporting the development of a robust infrastructure to sustain OER beyond Hewlett's involvement and demonstrating the added value of OER to teaching and learning.

During this past year we continued to gather evidence that suggests that the power of openness—which included increasing access and transparency, co-creation and adaptation of content, and feedback loops to improve content and learning "anytime, anywhere"—has a transformative impact on institutions and education overall.

Progress in 2008 in infrastructure has been strong with the continued emergence of solid core organizations and regional and worldwide networks. Most encouraging, however, is the increased willingness by governments and other funders to support OER. The governments of Vietnam, Indonesia, and the Netherlands have embraced OER as a vehicle to address local educational needs. While each country selected different aspects of OER to use, in each case they built on an element of Hewlett-supported infrastructure. To raise the standard of quality and lower cost, Vietnam is developing open textbooks of the twenty courses in highest demand at their university level. The country has also translated Rice University's Connexions platform into Vietnamese and sent developers to Rice to expand their capacity to improve the platform. To address the need for continuous workforce skills improvement, the Netherlands is planning an OER Polytechnique, a direct extension of a small Hewlett-seeded grant in 2006 ($200,000 in Hewlett support matched by $500,000 from the Netherlands Ministry of Education) to open courses at the Open University Netherlands. In Indonesia, geography and cost limit student access to high-quality education. Its Ministry of Education is planning to leverage content across all 720 Indonesian universities and make each university part of the OpenCourseWare Consortium.

In addition to continuing to build a sustainable OER infrastructure, we began to support the development of three innovation clusters to demonstrate how openly available, high-quality content can transform teaching and learning worldwide. Significant progress was made in each cluster—open gaming, open textbooks, and open participatory science learning.

Keen interest in OER Health began to emerge early in 2008. We found significant support among experts to apply OER to the health area. OER Health may emerge as a priority innovation since it provides a valuable opportunity to demonstrate the potential of OER to address a clear

global need. Lastly, we have been planning for and supporting a set of activities to apply to teacher training. In April, the Teacher Education in Sub-Saharan Africa (TESSA) project was launched across eighteen institutions in nine countries and in four languages, providing a shining OER example of the power of co-creation and localization. We are planning a teacher training demonstration cluster in 2009.

A primary focus in 2009 will be on increasing the number of open courses with embedded formative assessments. The November 2008 docket includes a joint request from OER and Improving Instruction to support the development of an open algebra course to provide eighth grade California students specifically, and other algebra students in general, with access to rigorous, flexible courses that matches their learning style and needs. Here, open-based technology provides a vehicle to increase quality content beyond the current and expected capacity of algebra teachers in California. Concurrently, with the Bill & Melinda Gates Foundation, we are planning to collaborate on developing and managing a math education project for community college students that addresses needed math skills from arithmetic through pre-algebra, algebra, and statistics. We will apply the content and the production process from the California Algebra Project to the Gates/Hewlett project.

We see great opportunities ahead. In 2009, we need to sharpen our focus while balancing the delicate needs of long-term development. We need to step back and systematically analyze where and how Hewlett can optimize its resources for the greatest impact at this stage of growth. Can the Foundation adequately support infrastructure development and demonstration clusters? How many demonstrations can our funding sustain at a high standard of excellence? We also need to analyze whether some sort of "OER Institute" should be developed to fill critical gaps and add capacity. We are planning to engage a consulting group to help us address these high-priority questions. The outcome of this engagement will be a refined theory of change, an examination of expected return on investment and an overall five-year strategic plan. The analysis is targeted for completion in mid-2009.

COMPONENT: Supporting the Development of a Robust Infrastructure to Sustain OER beyond Hewlett's Involvement

Progress in 2008

We continued to work toward building a robust infrastructure by developing strong core agencies, building effective networks of organizations worldwide, establishing supportive partnerships, simplifying and clarifying intellectual property issues, setting best practice guidelines that address use and accessibility, designing viable models for ongoing support and maintenance of OER projects and the overall movement, conducting research, and creating metrics.

Several strong core OER organizations and partnerships emerged and were strengthened in 2008. The flexible copyright organization Creative Commons will be financially stable for the next five years since raising $12.5 million from five funders. The OpenCourseWare Consortium is now a 501(c)(3), consists of 250 institutions, offers 4,000 courses, and has ratified an international

governing board. The OER Africa office was established in Nairobi and is now housed within the South African Institute for Distance Education after an initial start with the African Virtual University. Emerging regional and worldwide networks include the Teachers Without Borders network connecting 119 countries and European Schoolnet working with twenty European Ministries of Education.

While Hewlett has been the lead and early funder of OER, the ultimate success of this initiative relies on strong partnerships. In 2008, the Gates Foundation committed to OER as an innovative strategy and is exploring cofunding OER course development. The Shuttleworth Foundation has committed $8 million to open textbooks and is extending Hewlett's investment in open language learning by piloting a mobile prototype in South Africa. UNESCO has made a public commitment to OER and supports an online community of 750 members from 105 member states.

A range of organizations are tackling the thorny intellectual property issues critical to the success of OER. Creative Commons is working closely with grantees to sort through legal issues. A group of universities committed to open courses and courseware have organized to grapple with "fair use" issues in the digital world. The World Intellectual Property Organization has integrated OER into its regional meetings, and public broadcasting has held a first-of-its-kind conference among stakeholders.

Ultimately the strength of OER rests in being able to address the "so what?" question. While the Web provides a powerful vehicle to disseminate information, the ultimate impact on teaching and learning is Hewlett's clear end goal. To begin to address this question, the Open Learning Network has moved from conceptual need to a grant request (included on the November 2008 docket) to support sharing methodologies and evidence of the effectiveness of OER on teaching and learning and to facilitate more transformative educational practices. Both the Open University UK and Carnegie Mellon University have taken the lead in this arena. Beyond the qualitative and quantitative studies of the Open Learning Network, quantitative Web-based consistent and comparable metrics have been designed and piloted with seven grantees; full implementation is slated for 2009.

Progress was modest in 2008 in setting guidelines and designing sustainable models for the field. Here, Hewlett can play a critical role from its unique view of the field. The issues of guidelines for quality, access for the disabled, and interoperability (the ability of content to "travel well" from one platform to another, including handheld devices) continue to surface. Early in the development of OER, Hewlett used name branding and elite universities to signal the quality of content. With content now developed through grassroots organizations and volunteers as well as established institutions, we need to deal with an open community and how quality is assured to the end user. In 2008, Connexions launched a quality "lens" feature to its open repository, an early pilot of a quality-assurance system.

With respect to access for the disabled, Hewlett now requires prospective grantees to explicitly address this issue in their grant proposals. OER staff have held exploratory discussions with world experts in the area of accessibility and have engaged them to work with Physics Nobelist Carl Weiman (University of Colorado grant request on the November 2008 docket) to make his

media-rich simulations fully accessible. The knowledge gained from this collaboration will be shared with the OER community. With respect to content "traveling well," OER staff are already planning an analysis related to OER branding and machine readability in 2009.

The issue of sustainability remains complex and is clearly linked to Hewlett's exit strategy. There is a need for sustainable content, sustainable organizations, and a sustainable overall movement. Openness has varying features, and the value proposition and business models vary among players. What does it mean for the nonprofit OpenCourseWare Consortium to be sustainable? What does sustainability mean to for-profit Scholastic Inc.? Monterey Institute for Technology and Education, an organization we launched in 2004, is now at 60 percent operational breakeven and projected to be at 80 percent breakeven in 2009. Clear measures of success are needed for this critical infrastructure dimension.

Plans for 2009

Here we highlight our primary goals and expected outcomes for 2009.

Core Agencies, Networks, and Partnerships

A primary goal for 2009 is to ensure that two core OER organizations have stable funding: OER Africa and the OpenCourseWare Consortium. With MIT professor and OpenCourseWare champion Hal Abelson taking a sabbatical year at Google in 2009, the conditions are right to help Google identify a significant education effort. Lastly, by early 2009, the planning and exploration phase for a Learning Innovation Fund for Education to foster private/public engagement for technology and learning will be completed. Based on the outcome of this study, we will determine whether the time is right to convene players to share knowledge and technical expertise, thereby resolving the current pull on Hewlett staff to play that role. If we move forward, we seek to attract a minimum of $2.5 million from five entities to launch in 2009.

Intellectual Property

Our highest priority is to continue to raise awareness of flexible copyright allowed under Creative Commons licenses and to simplify the selection of licenses for the content developer and user. To that end, Creative Commons will analyze the benefits and costs of OER branding, including legal and interoperability issues.

Guidelines

When designing guidelines, it is best to impose neither rigid standards nor requirements. The strength of the Web and openness rest on innovation and creativity and the belief that preferred practices will be adopted by the masses. Hewlett sets out to provide best practices for the field to adopt. In 2009, advised by world experts in disability issues from the University of Toronto, toolkits for designing accessible OER sites will be created and disseminated throughout the OER community.

Sustainability

As noted earlier, the issues of sustainability are complex and need to be clearly defined in the Open Educational Resources context. In 2009, we expect Monterey Institute for Technology and Education to reach operational breakeven, the first OER organization to achieve this status. We are also planning to support two sustainability case studies to better understand how differing revenue models work in varying OER projects. During 2009, we expect our strategy consultants to delve deeper into the nuances of sustainable models for content, organizations, and the overall movement.

Research

Open Learning Network (OLnetwork) willbe launched under the leadership of the Open University UK and Carnegie Mellon University. The OLnetwork is guided by one clear mission: building a robust evidence base to support and enhance the design, evaluation, and use of OER. Under that mission are three concrete research-related questions: how do we improve the process of OER reuse/design, delivery, evaluation, and data analysis; how do we make the associated design processes and products more easily shareable and debatable; and how do we build an infrastructure to serve as a collective intelligence for the community? The design and launch of the Open Learning Network is well-timed to address a clear research gap in OER development. A goal for the network in 2009 will be to collect evidence from at least eight research projects and support at least twenty research fellowships.

Metrics

In early 2009, we will expand our metrics pilot so that all grantees can use common metrics. Hewlett sees this as a learning opportunity—both to help OER grantees better engage with their audiences through Web data analysis and for the field to understand the key trends, patterns, and opportunities in OER. In 2008, we tested tracking tools (à la Google Analytics) so we can better understand the kinds of questions we can and cannot answer, individually for each site and in aggregate across the field. Complete metrics will be available by July 2009.

COMPONENT: Demonstrating the Added Value of OER to Teaching and Learning

While high-quality content is now openly accessible, evidence is needed of its impact. OER demonstrations are demand-driven and, as often as possible, use locally developed materials. Demonstrations use the power of the Web to deliver content "any time, anywhere," combined with the flexibility of open materials to be modified and reused. For 2008, we selected three demonstration areas that address specific educational challenges. Each is described below along with progress and goals for 2009.

Games-based Environments for Teaching Complex Materials

To address the worldwide demand for language development and test the ability of highly engaging open environments to increase learning, Hewlett is supporting the development of an openly extensible game. In 2008, Coastline Community College completed development of

twelve episodes of the English learning game for middle school native Chinese speakers and planned the development of a Web-based system for Spanish speakers. OER staff, in conjunction with the Shuttleworth Foundation, initiated a pilot for mobile devices in South Africa. Planning is underway for an evaluation of progress made by middle school students in the western provinces of China, to be supported by the U.S. Department of Education.

In 2009, Coastline Community College will pilot twelve episodes of the English learning system for native Chinese speakers in twenty middle schools selected by the Chinese Ministry of Education, have 50,000 downloads through other distribution channels, and complete all twenty-four episodes. The U.S. Department of Education will begin a randomized evaluation study of the Chinese/English version; the Spanish version will be completed and engage at least 50,000 users by the end of the year.

Open Textbooks/Courses

In 2008, the Foothill-De Anza Community College District Open Textbook project was launched to support the production and use of high-quality, accessible, and culturally relevant open textbooks for community college students. In combination with the recently launched Community College Consortium for Open Educational Resources, the project provides an opportunity to dramatically lower the cost of attending college for millions of future students while using new technologies to improve teaching and learning. In summer 2008, the project released the first open textbook prototype for the subject of statistics with adoption by 100 faculty reaching over 5,000 students. In 2009, three or more open textbooks will be under development and new textbook innovations piloted, including multimedia and embedded formative assessments.

As both textbooks and courses are developed in digital formats, the line between the two begins to blur. When does an open textbook become a course and when is an open course a textbook? The initial response to Yale Open Courses and the launch of eight additional courses in October 2008 has been tremendous. In 2009, OER staff will add open courses to this demonstration cluster as we plan and pilot the algebra course for California students and launch the Gates/Hewlett developmental math course initiative for Community College students. In both cases the content will push the edge of course design to be flexible, open, and contain embedded assessments. The current economic downturn and budget tightening provides the opportunity for technology to emerge as both an efficient and effective solution.

Research and Development of Open Participatory Learning Environments

Hewlett supported a cluster of grants in 2008 that demonstrate the power of the Web to engage, motivate, and stimulate learning in ways unique to open online environments. The Gulf of Maine Research Institute links middle school classes with professional and citizen scientists in the rigorous collection and analysis of environmental data to monitor Maine's freshwater and coastal ecosystems for invasive species; an evaluation of its impact on teaching and learning is underway. OER also partnered with Microsoft in the launch of its Worldwide Telescope (250,000 users per day), which amasses images from telescopes and satellites to provide a

comprehensive interactive view of our universe. With Microsoft, staff worked to assess how classroom teachers could integrate this tool into their class studies.

Carnegie Mellon University has designed a series of courses that use intelligent tutoring systems, virtual laboratories, simulations, and frequent opportunities for assessment and feedback to put together dynamic, flexible, and responsive instruction that fosters learning. This spring, a randomized study of the online statistics course found that students significantly outperformed traditional face-to-face students in half the time. Additional studies are under way for 2009.

A grant to Open Learning Network will support a critically needed infrastructure research hub designed to support sharing evidence of the effectiveness of OER on teaching and learning. Given the emergence of this research hub, OER staff recommend the open participatory learning demonstration cluster be included in the Open Learning Network in 2009.

Demonstration Clusters in 2009 and Beyond

When conceptualizing the demonstration areas in Phase II of OER, we planned three clusters for 2008 with an additional area to be added in 2009 focused on teacher training. Projects we have been nurturing include Teacher Education in sub-Saharan Africa and the Teachers Without Borders/Scholastic Inc. partnership. In March 2009, Scholastic will launch Teacher Share, an open site to create and remix lesson plans targeting Scholastic's extensive K-12 teacher network.

OER in Health emerged as a potential demonstration cluster in 2008. To date, OER staff have tried to minimize our level of activity in this area until we analyze where and how Hewlett can best use its resources at this stage of OER development.

COMPONENT: Serving Bay Area Communities

In 2008, Hewlett's resources supported two regional OER efforts. Under a planning grant, Silicon Valley Education Fund is assessing the conditions for open source solutions as an option for educators in the Bay Area. While the early concept was strong, and the planning process is not yet complete, OER staff are finding the design phase to be uneven. We will continue to track the progress of this grant to determine whether to support the next phase.

Our second regional grant was a renewal grant to One Economy. Two years ago, One Economy developed and launched Zip Road (www.ziproad.org), an open, online bilingual destination for educational resources for parents of K-12 school-age children. Its primary target is low-income families in the San Francisco and San Jose areas. Zip Road supports students and parents, especially immigrants who find the current educational system hard to navigate, by making the process easy for parents who want to open the doors of educational opportunity, but lack the knowledge on how to get started. With this grant, Hewlett has brought the global mission of equalizing access to high-quality content and knowledge home to the Bay Area.

Plans for 2009: Continue to explore opportunities to bring OER to disadvantaged communities in the San Francisco Bay Area.