AITI Rwanda 2011
Public Report

General Timeline & Summary
AITI Rwanda ran for six weeks, from June 13th through July 22nd. The 46 program participants were third-year Computer Engineering and IT students at Kigali Institute for Science and Technology, the host institution. AITI held class or lab for 2 – 3 hours each weekday as part of their overall academic schedule.

Curriculum
The technical curriculum sought to provide students with a foundation for building web and mobile applications through lectures, labs, and the final application design project. The curriculum afforded students the opportunity to master concepts in object-oriented programming using the Python programming language and to develop web applications using the Django web application framework.

The entrepreneurial curriculum did not attempt to fit a mini-MBA into the six-week program, but focused on the innovation processes for developing and testing new business ideas. Lecture topics included were:
- Ideation
- Consumer-centric design
- Identifying opportunities
- Idea and market assessment
- Intellectual property and entrepreneurship challenges in Rwanda
- Financing start-ups
- Marketing and pricing

Lab Set-up
The lab was equipped with 32 computers. The instructors installed Python, Django, and Subversion (SVN) on the machines and encouraged students to submit their work through the SVN file management system for review and feedback from the instructors. In practice, most students preferred to receive feedback directly from their instructors and teaching assistants through one-on-one interactions in the lab.

Students were encouraged to use instructional resources posted on the AITI website and to collaborate with their classmates in order to solve problems that they encountered while working on the lab exercises and their final projects. At times, however, the lack of reliable internet access in the lab was a barrier to students pursuing understanding of the material through self-learning efforts.

Students’ successes and failure with curriculum
*Entrepreneurship*: Ideation and consumer-centric design exercises generated a lot of enthusiasm from the students. They began to embrace the concept that every challenge is a potential opportunity for an entrepreneur, and by the end of the course seemed on
their way to seeing the world through that framework. More challenging was conveying sufficient finance, budgeting, marketing, and general implementation strategies for starting a new business in that amount of time. Post-program meetings and mentorship addressing these areas were crucial to helping the most motivated teams progress.

Technology: The students were presented with the challenge of learning a new programming language and web application framework on an accelerated timeline of six weeks. They gained an appreciation for the value of self-learning and grappling with concepts from lecture in the laboratory environment. The final project competition was a crucial motivator that spurred some students to achieve greater mastery of the technical material, particularly the Django web application framework. Students who did not adequately grasp the Python material from the first three weeks of the course experienced considerable difficulty in developing their application.

Partners
The program was hosted at the Kigali Institute of Science and Technology (KIST) and benefited from the support of Dr. Santhi Kumaran, Jonathan Mwakijele, CEIT Department Head, and Dr. Jeanne Mujawamariya, Rector.

External supporters who have pledged continued support include the Rwanda Development Board (including offering server space for teams) and individuals involved in private sector IT. The Mille Collines Hotel generously gave AITI banquet space for the final event.

Project Specifics
All projects were developed with Django and utilize the AITI-SMS interface. Some teams have already expanded their applications to include web interfaces and are planning to develop a presence in the smartphone market as well.

Getit! - Get-it! helps connect people and restaurants throughout Kigali through mobile phones and the web. Customers can search for restaurants by cuisine and location with a simple text message. Restaurants can use the service to advertise their business.

M’Ahwii - M’Ahwii is using SMS to connect hospitals with their patients and improve access to health care. Patients can request appointments and transfers, receive confirmations, and get notifications and alerts on their mobile phones.

Osca - Osca is a business directory accessible through mobile phones and the web. Osca provides business with an easy way to expand their market reach and allows consumers to obtain information about how to find the goods and services they need.

Turere Neza – Turere Neza provides an essential communication link between secondary schools and parents through an SMS application. Parents can receive notices and request information from secondary schools through text messages.
**Mobile Verification System**- Mobile Verification System (MVS) is an SMS application from the Gihamya Group that is used to verify information and documents. Users can submit text messages using keywords related to the identity of a person or document and receive a response indicating the authenticity of the document.

**Umuhuza Hi-Tech Brokers**- Umuhuza is an SMS-based real estate application that allows customers to search for houses, apartments, and land for rent or for sale with a simple text message.

**Cumbika**- Cumbika seeks to connect real estate buyers and sellers in Rwanda through an SMS application, with a particular focus on students and other young adults.

**Ryoherwa**- The Ryoherwa application allows customers to access restaurant menus quickly and easily via text message.

**Indyonziza**- The Indyonziza application from the FINDiet team offers families the nutritional advice and feedback they need to ensure that their young children grow up strong and healthy. Parents can send a text message containing information about their children's diets and receive instant recommendations over their mobile phones.

**Final event**

The final event was held on Thursday, July 21st from 6 – 9pm at the Mille Collines Hotel. After a networking session, each team gave their elevator pitch and technical demo in front of an audience of approximately 80 people. Attendees included the 46 students and guests from KIST, the Ministry of ICT, the Rwanda Development Board, MTN, Tigo, and private sector IT firms. Judges of the competition were the Permanent Secretary of ICT in the Ministry of ICT, David Kanamugire; founder and CEO of Pivot Access, Maurice Kagame; and Cyprian Kumwaka, Coordinator of the Business Incubation Program at the Rwanda Tourism University College.

The nine teams presented compelling visions for businesses that often spanned beyond Rwanda, and the majority of teams had live demos. Audience members could text a phone number and get an SMS response back, thus illustrating how their technology would work. However, as with any competition, there can only be a finite number of winners.

This year’s AITI winners – based on a mix of judges and audience vote – were:

1. **M-AHWIII**: SMS-based application for scheduling of hospital appointments
2. **GetIt!**: SMS- and web-based applications to help customers find restaurant information and to help restaurant managers market their venues
3. **Turere Neza**: SMS-based application for secondary schools to communicate with parents
Impact
In the four weeks since the program ended, a number of teams have shown significant commitment and progress on their business: at least three teams have already registered their business as official companies in Rwanda; several teams are in conversations with potential investors; four teams have been invited to present their businesses at a major IT meeting in Rwanda; and one student went on to win a competition for young entrepreneurs called Inspire Africa. The winning team from the final competition, M-Ahwii, proceeded to win the People’s Choice Award for a competition sponsored by the Ministry of ICT Broadband Commission Youth Working Group. They will present their work at an international gathering in Geneva, Switzerland, in October 2011.

Personal testimony on our AITI experience

Christina Riechers:
To watch as 46 students progressed in their abilities, confidence, and projects over the course of the program was incredibly rewarding.

Zach Hynes:
The challenge of teaching a class to one’s peers at a foreign university with different standards and expectations is undeniably difficult. The process of adjusting plans to circumstances while maintaining a firm commitment to the underlying course goals is not easy; we all learned valuable lessons within this realm over the course of our AITI experience. At times, it seemed that despite all our efforts, it would not be possible for them to achieve the course goals within the six-week timeframe of the program. We continued to encourage the teams. In the last few weeks of the program, they came in on weekends and dedicated every spare moment to building their understanding of the material and implementing their ideas in code. It was elating and gratifying to watch as each of the nine teams experienced the thrill of sending a text message and receiving a response from their application. These moments are the essence of why teachers teach.

The experience of impacting in some way the lives of students who truly understand the problems and opportunities in Rwanda was one that, in my life and career, goes unparalleled. I eagerly await the opportunity to return.