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HIGHER EDUCATION SOLUTIONS NETWORK - QUARTERLY REPORT

Massachusetts Institute of Technology—MIT
Comprehensive Initiative on Technology Evaluation (CITE)
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Acronyms

CII	Center for Accelerating Innovation and Impact
CITE	Comprehensive Initiative on Technology Evaluation
CTL	Center for Transportation and Logistics
DUSP	Department of Urban Studies and Planning
ESD	Engineering Systems Division
HESN	Higher Education Solutions Network
IDC	International Development Conference
IDIN	International Development Innovation Network
IST	Information Services and Technology
MIT	Massachusetts Institute of Technology
MOOC	Massively Open Online Course
MOU	Memorandum of Understanding
M&E	Monitoring and Evaluation
OAA	Office of Acquisition and Assistance
ODL	Office of Design and Learning
OSP	Office of Sponsored Programs
OST	Office of Science and Technology
PSC	Public Service Center
RA	Research Assistant
SSRC	Sociotechnical Systems Research Center
SUTD	Singapore University of Technology and Design
TA	Teaching Assistant
TOR	Terms of Reference
UNICEF	United Nations Children's Fund
UROP	Undergraduate Research Opportunities Program
USAID	United States Agency for International Development
WFP	World Food Programme

Executive Summary

This Quarterly Report details CITE's Year One, Quarter Three (Y1Q3) objectives, activities and results. Y1Q3 objectives focused primarily on creating and sustaining the environment within which CITE's faculty, staff and students can achieve the program goals, while at the same time taking steps towards refining CITE's evaluation methodology. To further our progress in program management, our Year 1 Workplan was finally approved by USAID. The highlights for Y1Q3 were the recruitment and implementation of our summer internship program; a two-day high-level meeting between USAID and MIT; the preparation for our summer field research; and the continued refinement of our product evaluation methodology.

In keeping track of our Objective 1: Develop CITE's Institutional Structure including strong relationships with USAID, the HESN and partner development organizations, CITE hosted a two-day high-level meeting between USAID and MIT on May 13-14, 2013. On the evening of the first day, Dr. Alex Deghan, the Science and Technology Adviser at USAID spoke on "*The Future of Science & Technology in International Development*" with an introduction by MIT Chancellor Eric Grimson. The campus-wide event attracted over 200 people. In addition, CITE developed a CITE WebCITE wireframe with a target for a light version of the website by the end of September 2013; and partnered with the Office of Digital Learning in announcing a post-doc position to lead in the development of an edX course.

The milestones for our Objective 2: Develop and apply the CITE "3-S" evaluation methodology through research involving case studies, courses, fieldwork, analysis and modeling during Y1Q3 were the creation of a case study template for our summer interns to use; the deployment of our Suitability and Sustainability teams to Uganda to field test and refine product evaluation methodologies; and the Suitability team in Cambridge conducting the first product family evaluation on solar lanterns in the lab. The Scalability team developed preliminary supply chain mapping techniques and technologies.

The milestones for our Objective 3: Build a vibrant academic community (courses, students, faculty and staff) dedicated to technology evaluation for development during Y1Q3 included the completion of the CITE Seminar course: *ESD.S20/11.S941: Evaluating Technologies for the Developing World*, which comprised 24 registered students. Representatives from USAID/OST/HESN attended the last day of the *ESD.S20/11.S941* class, which also featured the final class presentation. In addition, CITE recruited and placed 10 MIT undergraduate and graduate students in with partner organizations in Boston, Washington, DC, Denmark, and Indonesia for the CITE-PSC internship, started the CITE semi-monthly research meeting and added Jonars Spielberg as a member of the Suitability team in their research.

Beyond these foundational activities, CITE continues to collaborate and align our work with the International Development Innovation Network (IDIN) to leverage the USAID cooperative agreements into a larger, campus-wide initiative for international development research at MIT in partnership with USAID, MIT Senior Administration, MIT Resource Development.

Part I: Major Milestones and Events Completed

I.1. Milestones

Program Management

The architecture for CITE 's responsible financial and program management is now in place: CITE's Year I Workplan was revised and submitted for approval from USAID; CITE has been in frequent communication with USAID/OST/HESN Monitoring and Evaluation coordinators and has submitted the final M&E Plan for approval; and quarterly reports have been sent to USAID according to the timeline provided by the agency.

Objective 1: Develop CITE's Institutional Structure including strong relationships with USAID, the HESN and partner development organizations

To leverage cost sharing and tap into the expertise of MIT's Office of Digital Learning (ODL), a post-doc position to lead in the development of an edX course was announced. ODL agreed to fund the salary and office space for the edX post-doc. The job announcement has been posted in over a dozen employment websites, including MIT, Indeed.com and Glassdoors.com.

CITE hosted a two-day high-level meeting between USAID and MIT on May 13-14, 2013. The USAID delegates, Dr. Alex Dehgan, Dr. Ticora Jones, and Dr. Amit Mistry from USAID's Office of Science and Technology, Higher Education Solutions Network met with MIT President Rafael Reif and other high-level MIT faculties. Side meetings were arranged with core members from CITE and IDIN teams. Dr. Alex Dehgan, the Science and Technology Adviser to the Administrator and Director at USAID gave a keynote speech in the evening of May 13th with over 200 people from MIT and the community in attendance.

The CITE website will be one of the main communication tools that CITE uses to engage the larger development community and to spread the word about its work. MIT's Information Services & Technology (IST) is working with CITE in developing a website and helping to tender the designers for the website and CITE identity logo. We are currently in the final stages of developing the CITE graphic identity and are planning a website launch in fall 2013.

Objective 2: Develop and apply the CITE "3-S" evaluation methodology through research involving case studies, courses, fieldwork, analysis and modeling

Case study development

The entire CITE team developed a Case Study Template for summer interns to use. It consisted of a clear process, suggestions on how to conduct empirical research as a basis for theory building, and a template for their final deliverable. Case studies are one of the main tools CITE will use for understanding what has and hasn't worked in testing, implementing and supporting products in the developing world.

Suitability Testing Development

This quarter the suitability team started the first product family evaluation focusing on the technical and user testing of the various solar lighting options available in the Ugandan marketplace. Our technical team consists of graduate students, Amit Gandhi, Victor Lesniewski and Chris Pombrol; Professor Dr.

Dan Frey; Former Technical Director and Vice President of Consumer Reports and current CITE advisor Dr. Jeffrey Asher; and CITE Associate Director Derek Brine. The goal of our study is to create a comparative evaluation that would be useful for practitioners trying to decide between purchasing various lantern models.

Toward these ends we have taken the following steps:

1. Reviewed existing testing methods for solar lighting options;
2. Developed a set of field information gathering protocols based on initial work done by Amit Gandhi in Ghana;
3. Purchased and instrumented 50 lanterns with accelerometers, voltage and current sensors and data logging equipment;
4. Developed a set of lab testing protocols
5. Developed a sensory testing panel protocol

Scalability team:

The Scalability team developed some preliminary supply chain mapping techniques and technologies. They were tested on one of the detailed CITE Scalability case studies and on some related work with WFP on food commodities in Sudan.

Sustainability team:

There has been an extensive effort by the Sustainability team to prepare for the summer fieldwork, in Uganda. This preparation includes handling of all contact and scheduling with the DIV partner Solar Sister, drafting of research plans and protocols, COUHES certification and training by all members of the team, handling of all logistics, and meetings with the Suitability team to align the efforts during the field work in Uganda.

Objective 3: Build a vibrant academic community (courses, students, faculty and staff) dedicated to technology evaluation for development.

The ESD.S20/11.S941: Evaluating Technologies for the Developing World class, with 24 total participants, of which nine were non-registered students (Attached as Appendix I course syllabus and Appendix II: student membership) ended on May 13, 2013. The four class teams gave their final presentation to the class, where Alex Dehgan, Ticora Jones and Amit Mistry from USAID were in attendance.

CITE-PSC internship: In preparing for summer programming, CITE and the Public Service Center (PSC) announced a call for applications for USAID Community Partner Interns and USAID Program Development Interns (<http://web.mit.edu/mitpsc/whatwedo/cite-psc/index.html>) in late March 2013. CITE-PSC received 21 applications, and selected six undergraduates and five graduate students for placement in Boston, Washington, DC, Denmark, and Indonesia with our partners starting in June.

CITE Summer Research semi-monthly meeting series began on June 20th with a kickoff meeting highlighting the two teams (Suitability Team and Sustainability Team) leaving for Uganda in July to work on solar lanterns (presentation attached).

Recruitment of additional faculty and staff: The Sociotechnical Systems Research Center recruited and hired a new staff, Jonars Spielberg as a member of the Sustainability Team and their research. Doug Fearing, Assistant Professor at Harvard Business School, agreed to actively participate as a member of the CITE Scalability team.

1.2. Events

In order to better align and coordinate the CITE's efforts, weekly meetings with the program managers and staff have been instituted. In addition, a monthly meeting with all key personnel and the RAs from the CITE program has been established to track progress of the deliverables as described in CITE'S workplan.

The CITE seminar course, ESD.S20/11.S941 Evaluating Technology for the Developing World met weekly on Mondays from 3:30 – 5:00, the last class was on May 13, 2013. Of note during Q3, on May 6th CITE conducted a session on MIT International development Ecosystem where J-Pal, Tata Center, Legatum Center presented. For the final class presentation on May 13, 2013, Dr. Alex Deghan, Dr. Ticora Jones and Dr. Amit Mistry from USAID attended first-half of the session.

On April 13 2013, CITE hosted a booth at the MIT International Development Night (IDNight). More information can be found in Part 3.3 under student engagement.

On June 3, 2013, CITE-PSC Internship Program had a half-day Internship kick off meeting where the student interns and staff attended a session of logistics and explanation of case-study development.

In June Professor Dan Frey traveled to Indonesia and met with Kopernik and with the USAID mission in Jakarta (Ali Dougherty). As a result of this meeting CITE is exploring how our next product evaluation could be conducted in collaboration with USAID in Indonesia and in partnership with Kopernik.

1.3. Publications

CITE Program team is in the process of developing white papers for possible evaluation methodologies for suitability, scalability and sustainability.

1.4. Communications

The following tables highlights where CITE has been featured:

Date	Source	Media	Title/Link
May 2013	BNID website	Website	Announcement of Dr. Alex Deghan's lecture on Boston Network for International Development website: http://bnid.org/node/9442
May 2013	Facebook: various sites	Website	Announcement of Dr. Alex Deghan's lecture on Boston Network for International Development website: MIT IDEAS Global Challenge: https://www.facebook.com/mitglobalchallenge/posts/10100313000421644 D-Lab: https://www.facebook.com/events/520201248045448/ SOCENTech https://www.facebook.com/socentech/posts/586772458008060
April 20- May13	MIT campus	Posters, video banners	Dr. Alex Deghan's lecture advertisement was posted throughout the MIT Campus

Part 2: Description of Key Activities

2.1. Quarter Objectives

Objective 1: Develop CITE's Institutional Structure including strong relationships with USAID, the HESN and partner development organizations

Objective 2: Develop and apply the CITE "3-S" evaluation methodology through research involving case studies, courses, fieldwork, analysis and modeling

Objective 3: Build a vibrant academic community (courses, students, faculty and staff) dedicated to technology evaluation for development.

2.2. Summary of Key Activities

As indicated in Part I.1 Milestones, the architecture for responsible financial and program stewardship is in place. CITE's Year I Workplan was revised and submitted for approval from USAID; CITE has been in frequent communication with USAID/OST/HESN Monitoring and Evaluation coordinators and submitted the final M&E Plan for approval; and quarterly reports have been sent to USAID according to the timeline provided by the agency.

Objective 1: Develop CITE's Institutional Structure including strong relationships with USAID, the HESN and partner development organizations

The CITE website will be one of the main communication tools that CITE uses to engage the larger development community and to spread the word about its work. MIT's Information Services & Technology (IST) is working with CITE in developing a website and helping to tender the designers for the website and CITE identity logo. To date, a wireframe has been developed. CITE is exploring a possible partnership with another similar organization to create a new, improved web portal that product users and international development practitioners can consult for superior information and evaluations on product options for those living in poverty.

A design RFP was tendered and Alphabetica, LLC was selected to design the CITE graphic identity/logo. An exploration meeting was held on May 23, 2013, and on June 13 Alphabetica presented CITE with six sample logos. Feedback was provided, and Alphabetica will present CITE with a second version of logos in July 2013.

Objective 2: Develop and apply the CITE "3-S" evaluation methodology through research involving case studies, courses, fieldwork, analysis and modeling

Suitability Testing Development

This quarter the suitability team started the first product family evaluation focusing on the technical and user testing of the various solar lighting options available in the Ugandan marketplace. Our technical team consists of graduate students, Amit Gandhi, Victor Lesniewski and Chris Pombrol; Professor Dr. Dan Frey; CITE advisor Dr. Jeffrey Asher; and CITE Associate Director Derek Brine. The goal of our study is to create a comparative evaluation that would be useful for practitioners trying to decide between purchasing various lantern models.

Toward these ends we have taken the following steps:

- I. Reviewed existing testing methods for solar lighting options

A careful review of existing testing methods helped to inform our team of where they were lacking and how we can add value.

2. Developed a set of field information gathering protocols based on initial work done by Amit Gandhi in Ghana

One of the students on the project, Amit Gandhi, conducted an initial pilot study of solar lighting products in Ghana as part of his Master's thesis research. This involved interviewing users about their usage patterns and gathering information about the activities for which the products are used. Our current research team leveraged that knowledge in developing our test methods for solar lighting in Uganda by using his findings as background for user interviews and protocol development.

3. Purchased and instrumented 50 lanterns with accelerometers, voltage and current sensors and data logging equipment

Our research team purchased and instrumented 50 solar lighting products to take with them to the field for gathering real user data to assist in our comparative evaluation of solar lighting products in Uganda. The two models selected were those that were most popular with Solar Sister buyers: the d.light S20 and the Barefoot Firefly Mobile. These instrumented lanterns will be distributed to solar lighting users for a period of two weeks and will record data useful in discerning their use pattern. This includes when the lights are on, off or charging and whether they are moving during use. We will then use this data to help in a weighting for providing scores for solar lighting products in various performance categories measured in the lab and by a sensory testing panel.

4. Developed a set of lab testing protocols

Our team will not only gather information about the usage profile of solar lighting products in the field but will also characterize and test the products in the laboratory. This includes their charging profile, time to discharge (usable light), and resistance to water damage.

5. Developed a sensory testing panel protocol

Beyond technical testing, our team is also focusing on the interaction between solar light models and their users. We will be consulting with a sensory panel testing expert and an ophthalmologist to develop a series of tests to gauge user's performance in the light of various solar lantern models as a way of differentiating between their usability. These may be modified versions of standard eye tests, such as the Snellen Eye Chart or Ishihara Color Blindness test as well as performance on simple tasks such as reading, sorting or completing puzzles.

In the process of developing the test methods, we have identified a set of organizational protocols to put in place.

Product Pedigree: Developing a set of protocols for ensuring that models purchased are properly marked, labeled, and sourced.

Market Studies: Most important to our future method is finding a way to conduct a thorough market analysis prior to starting an evaluation to determine the most prevalent models available in a marketplace.

Sensory Panel Development: Integrating sensory panels into our testing will be a significant component of user testing as we develop our methodology.

Use of Experts: The CITE suitability team will develop a reliable cadre of experts from which to draw in order to inform the development of laboratory and sensory testing. By tapping the MIT Alumni Network.

We hope to use this initial test to formalize our suitability test methodology by incorporating it as an example in our white paper.

Scalability team:

The Scalability team developed several types of case studies. An RA assembled several brief case studies to explore several product areas (see the document *scalability brief case studies.pdf* in Annex). Faculty and researchers reviewed these brief case studies at the end of the semester to identify promising research directions and products to investigate. A more detailed case study, supply chain mapping and preliminary analysis was developed for a diarrheal treatment kit (ORS-Zinc) currently under pilot in Zambia by ColaLife. ColaLife is interested in continuing this work in the summer/fall to complete a detailed scalability evaluation. Jarrod Goentzel developed a teaching case focused on scalability of ready to use therapeutic food (RUTF) with UNICEF.

The Scalability team also developed some preliminary supply chain mapping techniques and technologies. They were tested on one of the detailed CITE Scalability case studies and on some related work with WFP on food commodities in Sudan. Researchers also developed a detailed list of questions to be used by summer interns in developing their case studies. The case studies will be used to add details to a preliminary outline of the Scalability Concept Paper to form a complete draft in September.

Sustainability team:

There has been an extensive effort by the Sustainability team to prepare for the summer fieldwork, including handling of all contact and scheduling with the DIV partner Solar Sister, drafting of research plans and protocols, COUHES certification and training by all members of the team, handling of all logistics, and meetings with Suitability team to align the efforts during the field work in Uganda.

The team has a draft version of a white paper; however, they have postponed the finalization until after the summer field work and subsequent analysis and modeling effort since it will have a direct impact on the content of the white paper. Expected completion date is December 13, 2013.

Objective 3: Build a vibrant academic community (courses, students, faculty and staff) dedicated to technology evaluation for development.

Five graduate research assistant (RA) and one teaching assistant (TA) were hired to support the work of CITE and ESD.S20/11.S941 seminar. Beginning June 1, nine new RAs were recruited to begin work with the CITE Program.

As mentioned in Part I.1 Milestones, the ESD.S20/11.S941: Evaluating Technologies for the Developing World class, which commenced on February 11, 2013 with 24 total participants, of which nine were non-registered students ended on May 13, 2013. The four class teams gave their final presentation to the class, where Alex Dehgan, Ticora Jones and Amit Mistry from USAID also attended on the last day of the seminar.

CITE-PSC internship: In preparing for summer programming, CITE and the Public Service Center (PSC) announced a call for applications for USAID Community Partner Interns and USAID Program Development Interns (<http://web.mit.edu/mitpsc/whatwedo/cite-psc/index.html>) in March 2013. Despite the late announcement for the CITE-PSC internship (most Summer internship are announced in December of the previous year), the response was positive: CITE-PSC received over 100 requests for

applications, and 21 applications were received. CITE and PSC selected five undergraduates and five graduate students for placement in Boston, Washington, DC, Indonesia and Denmark with our partners: USAID/Global Health, Kopernik, Mercy Corps and UNICEF. One of the MIT-USAID/GH interns blog post can be viewed on the PSC website: <http://mitpsc.mit.edu/blog/current-summer-13-rafa-rahman/#>.

On April 13, 2013, MIT hosted International Development Night (IDNight) in collaboration with the Harvard International Development Conference (IDC). The event brings a host of diverse audience interested in international development to share ideas and learn about MIT international development technologies and projects. CITE hosted a booth at this two-hour social and informal information session. Over 400 people, including students from MIT and other neighboring universities took part in the Harvard IDC.

CITE Summer Research semi-monthly meeting began on June 20th with a kickoff meeting highlighting the two teams (Suitability Team and Sustainability Team) leaving for Uganda in July to work on solar lanterns (presentation attached). The following are the dates for the semi-monthly summer research meetings: June 20, July 11, July 25, August 8, and August 22.

On June 3, 2013, CITE-PSC had a half-day orientation where the student interns and staff attended a session of logistics, overseas pre-departure information and explanation of case-study development. An MIT Stellar site was created for the groups for sharing documents, travel info and communication.

Recruitment of additional faculty and staff: The Sociotechnical Systems Research Center recruited and hired a new staff, Jonars Spielberg as a member of the Sustainability Team and their research. Jonars was enrolled in the ESD.S20/11.S941: Evaluating Technologies for the Developing World class and was already familiar with the content of CITE.

Doug Fearing, Assistant Professor at Harvard Business School, agreed to actively participate as a member of the CITE Scalability team.

Part 3: Intra-Development Lab/University Engagement

3.1. Interdisciplinary Collaboration

As highlighted in Part 1.1, collaboration has been initiated with the MIT Public Service Center (PSC) to create CITE-PSC internships. The USAID Community Partner Interns are graduate or undergraduate students who will serve as summer interns with CITE partner organizations, such as USAID, Mercy Corps, UNICEF, and Kopernik. Cambridge-Boston and Washington, DC paid internships may be full-time or part-time for 10-12 weeks during the summer. The work will provide support for CITE's organizational partners in Indonesia and Uganda. Full-time internships for 4-6 weeks are also available in Indonesia. Travel, accommodations, and living expenses will be covered through an internship stipend. The USAID Program Development Fellowship will offer graduate and undergraduate students the chance to become part of the CITE program development team. Students will work on campus with CITE staff and faculty to develop and implement programming that engages MIT students and others in CITE's work, which may include a conference, lectures, web site, and more. A call for application yielded 21 applicants by April. A total of ten students were selected as a CITE-PSC intern (please see Part 3.3 student engagement for more information). US-based and overseas internships will begin in June and will end by late August.

3.2. Partner Engagement

As part of the extension of the ESD.S20/11.S941: Evaluating Technologies for the Developing World class, there were two class debrief and presentations to our partners. On May 17, 2013, eight students from the ESD.S20/11.S941 class and the Scalability lead, Jennifer Green made a trip to Oxfam America's headquarters in Boston's North End to present their findings and recommendations from their research. Three of the projects from the class were presented: Biomass Cookstove; DelAgua Water Testing Kit; and the Nazava Water filter. On June 13, 2013, the student team presented to Kopernik, Indonesia's field and project officers via SKYPE from Boston on their findings and recommendations on the Nazava Water Filter. In the audience were Professor Dan Frey at Kopernik, Indonesia and Derek Brine SKYPEing in from Boston.

CITE is currently working to develop a strategy for working with both existing and new partners. Through our interactions with our current partners it has become evident that a clear engagement model is essential to a healthy and productive relationship. Such a model will outline the roles and responsibilities of both CITE and the organizational partner and spell out expected outcomes in detail. Our model will be flexible enough to accommodate the individual needs of each partner, but at the same time will establish a baseline for our each working relationship. We hope to develop this model over the next six months.

To that end, key CITE personnel and faculty have made trips to visit with Kopernik, UNICEF and WFP. In-depth, in person conversations with these partners have helped to identify promising areas of collaboration and approaches to structuring the relationship. For example, UNICEF has identified several promising internal organizational units with whom to engage. These include the Innovation Unit, the Quality Assurance Centre, the Health Technology Centre, the Medicines & Nutrition Centre, Procurement and Supply Chain Optimisation and Strengthening. A promising group to engage with WFP is the Internal Review Committee, which evaluates products that are used in its programs. Finally, Kopernik has identified several promising technologies to evaluate in Indonesia and we are working with them to further explore the possibility of conducting an in-depth technical evaluation with them.

CITE proposes the following four levels to engage partners as part of our partner engagement strategy:

1. Development of individualized partnership agreements with each NGO
2. Signing of a standard Memorandum of Understanding (MOU) to define the general conditions and Terms of References (TORs) to outline roles in specific collaboration activities. NOTE: MOUs were actively in progress with WFP and UNICEF, and TORs were developed for summer interns with UNICEF, Mercy Corps, and Kopernik.
3. Formation of an NGO consortium to support select CITE activities
4. Working with partners to raise outside funding for specific evaluation projects

Each of these models has its own advantages and drawbacks. For instance, if CITE evaluates products that an NGO is currently uses and finds them technically unsuitable, that information may be difficult for that NGO to act upon. In addition, if CITE goes after specific funding opportunities with its partners, it must find a way to remain independent. The model we develop must address these and other issues.

To that end, an important component of partner engagement includes in-person and online meetings. CITE currently is planning a roundtable meeting with core partners and a broader conference inviting active and potential partners later in the academic year. Both of these events will happen in Year 2 (October 2013 – Sept. 2014).

Beyond developing our partnership model, several new efforts were initiated to engage new organizations in CITE's work:

- CITE leaders met with the Executive Director of the MIT Industrial Liaison Program (ILP), which is dedicated to creating and strengthening mutually beneficial relationship between MIT and corporations worldwide. Plans were outlined to engaged the liaison officers who work with the 190 companies involved in ILP and to create a conference that would actively engage the private sector in CITE efforts.
- CITE presented its project at the annual partner meeting for the MIT Center for Transportation & Logistics (CTL); CTL has 45 partner companies.
- The CITE Scalability team established a new partnership with MGH's Center for Global Health and was successful in receiving a CAMTech Innovation Award, which is designed to provide one year of development/commercialization support for an innovative medical technology that can significantly improve health in low- and middle-income countries. Active discussions are underway to identify how to align the CAMTech work with CITE efforts.
- Two CITE-PSC program development interns have been working closely with CITE staff to begin planning of a partner workshop at MIT designed to bring the CITE partnership model into focus.

3.3. Student Engagement

As mentioned in Part 2, on April 13, 2013, MIT hosted International Development Night (IDNight) in collaboration with the Harvard International Development Conference (IDC). The event brings a host of diverse audience interested in international development to share ideas and learn about MIT international development technologies and projects. CITE hosted a booth at this two-hour social/information session. Over 300 people, including students from MIT and other neighboring universities took part in the Harvard IDC.

As mentioned in Part 1.1, ESD.S20/11.S941: Evaluating Technologies for the Developing World, a weekly seminar with 15 registered students and 9 non-registered students in attendance ended on May 13, 2013. The course consists of a series of lectures, discussions and presentations by MIT faculty and staff, CITE's partners and the students themselves, each designed to build upon the CITE evaluation method or to provide practical context and background for MIT researchers. In addition CITE has benefitted extraordinarily by having Dr. Jeffrey Asher, Former Technical Director and Vice President of Consumer Reports, as an advisor to the class and the teams.

Students in the course worked with MIT faculty and staff and produced an in-depth evaluation proposal for a product or technology identified in collaboration with one of CITE's partners (please see below). The students worked with those partners to map their product evaluation needs.

Partner	Product	Location
Kopernik	Biomass Cookstove	Indonesia
Kopernik	Nazava Water Filter	Indonesia
Mercy Corps	Tofu Vacuum Cooker	Indonesia
Partners In Health	Medical Waste Incinerators	Haiti
Oxfam, USA	DelAgua Water Testing Kit	

CITE Summer 2013 Internship and RA travel

Name	MIT affiliation	Destination	Dates	Purpose
International				
Sara Lynn Hess	MIT Graduate Student	Denmark	6/16-7/14	To work with UNICEF Procurement office and develop case studies on supply chain process

Name	MIT affiliation	Destination	Dates	Purpose
CIITE-PSC Intern	Masters in Urban Planning			
Abir Liben CIITE-PSC Intern	MIT 2nd year Undergraduate Major: Urban Studies & Planning	Indonesia	7/2-8/1	To work with Kopernik in identifying comparable products utilized by Kopernik and develop case studies.
Ting Mao CIITE-PSC Intern	MIT 4 th year Undergraduate Major: Economics and Management Science	Indonesia	7/4-8/1	To work with Kopernik in identifying comparable products utilized by Kopernik and develop case studies.
Tessa Skot— RA	MIT Graduate Student Masters: Mechanical Engineering	Kenya, Uganda	6/28 - 8/7	To attend WEDC Conference in Nakuru, Kenya. To work with Solar Sisters (USAID/DIV partner) to implement field evaluation; interface with USAID mission, HESN partners and other stakeholders; identify comparable products available in-country and obtain samples; map product distribution network using handheld GPS and Google Earth; do capacity mapping of Solar Sisters and develop list of needed/desired training opportunities; document field work with daily blogs, photos, videos, etc..
Amit Gandhi— RA	MIT Graduate Student	Uganda	7/6 – 8/7	To work with Solar Sisters (USAID/DIV partner) to implement field evaluation; interface with USAID mission, HESN partners and other stakeholders; identify comparable products available in-country and obtain samples; map product distribution network using handheld GPS and Google Earth; do capacity mapping of Solar Sisters and develop list of needed/desired training opportunities; document field work with daily blogs, photos, videos, etc..
Victor Lesniewski— RA	MIT Graduate Student	Uganda	7/6 – 8/7	To work with Solar Sisters (USAID/DIV partner) to implement field evaluation; interface with USAID mission, HESN partners and other stakeholders; identify comparable products available in-country and obtain samples; map product distribution network using handheld GPS and Google Earth; do capacity mapping of Solar Sisters and develop list of needed/desired training opportunities; document field work with daily blogs, photos, videos, etc..
Jessica Beth Press-Williams	MIT 1 st year Undergraduate Major:	Indonesia	7/10-8/16	To work with Mercy Corps in identifying comparable products utilized by Mercy Corps and their clients, and develop case studies.

Name	MIT affiliation	Destination	Dates	Purpose
CIITE-PSC Intern	Mechanical Engineering			
Morgan Edwards	MIT Graduate Student PhD: Engineering Systems Design	Indonesia	7/10-8/16	To work with Mercy Corps in identifying comparable products utilized by Mercy Corps and their clients, and develop case studies.
Domestic				
Rafa Rahman CIITE-PSC Intern	MIT Undergraduate Student Major: Biological Engineering, 2Y	USAID/GH Washington, DC	6/3-8/12	To work with USAID/Global Health in identifying comparable products utilized by in developing countries from USAID's product list, and develop case studies.
Bryan Ranger CIITE-PSC Intern	MIT Graduate Student PhD: Health Sciences & Technology	USAID/GH Cambridge	6/3-8/20	To work with USAID/Global Health in cataloguing USAID's product list used in developing countries.
Cauam Ferreira Cardoso RA/CIITE-PSC Intern	MIT Graduate Student PhD: Urban Studies & Planning	CITE-PSC program development Cambridge	6/3-8/31	To work with CITE members in exploring ways to engage the MIT student community; to help in preparation of a partnership meeting to be held at MIT in late fall.
Sydney Beasley CIITE-PSC Intern	MIT Undergraduate Student Major: Civil and Environmental Engineering, 4Y	CITE-PSC program development Cambridge	6/17 - 8/12	To work with CITE members in exploring ways to engage the MIT student community; to help in preparation of a partnership meeting to be held at MIT in late fall.
Elizabeth Resor CIITE-PSC Intern	MIT Graduate Student Master in City Planning	Cambridge	7/10-8/30	To work with a few organizations on case studies focused on scalability.

3.4. Lessons Learned/ Good Practices

Involving our partners in a substantive way (i.e. by having them engaged in student projects and by hosting interns in the summer) has been pivotal in developing relationships with our partners. However, CITE recognizes the importance of developing a more formal partnership engagement model and will be taking steps to define that model in Y1Q4 and Y2Q1.

CITE has also learned that it is extremely important to engage students early in their time at MIT. The timing of the Cooperative Agreement from USAID made it difficult to recruit students and research

assistants for the spring of 2013. At MIT most graduate students already have funding for the year by the September/October, as such we should be in a better position to recruit students in year 2.

Part 4: USAID Engagement

4.1. Interactions

Weekly phone call with USAID/OST/HESN AOR, Dr. Ticora Jones and soon to be CITE's AOR, Dr Amit Mistry has been instituted to help guide CITE faculty with the initial implementation of CITE and aligning CITE's objectives with HESN's results framework. To supplement this weekly guidance, a lengthy phone conversation was conducted with AO contact, Mr. Rod Watson, and USAID/OST/HESN on May 1, 2013 to address outstanding questions regarding our cooperative agreement.

USAID hosted a HESN Development Lab manager's meeting from April 1-3, 2013. Bish Sanyal, Derek Brine, Jarrod Goentzel, and Jennifer Green participated in all or part of the three-day meeting. The following is a summary of the possible collaboration that were discussed with USAID:

CITE lead	Partner (USAID) name/contact	Possible collaboration	Timeline
Derek Brine, Jennifer Green	USAID/DIV: Armand Lanier, Peter Khaemba	Looking for DIV partner that MIT can collaborate on conducting evaluation	Summer 2013

The following is a summary of the interactions with USAID:

- May 13-14, 2013: Alex Dehgan made visit to MIT with his UDAID/OST/HESN team
- June 17, 2013: Amit Mistry, CITE's AOR was at MIT in June and the CITE team had a in-person session to review programmatic issues.
- June 24, 2014: Bryan Ranget, MIT PhD Graduate student working with USAID/Global Health made a one-day trip to USAID/Washington to meet USAID/Global Health Center for Acceleration Innovations and Impact team, and align with the other MIT student intern working with USAID/GH.
- June 3-August 8: Rafa Rahman, MIT undergraduate and CITE-PSC intern began her internship with USAID/Global Health's Center for Accelerating Innovation and Impact.

4.2. Lessons Learned/ Good Practices

CITE has learned that it is extremely important to create a clear, streamlined communication channel with USAID. MIT encourages students to be pro-active and empowers them to seek information directly. However, in the case with USAID, CITE will have all students go through CITE's AOR should they need to contact USAID offices bureaus or missions.

Part 5: Collaboration with Other Development Labs

5.1. Interactions

USAID hosted a HESN Development Lab manager's meeting from April 1-3, 2013. Bish Sanyal, Derek Brine, Jarrod Goentzel, and Jennifer Green participated in all or part of the three-day meeting. The following is a summary of the possible collaboration that were discussed with HESN partners:

CITE lead	HESN name/contact	Possible collaboration	Timeline
Derek Brine Jennifer Greens	Makerere University: William Bazeyo	Working with MIT student interns going to Uganda in Summer	Summer 2013
Jarrod Goentzel	MSU	Initial discussion on platform	Summer 2013
Bish Sanyal and Derek Brine	UC Berkeley	MOOC development	Fall 2014

5.2. Lessons Learned/ Good Practices

Face to face meetings are essential to understanding the mission and expertise of each individual labs. Additional efforts (e.g. visiting the labs and the connections made) will expedite collaborations. So too will assistance from USAID in pairing labs working on complementary problems.

Part 6: Monitoring & Evaluation

6.1. Preparation Activities

For this quarter, CITE submitted our final list of goals, objectives and indicators to USAID. We received feedback and incorporated the changes. We also finalized our monitoring and evaluation plan, which includes our indicator reference sheets, our performance monitoring matrix and the narrative. We submitted the full M&E plan at the beginning of the fourth quarter in accordance with the deadline set by USAID.

6.2. Ongoing Monitoring & Evaluation

As for the Year 2 plan, we have submitted our M&E plan and we are awaiting approval from USAID. Once we get approval, we will indicate if there are any other potential issues for collecting the data and what we will do to solve those challenges in the narrative. In Year 2, we will begin to implement the approved plan.

Part 7: Looking Ahead

7.1. Calendar of Events

APRIL 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
April 1-3	USAID Lab Director Convening	Meeting of and networking with all HESN Labs and suitable USAID Bureaus and Centers	USAID/OST staff, other USAID bureaus and centers	
April 13	International Development Night (IDNight)	An mini-conference and social event where interested students and community who are interested in international development can build relationship with MIT programs and student organizations		
April 22	ESD.S20/11.S941 Class: USAID Panel	The Higher Education Solutions Network and the Importance of CITE	Dr. Ticora Jones, USAID/OST, Dr. Lanakila Ku McMahan, USAID/OST Tony, USAID Karen Clune, USAID/GH	
MAY 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
May 13-14	USAID-MIT High Level Meeting	Dr. Alex Dehgan and Dr. Ticora Jones visit to MIT: meetings with MIT President, Provost, Chancellor, Dean, Public Service Center, Resource Development, CITE and IDIN key personnel	Dr. Alex Dehgan, USAID/OST Dr. Ticora Jones, USAID/OST	
May 17	Debrief @ Oxfam, America	Three of the five projects from the class were presented to Oxfam, America by eight ESD class students and the Sustainability lead, Jennifer Green: Biomass Cookstove; DelAgua Water		

		Testing Kit; and the Nazava Water filter		
May 24	CITE Year I review meeting	A half-day session on review of progress to date and outstanding issues/deliverables for YI		
Late May	Visit from MSU	Ajit Srivastava will make a trip to MIT to discuss possible collaboration opportunities between MIT and MSU.		MSU
JUNE 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
Table in 3.3	Student and Faculty field travel (to extend until August)	Travel to partner location (Denmark, Indonesia, Kenya, Uganda) for students to conduct research, evaluate products, create case studies, etc..	<p>USAID is requested to assist in finding student intern placements at USAID field missions.</p> <p>CITE requests that USAID missions be made aware of CITE interns in country placed with other organizations and to look for possible areas for collaboration.</p> <ul style="list-style-type: none"> • USAID/Indonesia • USAID/Washington 	
June 3	CITE-PSC Intern orientation	Half-day session to orient domestic and international interns on 1. Intern responsibilities; 2. Pre-departure paperwork		
June 15-21	Jarrold's trip to Rome and Copenhagen	Meetings with WFP to establish working relationship and define activities to be pursued together in the coming academic year. Meetings with UNICEF to kickoff the student internship (Ms. Sara Lynn Hess) and finalize a partnership agreement documents.		
June 17	Meeting	Face-to-face discussion	Amit Mistry, AOR	
June 20	CITE Semi-monthly Research Meeting	Meeting with CITE faculty/staff and all the RAs and summer interns, having the		

		students presenting their projects and allowing time for problem solving and discussion		
June 24	CITE intern travel to USAID	CITE USAID/GH intern, Bryan Ranger to make a one-day visit to USAID/GH	USAID/GH	
Jennifer Green, Tessa Skot, and Jonars Spielberg		The three-member team from MIT will be traveling to Kenya and Uganda. As part of the summer 3-S evaluation, the CITE Sustainability team will be attending the biennial conference and capacity building workshops of the Water, Engineering and Development Center (WEDC). Thereafter, the team will travel to Uganda, where they will work with Solar Sister to: conduct field work and test the 3S evaluation methodology on solar lightings; and create a capacity mapping of local partners; develop a list of needed/desired training opportunities in the area; network with local universities and HESN partners.		Makerere University
JULY 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
July 12	USAID/India	To meet with USAID/India Mission and meet with Sheila Desai and Nehal Sanghavi, USAID/India Center for Innovation and Partnerships to discuss the development of a new MIT partner university in India and possible collaboration with the Mission with CITE.	Dr. Sheila Desai and Dr. Nehal Sanghavi	
July 17	Private meeting	Jarrod Goentzel and the Michigan HESN team explored areas of collaboration, principles for success of food/agriculture		Michigan State

		programs and discussed some specific suggestions of promising food/agriculture technologies for CITE to consider		
AUGUST 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
August 6	USAID student intern presentation	Rafa Rahman and Bryan Ranger, the USAID/Global health interns will present their findings to the USAID HESN team at a brown bag event	USAID/OST/HESN	
SEPTEMBER 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
Starting 9/11	CITE Seminar	Starting in September, CITE will conduct a weekly seminar to discuss issue and prepare development of Spring 14 course		
OCTOBER 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
10/ 9-11	Bish & Derek	Travel to HESN partner, UC Berkeley to discuss collaboration on MOOC		UC Berkeley
Late October	Travel to USAID	Student and Faculty/staff travel to USAID to present Summer 2013 interns work.	USAID/OST/HESN	
November 2013				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	Development Lab Collaboration
December 2014				
DATES	EVENT	DESCRIPTION	USAID Leadership/ Involvement	

7.2. Description of Future Activities

7.2.1. Milestones

Quarter 4 will proven to be the busiest quarter of Year I with preparation of the student internships, fellowships and field studies taking place. There will be approximately seven students and four faculty/staff traveling abroad starting late June. The majority of our budget will be spent during our final quarter of Year I.

7.2.2. Events

Semi-monthly Research meetings: June 20, July 11, 25, August 8, 22

Weekly meeting with CITE-PSC Program Development Interns: continuing until August 22

Weekly CITE Seminar: Two hour research/discussion meeting focusing on development of CITE activities with CITE faculty, staff and RAs: beginning September 11th, every Wednesdays from 3-5pm.

7.2.3. Publications

CITE plans on producing at least three white papers or journal articles on product evaluation. These papers will solidify our learning from research efforts, class projects and initial product evaluations that we conduct. CITE faculty and staff in each “S” will be responsible for issuing white papers and/or journal articles as appropriate. Each lead researcher will be responsible. The timeline for the three papers are:

Suitability: November 2013;

Sustainability: December 2013; and

Scalability: February 2014.

7.2.4. Communications

CITE’s communication strategy is currently being drafted. Meetings are scheduled with MIT Press and MIT Technology and Culture to explore possible collaboration and venue for creating periodical articles about CITE.

3. Pictures from Alex Dehgan's talk: May 13, 2013 @ MIT



4. CITE-PSC intern field notes: Sara Hess's blog up to June only

Name: Sara Hess

Internship Organization: UNICEF – Supply Division

Organization supervisor's name: Paul Molinaro and Elena Trajkovska

Location: Copenhagen, Denmark

Hours worked this week: 24 Total hours worked to date: 24

Week Number 1: *19 June 2013 to 21 June 2013*

Week 1 Blog Post with Captioned Pictures:

Last Wednesday, I started my CITE-PSC summer internship with the UNICEF supply division based in Copenhagen, Denmark. I was lucky enough to have Jarrod Goentzel, director of MIT's humanitarian logistics lab, join me on Wednesday and Thursday to introduce me to UNICEF employees (many of whom he had worked with in the past) and to help me narrow down the focus of my internship duties and deliverables. On Wednesday and Thursday, Jarrod and I had the opportunity to meet with individuals from UNICEF Supply Division's various centers and units. Through these meetings, we were able to get a good general overview of the many projects underway at the Copenhagen office at present and develop some ideas for ways I could get involved in the organization's work this summer. We were also treated to a tour of UNICEF's warehouse. I had never visited a warehouse before and was impressed by the physical scale of UNICEF's facilities and the level of automation.

In cooperation with my assigned supervisor from UNICEF, Elena Trajkovska, a contract specialist in the malaria division of the Health Technology Center, Jarrod and I decided that I will be working on developing a case study of bed net products and manufacturers with a particular focus on how UNICEF has managed to ensure the quality of the bed nets it procures and scale up its distribution of bed nets over time. Jarrod, Elena, and I also decided that this case study would be the first step towards developing a more broad study of "value for money" and "total cost of ownership" issues related to bed nets.

Overall, my first impression of the UNICEF office is that it will be a great place to be for the next month. It's incredibly diverse with more than 70 nationalities represented among approximately 300 employees in the Copenhagen-based Supply Division. Everyone I encountered in Jarrod and I's meetings on Wednesday and Thursday was genuinely passionate about their job. My team, the malaria unit in the Health Technology Center, has made a genuine effort to make me feel at home. While it's clear to me that the coming weeks are going to entail a lot of hard work, I could not ask for better company or support.

CITE

Comprehensive Initiative on Technology Evaluation @ MIT

CITE-PSC Internship weekly Activity Report

Name: Sara Hess

Internship Organization: UNICEF – Supply Division

Organization supervisor's name: Paul Molinaro and Elena Trajkovska

Location: Copenhagen, Denmark

Hours worked this week: 40 Total hours worked to date: 64

Week Number 1: *24 June 2013 to 28 June 2013*

Week 2 Blog Post with Captioned Pictures:

The second week of my internship at UNICEF Supply Division was all about diving into my research on LLINs. Elena, my supervisor, helped to expose me to a wealth of existing literature discussing LLIN products, supply and value chain issues. I also had the opportunity to improve my understanding of LLIN distribution by sitting in on Elena's weekly team meeting, where everyone in the group provided updates on their work sending LLINs to locations throughout the developing world.

In addition to conducting some desk research on LLINs, I also had the opportunity to meet one-on-one with quite a few members of the UNICEF Supply Division staff. We discussed a whole range of issues related to LLINs including product specifications, quality testing, supply chain, distribution, LLIN suppliers, value for money, and cash flow issues that can impact procurement.

Stuart Turner, who works on quality testing for LLINs, was kind enough to do a brief LLIN "demo" for me, letting me take pictures of the net packaging and the net itself. I was a bit surprised that the net had a sort of weird smell that even sort of crept into my mouth. It was fairly unpleasant. Also, after holding the net in my hands they began to feel tingly. Stuart said that's a pretty common reaction to the pesticides in the net.

Seeing and holding one of the LLINs drove home the point that this is a product that incorporates pesticides, which are fairly unpleasant chemical compounds that can be dangerous in high concentrations. This reminded me that safe disposal of nets is an important issue, though at present there appears to be little literature on this topic and few options for environmentally friendly net disposal.