Course Syllabus

SIT Study Abroad
School for International Training

Toll-free 888 272-7881 | Fax 802 258-3296
studyabroad@sit.edu | studyabroad.sit.edu

Technology, Change, and Innovations

IDST 3005 (4 Credits / 60 class hours)

Fall 2017

(Taught by Local Faculty)

International Honors Program:

Social Entrepreneurship:
Innovation, Technology, Design, and Social Change

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Technology:
The use of science in industry, engineering, etc., to invent useful things to solve problems.
(Merriam Webster Dictionary)

"Dare to Imagine"
https://www.youtube.com/watch?v=QYK_BCgxEK8
(video shown in 2013 at the 10th Anniversary of the Skoll World Forum)

Course Description

In this interdisciplinary course, students will learn about technologies (digital and non-digital) that are being developed, adapted and used in diverse contexts to further innovation and social change. Almost every day we read about a new gadget or some new technology that promises to change the world. Many of these products will certainly do that – but the impact will be greatest for those who can purchase it and already live comfortably. Meanwhile, at the bottom of the pyramid, many people are living with deadly diseases, highly polluted air and water, poor nutrition, widespread illiteracy, outdated tools, and unreliable electricity. *Who* is creating the gadgets or the new technology to change their world? *How*, *where* and *why* are these new products and solutions being developed?

This course will introduce students to sources of such innovative and extreme design and to social entrepreneurs and enterprises successfully using and disseminating these ideas and products. Through guest lectures and rural and urban site visits, students will explore economic, social, historical, geographical, ethical and environmental issues that have led to the creation, adoption and diffusion of certain technologies and the effects these can have on populations at the bottom of the pyramid (BOP) in urban and rural settings. The role of the government in supporting research and development of indigenous technologies and innovation

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

will also be analyzed. Additionally, students will examine the ethical and philosophical implications of technologies in the four different countries and explore the relationships between technology and emancipation, power relations, design, hybridization and benefit-sharing. Some of the questions to be explored include:

- What is understood by technology and innovation in the US, Uganda, India and Brazil?
- Which technologies are part of the global exchange? Which are not?
- What are some indigenous technologies and why, when and where did they emerge?
- How does technology play a role in furthering social change and innovation?
- How are indigenous and digital technologies addressing challenges in education, health, social and financial inclusion, environment and agriculture?
- How might technology improve upon the existing business models of the social enterprises we are visiting and studying?
- What is the relationship between technology and design-thinking or human-centered design?

Learning Outcomes

The *Technology, Change, and Innovations* course comprises 60 class hours of instruction and field experience (4 credits). Upon completion of the course, students will be able to:

- Comparatively examine *how* technology and *which* technologies help innovate for development at the bottom of the pyramid (BOP).
- Compare indigenous technologies and innovations and explain how these are being used, adapted or exported.
- Identify how digital technology can play a significant role in terms ofawareness- building scaling, fundraising and measuring impact for a social enterprise.
- Have knowledge on debates related to: if by increasing access and lowering barriers to entry and innovation, technology has the potential to enable democratization and furthering social change; what are the ethical dilemmas around the technologies; what is the role of the government?

Methodology

This course is organized into country modules. In San Francisco, USA, students will receive an introductory lecture that includes an overview of technology and innovation in the Bay Area and the US. The Uganda, India and Brazil modules will be taught by Local Faculty and students will have assignments given and graded by them. Each Local Faculty member has a unique local background in the scholarship and practice of technology, innovation and social change. The course is augmented by additional guest lectures, site visits, and field activities and is thereby wed to the experiential pedagogy of the program.

Readings

Students are expected to complete all readings specified in the course schedule before arriving to class.

Pre-Departure Readings

Rotman, D. (Oct. 21, 2014). Technology and Inequality. *MIT Technology Review*. Access here:

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

https://www.technologyreview.com/s/531726/technology-and-inequality/

Taylor, E. (1996). T302 Innovation Design Environment and Strategy. Section 1: Invention and Innovation. Block 1 An Introduction to Innovation, Milton Keynes. The Open University, pp. 4-38. Access here: http://www.open.edu/openlearnworks/mod/oucontent/view.php?id=13633&section=1

Course Schedule

This course is organized into an introductory class in San Francisco, USA and three subsequent modules in Uganda, India, and Brazil. See the specific country's program calendar for corresponding dates of class sessions.

SAN FRANCISCO, USA
Guest Speaker: Dr. Morgan Ames

SESSION 1: Introduction to Technology, Change and Innovations

Digital technologies now touch the lives of the majority of the world's population. The promises attached to these technologies – to 'disrupt' tradition, to 'flatten' social inequalities, to usher in a brave new technological world through 'big data' and 'design thinking' – circulate out of the Silicon Valley engineering firms that promote them around the world, retaining power even in the face of evidence that these promises cannot be fully realized.

One of the primary aims of social entrepreneurship is to attempt to make good on these promises - realistically, incrementally, and with an eye to social justice. In order to do so, we will begin by exploring several leading theories behind the success of Silicon Valley, heralded as the birthplace of the technology industry. This success is organizational, fostered by regional networks of cooperation that transcend the 'firm' as it is traditionally understood. At the same time, it is also ideological, elevating 'rugged individualism,' playfulness, and the conviction that technology is a natural force for good in the world. Understanding these theories will equip aspiring social entrepreneurs to better assess and harness the real organizational and rhetorical power of digital technologies.

Required Reading:

- Saxenian, Annalee. "Institutions and the Growth of Silicon Valley." Berkeley Planning Journal, 6(1), 1991.
- Turner, Fred. "Introduction." From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism. University of Chicago Press, 2006.
- Mosco, Vincent. "Myth and Cyberspace" (excerpts). The Digital Sublime: Myth, Power, and Cyberspace. MIT Press, 2005.

Further reading:

- Cutler, Kim-Mai. "East Of Palo Alto's Eden: Race And The Formation Of Silicon Valley." TechCrunch, January 10, 2015.

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

- Toyama, Kentaro. Geek Heresy: Rescuing Social Change from the Cult of Technology. Public Affairs Books, 2015.
- Barbrook, Richard and Andy Cameron. "The Californian Ideology." Science As Culture, 6(1), 1996.
- Matthews, Glenna. Silicon Valley, Women, and the California Dream: Gender, Class, and Opportunity in the Twentieth Century. Stanford University Press, 2002.
- Thomas, Douglas. Hacker Culture. University of Minnesota Press, 2003.
- Winner, Langdon. Do Artifacts Have Politics?
- Saxenian, Annalee. The New Argonauts: Regional Advantage in a Global Economy. Harvard University Press, 2007.

KAMPALA, UGANDA

Local faculty: George Batte

SUMMARY

Sessions in Uganda

Session	Lecture Topic	Key Concepts or Topics
TI 2	Technology Innovation and Change in pre-Industrial Communities	Indigenous technologies, Innovation systems, technology ethics, knowledge sharing, digital technology.
TI 3	Mobile Telephony Technologies for Financial Inclusion	Mobile telephony technologies, financial inclusion, economic development, rural entrepreneurs, technology diffusion.
TI 4	Light for Change: Solar Technology and Innovations in Rural Uganda	Energy poverty, modern energy technologies, per capita energy consumption, global warming.

SESSION 2: Technology Innovation and Change in pre-Industrial Communities

Science and technology was part of Africa's development long before the colonial era. Although currently Africa lags other continents in research and technology development, East Africa still boasts of having the world's oldest record of the human technology of stone tools. Moreover, many Bantu tribes in East and Central Africa had been forging steel since more than 2000 years ago. In medicine, European travelers in Uganda and Rwanda during the 19th century observed Caesarean sections being performed on a regular basis, with expectant mothers being anesthetized with banana wine, and herbal mixtures used to heal the wounds. In textiles, bark cloth made from the Mutuba (Ficus natalensis) tree, has been used by the Baganda in Uganda for over 600 years.

Today, these technologies have been overlooked and fallen into disuse due in part to the abundance of more technically advanced products imported from foreign sources. This has created an innovation gap that makes Africa reliant on foreign technologies to solve most of its problems. The tendency to look for

solutions from others has greatly retarded innovation in the region and hindered development. Most of the continent, especially rural Africa, is trapped in the pre-industrial age characterized by low production, subsistence agriculture, low specialization and limited exposure.

Because of poor knowledge sharing and dysfunctional innovation systems, people are disconnected from new discoveries – even the simple and affordable technologies that may be crucial in transforming their livelihoods. Similarly, technologists remain unaware of the exact needs of the people. Transforming communities requires more active knowledge sharing between technology suppliers and the rural target communities.

In this class, we will explore innovation as an interactive process embedded within a broader institutional context by trying to piece together Uganda's National Innovation System. We will focus on the interactive process in which enterprises in interaction with each other and supported by institutions and organizations – such as industry associations, R&D, innovation and productivity centers, standard setting bodies, university and vocational training centers, information gathering and analysis services, and banking and other financing mechanisms— play a key role in bringing new products, new processes and new forms of organization into economic use.

Students will learn about the National Council for Science and Technology (NCST) to try and understand the gaps in Uganda's Innovation systems and the efforts being made to address those gaps as Uganda tries to transform to middle income status by 2040.

Required Readings:

Lall, Sanjaya, and Carlo Pietrobelli. "National technology systems in sub-Saharan Africa." International Journal of Technology and Globalisation 1.3-4 (2005): 311-342. Access here: http://host.uniroma3.it/docenti/Pietrobelli/publications/Lall%20Pietrobelli%20IJTG%202005.pdf

Suggested Readings:

Siyanbola, W. O., Egbetokun, A. A., Oluseyi, I., Olamade, O. O., Aderemi, H. O., & Sanni, M. (2012). Indigenous technologies and innovation in Nigeria: opportunities for SMEs. Access here: file:///C:/Users/HP/Downloads/Indigenous%20Tech%20in%20Nigeria.compressed.pdf

Oyelaran-Oyeyinka (2007). Innovation in African Development: Case Studies of Uganda, Tanzania & Kenya. World Bank.
Access here:
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.630.5770&rep=rep1&type=pdf

Ecuru, J., & Kawoya, D. (2015). Effective Innovation Policies for Development: Uganda. Global *Innovation Index 2015*, pp. 147-153. WEPO.
Access here:
http://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2015-chapter11.pdf

Government of Uganda (2010). Uganda Vision 2040. Access here:
http://npa.ug/wp-content/themes/npatheme/docuUments/vision2040.pdf

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

SESSION 3: Mobile Telephony Technologies for Financial Inclusion

Lack of access to financial services remains a big hindrance to economic development in Uganda, especially in the marginalized rural areas (where 80% of the Ugandan population lives). With less than 3% of the rural population having accounts in formal banks, most rural Ugandans cannot deposit, save for long-term investments, transfer money or make payments in a safe and formal way.

The focus of this class is to explore how technologies associated with mobile phones are giving rural Ugandans access to financial services that the traditional banking sector has failed to deliver in the past century. Mobile Telephony Technologies (MTT), which have been accepted and adopted by most adults in rural Uganda, are now venturing in the financial sector and are already providing great optimism for boosting financial inclusion in rural Uganda.

We will explore the empowering potential embedded in these technologies, MTT innovations and how MTT has lowered transaction costs for financial services, making them more affordable to populations in rural Uganda.

We will visit a local village bank and experience how innovations in the Mobile Money sector have improved the village bank's ability to keep records of members' transactions, improved the security of the members' savings, eased the process of saving and generally improved the local people's attitudes to saving in general. We will also explore how the changing savings-culture is enabling people to acquire assets and improve their lives and the lives of their family members.

Required Readings:

Hughes, N. & Lonie, S. (2007). M-PESA: Mobile Money for the "Unbanked" Turning Cellphones into 24-Hour Tellers in Kenya. *Innovations*, pp. 63-81. http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/innovationsarticleonmpesa_0_d_14.pdf

Suggested Readings:

Bank of Uganda (2014). Status of Financial Inclusion in Uganda. Access here: https://www.bou.or.ug/bou/bou-downloads/Financial_Inclusion/Report-on-the-State-of-Financial-Inclusion-First-Edition-March-2014.pdf

Donovan, K. (2012). Mobile Money for Financial Inclusion. *Information and Communications for Development,* 61-74. Access here: http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/IC4D-2012-Chapter-4.pdf

The Financial Inclusion Tracker Surveys Project (2012). Mobile Money in Uganda: Use, Barriers and Opportunities. Intermedia. Access here: https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-mobile-money-in-uganda-use-barriers-and-opportunities-oct-2012.pdf

SESSION 4: Light for Change: Solar Technologies and Innovations in Rural Uganda

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Electricity contributes a meager 1.4% of Uganda's energy mix, and with just about 7% of its rural population having access to electricity, Uganda has one of the lowest per capita electricity consumption rates in the world. Rural Ugandans spend a significant proportion of household income on fueling kerosene lamps that provide low quality light expensively, are hazardous, and pollute the environment. The government became aware of this problem and working with various donor agencies initiated several programs to replace kerosene with solar lighting. Despite the increasing demand for solar, the abundant sunshine, a wide variety of solar technologies, together with many projects and policies aimed at increasing access to solar lighting in rural Uganda, the rate of uptake of solar had remained disappointingly low. Available and affordable solar technologies widely used in other countries and successfully piloted in Uganda, had failed to achieve sustainable adoption rates in the rural areas.

In the past 10 years, the social entrepreneurship approach – developing and working with rural entrepreneurs - has sold four times as much solar in rural Uganda as the government and donor agencies managed to provide in the past 35 years; at a fraction of the money invested. This class is concerned with the social entrepreneurship approach that develops entrepreneurial capacity within the targeted rural communities, as a strategy in the diffusion of new technologies. We will focus our attention to the liaison between vendors and rural entrepreneurs, and how it helps vendors realize the unique needs and application requirements of their technologies. We will also explore how digital technology helps this relationship to access and use local knowledge to: increase access to new innovations and technologies for, facilitate democratization of, and further social change within, Uganda's rural communities.

Required Readings:

Da Silva, I., Batte, G. Ondraczek, J., Ronoh, G., &Ouma, C. (2014). Diffusion of Solar Energy Technologies in Rural Africa: Trends in Kenya and the Luav experience in Uganda. 1st Africa Photovoltaic Solar Energy Conference and Exhibition, Durban, South Africa.

Suggested Readings:

Elmer Hansen, U., Brix Pederson, M. & Nygaard, I. (2014). Review of Solar PV market development in East Africa. UNEP. Riso Centre Working Paper, Series #12. Access here: http://orbit.dtu.dk/fedora/objects/orbit:131059/datastreams/file_5f8fb931-a128-4856-aaf8-6d623f4da3de/content

Press Release: M-KOPA Solar Light up over 20,000 homes in Uganda. Access here: http://solar.m-kopa.com/wp-content/uploads/sites/4/2015/02/M-KOPA-Solar-Lights-up-over-20000-homes-in-Uganda-24th-March-2015.pdf

Case Study Summary: Barefoot Power Ltd., Africa and Global. Access here: https://www.ashden.org/files/Barefoot%20full%20winner.pdf

DELHI, INDIA

Taught by: Rajeev Ahuja

SUMMARY

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Sessions in India

Session	Lecture Topic	Key Concepts or Topics
TI 5	Harnessing Technology for India's BOP- A historical perspective	Historical tech perspective, amazing technologies; diversity in technological applications; harnessing technologies for advancing social welfare
TI 6	Technologies for Social Inclusion- A Drill Down	Understanding social inclusion/ exclusion; Power of technologies in solving development problems, understanding technologies and contexts better, digital technologies bridging social and economic divides; Is it creating new divides as well?
TI 7	Promoting and Optimizing Technological Solutions	Favorable eco-system; Government's role in policy setting; programs for tech promotion; role of non-state actors; competing and cooperating roles of state and non-state actors.

SESSION 5: Harnessing Technology for India's BOP- A Historical Perspective

Although India has a long history of technological innovations, it is known more for its software industry and its recent surge in technology-oriented businesses. This has given rise to many young entrepreneurs who are attracted to tech enterprises with a social mission. There is a huge need and opportunity to innovate in the social sector through technology. Examples are VNL, which has created innovative ways to get mobile connectivity for Indian rural populations at very low costs. Another example of not-successful products is Aakash- a $30US tablet-, that provides a great learning opportunity which highlights the complexity behind creating these technologies for the BOP while considering quality, design and usability.

This session will inform on wide-ranging applications of technology in improving the lives of BOP population in variety areas ranging from agriculture, healthcare, education, drinking water, livelihood generation and so forth. Further, digital technology is being used in variety of ways for promoting social development such as empowerment through information (for behavior change, for securing inputs - including credit - for undertaking production, for marketing of their produce), facilitating collective social action, improving the reach and quality of basic services such as health and education, etc. This session will cover a breath of areas where technological applications have occurred in recent times.

Technological solutions are being applied in numerous ways: on the supply side and/or demand side, at product level or at process level, for strengthening internal supervision at the provider's level or seeking end user's feedback, for meeting a new demand or for satisfying existing demands differently, in promoting social interaction or improving communication between citizens, government, etc. This session will place these wide-ranging, disparate technological solutions in some a perspective.

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Required Readings:

C.K. Prahalad & R.A. Mashelkar (2010). Innovation's Holy Grail. Harvard Business Review. Retrieved from: https://hbr.org/2010/07/innovations-holy-grail

R.A. Mashelkar (2000). Indian Science, Technology, and Innovation: The changing landscape by R.A. Retrieved from: http://www.india.jbs.cam.ac.uk/news/events/downloads/100621_mashelkar_slides.pdf

Scroll.in (2017, Feb. 21): "Isro launches a record 104 satellites at the same time from Sriharikota". https://scroll.in/latest/829389/isro-set-to-launch-record-104-satellites-from-sriharikota-today

Suggested readings/videos:

Ted India (2009). R. A. Mashelkar's TED talk: Breakthrough designs for ultra-low-cost products. Retrieved from: http://www.ted.com/talks/r_a_mashelkar_breakthrough_designs_for_ultra_low_cost_products

RedSeer Consulting (2010). A History of Innovation in India: A whitepaper. Retrieved from: http://redseerconsulting.com/sites/default/files/History%20of%20Indian%20Innovation.pdf

India Brand Equity Foundation (2016). Science & Technology. Retrieved from: http://www.slideshare.net/IBEFIndia/science-and-technology-sectore-report-december-2016?qid=38bc5208-8585-4c72-806f-d56d458561c0&v=&b=&from_search=2

SESSION 6: Technologies for Social Inclusion- A Drill Down

Social inclusion can be defined as a process by which efforts are made to ensure equal opportunities for all, regardless of their background, so that they may achieve their full potential. It is a multi-dimensional process aimed at creating conditions that enable full and active participation of every member of society in all aspects of life, including civic, social, economic, and political activities, as well as active participation in decision-making processes. Social inclusion is also understood as a process by and through which societies address and alleviate poverty. Technology offers tools for social inclusion.

As in the rest of the world, the digital revolution in India has ushered-in far reaching socio-economic changes in the country. This session will provide perspectives on the use and users of digital technologies in India. Further, using a few specific examples, we will explore how digital technologies are being applied to wide ranging problems faced by the BOP population and how such technological solutions have impacted this segment of the population's social inclusion. The analytical perspective given in this session will also help better understand the program's field visits.

Required Readings:

Poverty and social exclusion in India (2011). The World Bank, Pages 1-9 (Overview)

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

in detail, and 9-32 (Main Findings) you can skim. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/2289/613140PUB0pove158344B09780821386903.pdf?sequence=1&isAllowed=y

BBC News (2016, December 12): "The women scientists who took India into space". Retrieved from: http://www.bbc.com/news/world-asia-india-38253471

World Bank News (2016, May 10). Make Internet More Accessible, Affordable and Open to Accelerate Development. Retrieved from: http://www.worldbank.org/en/news/press-release/2016/05/10/make-internet-more-accessible-affordable-open-accelerate-development-says-new-world-bank-report

Gadgets Now (2016, June 27). This App helps fisherman stay out of troubled waters. Retrieved from: http://timesofindia.indiatimes.com/tech/tech-news/This-app-helps-fishermen-stay-out-of-troubled-waters/articleshow/52933504.cms

Business Standard (2011, March 23). Health Management and Research Institute looks to expand telemedicine services. Retrieved from: http://www.business-standard.com/article/companies/hmri-looks-to-expand-telemedicine-services-111032300097_1.html

TED**:** Vinay Venkatraman- Technology crafts for the digitally underserved. Retrieved from: http://www.ted.com/talks/vinay_venkatraman_technology_crafts_for_the_digitally_underserved

Suggested readings/resources:

Grameen Foundation: Mobile Technology for Financial Inclusion in India (Financial Inclusion). Retrieved from: https://grameenfoundation.app.box.com/v/mobiletechqcomm-gfi

e- Sagu: IT-based personalized agro advisory service (Agriculture). Retrieved from: https://www.youtube.com/watch?v=YFvGvr3vzIw

Mobile Kunji (Health):
Caring For Mothers and Children: https://www.youtube.com/watch?v=IuTQhKGkh64
Mobiles for Social and Behavioral Change: http://msbcindia.org/mobile-kunji/

Biosense: Affordable, point-of-care, non-invasive diagnostics products (Health). Retrieved from: www.biosense.in

SESSION 7: Promoting and Optimizing Technological Solutions

Like never before, the Government of India (GOI) is keenly promoting technological solutions to various development challenges being faced by its people. GOI's push to move India towards digital

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

payment method is the most recent example of how innovatively it is deploying digital technology to offer digital payment options to every section of the society.

GOI has initiated several programs for promoting start-ups, encouraging entrepreneurship, skill development, financial inclusion, amongst others. GOI is also deploying technology for improving governance, providing unique identification numbers (UINs) to all citizens and linking benefits provided under various social programs to the UINs for better targeting and minimizing leakages. This session will provide an overview of the main programs and examine how these are promoting social inclusion in India.

In addition to GOI, several non-state actors (incubators, accelerators, funders, social entrepreneurs, industry, and communities) are playing a crucial role in creating a local eco-system for the promotion of start-ups using technology to address social needs. This session will provide an overview of the emergence of these social start-ups in India and the role key non-state actors are playing in their promotion and in building the eco-system.

Required Readings:

Government of India (2017, January 3). Bharat Interface for Money (BHIM) will create Equality. Ministry of Drinking Water and Sanitation. Retrieved from: http://pib.nic.in/newsite/PrintRelease.aspx?relid=156095

IndiaToday.in (2016, January 18). Start-up India Stand-up India, Stand Up India: 19 exciting plans for start-ups. Retrieved from: http://indiatoday.intoday.in/education/story/start-up-india-stand-up-india/1/573128.html

The Hindu.com (2016, April 6). Modi unveils scheme to make Dailts entrepreneurs. Retrieved from: http://www.thehindu.com/business/modi-unveils-scheme-to-make-dalits-entrepreneurs/article8438165.ece

Government of India (2016, February 24). Establishment of Atal Innovation Mission and Self Employment and Talent Utilization in NITI Aayog: Retrieved from: http://pib.nic.in/newsite/PrintRelease.aspx?relid=136754

Please explore the following organizations websites and links:

TARA- a social enterprise, development consulting firm that helps create technology solutions for the poor. Website: http://www.tara.in/

WISH Foundation on building Eco-system and Partnerships. Website: http://www.wishfoundationindia.org/partnerships

India Micro Finance (2014, Septmebr 22). Solve a Global Challege and get Rs6 Crore in Funding- BMGF. Example from the Bill & Melinda Gates Foundation. Retrieved from: http://indiamicrofinance.com/global-challenge-funding-mbgf.html

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

SÃO PAULO, BRAZIL

Local Faculty: Juliana Rodrigues

SUMMARY
SESSIONS in Brazil

Session	Lecture Topic	Key Concepts or Topics
TI 8	Introduction to Brazil: Technology for scaling social impact	Overview of Brazil and innovation systems, scaling social impact, dissemination
TI 9	A broader approach to Social Innovation: A tool for social impact	Key definitions: social innovation, social technologies, social impact
TI 10	The Environment Challenge: Innovative solutions for sustainability	Environmental impact and value; agroforestry systems

SESSION 8: Introduction to Brazil: Technology for Scaling Social Impact

Brazil is the seventh largest economy in the world, showing great economic and social progress between 2003 and 2014 by lifting 29 million people out of poverty and decreasing inequality rates (in that period the Gini coefficient fell by 6.6 percentage points from 58.1 to 51.5). Brazilians have also "come online" in a big way over the last decade. The percentage of people using the Web in Brazil leapt from 9% in 2002 to about 50% in 2012. Brazil is also the 5th world's largest market of cellphones. With 60 million Brazilians now using Facebook, due to increasing access to the Internet and the rise of social media, the country is undergoing a digital transformation — and with that comes a slew of exciting opportunities for startups.

However, since 2015, the rate of poverty reduction and inequality appears to have stagnated and Brazil still has one of the world's highest levels of inequality. A large portion of the population lives in economic and social exclusion, earning very low incomes.

As pointed out at the Policy Report "The Brazilian Innovation system: a mission oriented policy proposal", there is great potential and examples to promote entrepreneurship that associates innovations and socio-economic inclusion, education initiatives and environmental and energy policies – even though there is still not a systemic design of innovation in the country.

This session will provide an overview of the scenario for innovation in Brazil and explore the perspective of social innovation. New emerging strategies are based on dissemination and diffusion of knowledge and practices taking advantage of technological fundamentals such as open-source and smart networks with the core goal of scaling impact. The democratization of access to the Internet and the development of new technologies have created a new paradigm for the social business sector.

This new paradigm now focuses on scaling social impact without necessarily increasing the size of the organization behind it, supported by an ecosystem that also seeks to stimulate social innovation. This class will dive into analyzing ways to scale impact using technology.

Required Readings:

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Morais-Da-Silva, Rodrigo Luiz; Takahashi, Adriana Roseli Wünsch and Segatto, Andrea Paula. **Scaling up social innovation: a meta-synthesis**. RAM, Rev. Adm. Mackenzie [online]. 2016, vol.17, n.6, pp.134-163
Available at: http://www.scielo.br/pdf/ram/v17n6/1678-6971-ram-17-06-0134.pdf

Geekie
Video: http://www.wired.co.uk/article/claudio-sassaki-wired-2015
Article: https://www.theguardian.com/technology/2016/jan/10/geekie-educational-software-brazil-machine-learning

Suggested Readings:

Overview of Brazil National Innovation System:

The Brazilian Innovation System: A Mission-Oriented Policy Proposal. Avaliação de Programas em CT&I. Apoio ao Programa Nacional de Ciência (Plataformas de conhecimento). Brasília, DF: Centro de Gestão e Estudos Estratégicos, 2015. Available at:
Summary: https://www.cgee.org.br/documents/10195/1774546/The_Brazilian_Innovation_System-CGEE-MazzucatoandPenna2-Executive_Summary.pdf
Full report: https://www.cgee.org.br/documents/10195/1774546/The_Brazilian_Innovation_System-CGEE-MazzucatoandPenna-FullReport.pdf

Opportunities in Technology for the Base of the Pyramid in Brazil
https://www.ciaonet.org/attachments/27549/uploads

Social Entrepreneurship, and Innovation, and Scaling Impact

Vanni, Giulio; Barki, Edgard ; Comini, Graziella. *Growth Process in business and social entrepreneurship: the case of Brazil*. In: 5th EMES International research Conference, 2015, Helsinki. Available at: http://programme.exordo.com/5emesconf/delegates/presentation/118/

Shalini S. Gopalkrishnan, (2013) **A New Resource for Social Entrepreneurs: Technology**, American Journal of Management, Vol. 13, Iss. 1, pp. 66 - 78

McKinsey (2011) Social Innovation: a Matter of Scale
http://voices.mckinseyonsociety.com/social-innovation-a-matter-of-scale/

Waitzer, J. M., & Paul, R. (2011). Scaling social impact: When everybody contributes, everybody wins. innovations, 6(2), 143-155. View online:
http://www.ashokaglobalizer.org/files/INNOVATIONS_Mcphedran-Waitzer-Paul.pdf

Bradach, J. (2010). Scaling impact: How to get100X the results with 2X the organization. View online: http://ssir.org/articles/entry/scaling_impact

Please explore the following links and organizations:
http://www.artemisia.org.br/
http://socialgoodbrasil.org.br/the-program
https://desafiosocial.withgoogle.com/brazil2016

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

SESSION 9: A broader approach to Social Innovation: A tool for social impact

In the last decades, social technologies faced a fast-paced evolution leading to profound impact in our daily lives. But the spectrum that covers the concept of technology is much broader, and the power of change of low-tech innovations in countries like Brazil is highly relevant and should understood more in depth.

It is important to understand the different approaches around social entrepreneurship and levels of social innovation that culminate in a variety of models and social initiatives. This session will provide an overview of the scenario of social entrepreneurship in Brazil from the perspective of social innovation.

The research project "Brasil 27" provides a broader view of social enterprise cases and innovation in the country. The Brazil 27 research was developed between March 2013 - May 2014, coordinated by the Center for Social Entrepreneurship and Administration in the Third Sector (CEATS), of the University of São Paulo. Its goals were to identify and describe existing social enterprises in the 27 Brazilian states that could be characterized as social enterprises providing a range of examples in different stages of social innovation initiatives. Five cases have been selected to further discuss and analyze in class.

Required Readings:

De Bruin, A.; Stangl, L. M. **The Social Innovation Continuum: Towards Addressing Definitional Ambiguity**. In: EMES-SOCENT Conference Selected Papers, Liege: EMES, 2013 Available at: http://www.emes.net/site/wp-content/uploads/de_Bruin___Stangl_ECSP-LG13-68.pdf.

Brazil 27 Cases' videos and short cases:

Choose a case from the list provided (available in Drop Box under "ShortCases_Brazil") and enter your choice in the following Doodle poll: http://doodle.com/poll/3nt6wh2bgqkcpcwg

NOTE: *No more than 3 participants can choose a specific case – so first come, first serve. This rule is important to generate sufficient variety of the cases to enrich the day's discussion. It would be great if all 5 cases could be discussed in the class.*

In preparation for the session:

Watch the video, conduct your own internet research and reflect upon the case using the guiding questions (Guiding questions - Brazil 27-Short cases). Also use the required reading to analyze the case. The videos are also available at: http://www.projetobrasil27.com.br/negocios-sociais-estudados/

*The website is in Portuguese language, but all videos have English subtitles.

Suggested Readings:

Aoqui, C.; Vaz, J. C.; Jayo, M. The quality of the relationship State-Social enterprise under the framework of governance and delegation: a case study about the program Hora Certa Móvel, São Paulo Municipality, from the perspective of CIES (Center of Integration for Education and Health). In: **5th EMES International Research Conference, 2015**, Helsinki.

Available at: http://programme.exordo.com/5emesconf/delegates/presentation/139/

Complementary information at: http://www.ciesglobal.org/medical-center-mobile

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Moura, A.M.; Comini, G.; Teodósio, A.S.S. The international growth of a social business: a case study. **RAE-Revista de Administração de Empresas**, v. 55, n. 4, p. 444–460, 2015 Retrieved from: http://rae.fgv.br/sites/rae.fgv.br/files/the_international_growth_of_a_social_business_a_case_study_0.pdf

Portocarrero, F., & Delgado, Á. (2010). Market- Based Initiatives And Social Value Creation For Low Income Sectors. In *SEKN Socially Inclusive Business In Latin America.* (pp. 205–232). Washington - DC: IADB.

Means, Andrew. (2015). *Tech Is Not the (Only) Answer* Stanford Social Innovation Review. Retrieved from: http://ssir.org/book_reviews/entry/tech_is_not_the_only_answer

Pol, E.; Ville, S. Social innovation: Buzz word or enduring term? **Journal of Socio-Economics**, v. 38, n. 6, p. 878–885, 2009.

Also available at: http://ro.uow.edu.au/commwkpapers/194/

Rodrigues, J., Comini, G., Fischer, R. M., Dujardin, F., & Santos, A. P. S. dos. (2015). The B Corporation Movement in Brazil: A Portrait of Certified Companies. **Academy of Management Proceedings ,** *2015*(1).

Available at: http://academiab.org/wp-content/uploads/2015/09/12672-BCorp-Brazil-AOM-2015.pdf

SESSION 10: The Environment Challenge: Innovative solutions for sustainability

Brazil is the second country in the world with the largest forest area, it is one of the richest biodiversity's territories on planet Earth (being a member of a group comprising 17 megadiverse countries) and, at the same time, it is one of the major agriculture producers and exporters of primary products.

Approximately 463.2 million hectares of the country's territory are covered by natural and planted forests, representing 54.4% of the national territory, distributed in the six Brazilian biomes (Amazonia, Caatinga, Cerrado, Mata Atlântica, Pampa and Pantanal). Of this amount, approximately 456.1 million hectares are composed of natural forests, and 7.2 million hectares have planted forests (according to the 2012 survey-SNIF, 2015).

Innovation is also applied to environmental issues in a country with a wide variety of landscapes and sustainability challenges. For example, successful experiences of agroforestry systems have brought together agriculture and forestry to create value, and low impact forestry economic activities encourage sustainable usage and preservation of the forest. The focus of this class is to explore Brazilian experiences in environmental innovative systems that support action on climate change and sustainability issues.

Required Readings/Videos:

Life in Syntropy: https://www.youtube.com/watch?v=gSPNRu4ZPvE
Agroforestry https://vimeo.com/157223533

Amata Brasil (2015). Annual Report. Retrieved from:

http://www.amatabrasil.com.br/arquivos/integratedannualreportamata2015_EN.pdf
For more information, explore the website: www.amatabrasil.com.br

http://blog.conservation.org/2015/08/3-ways-brazils-environmental-decisions-impact-the-world/

Suggested Readings:

TEEB. **TEEB - The Economics of Ecosystems and Biodiversity for International and National Policy Makers**. [s.l: s.n.].

MEA. **Ecosystems and human well-being: synthesis**. Washington, DC: Island Press, 2005. Retrieved from: http://www.millenniumassessment.org/documents/document.356.aspx.pdf

Scaling Up Ecological Cultivation: An Interview with Richard Charity of Fazenda da Toca
Available at https://foodtank.com/news/2014/11/scaling-up-ecological-cultivation-an-interview-with-richard-charity-of-faze/

De Hoyos, A., Moura, C., & Dias, S. G. Beyond Green Innovation: The Next Step. **Journal on Innovation and Sustainability**, São Paulo, vol.02, n.01, p.13 – 22, 2011
http://revistas.pucsp.br/index.php/risus/article/view/7255

Gonçalves, A. L. R.; Vivian, J. L. **Agroforestry And Conservation Projects In Brazil: Carbon, Biodiversity, Climate, And People**. Centro Ecológico Ipê – Serra, 2012

Lapola, David M; Martinelli, Luiz A; Peres, Carlos A; Ometto, Jean P H B; Ferreira, Manuel E; et al. Pervasive transition of the Brazilian land-use system. **Nature Climate Change**; London4.1 (Jan 2014): 27-35.
http://www.ppgca.ufpa.br/arquivos/repositorio/ingressodoutorado/referenciasseleodoutorado/2015-Pervasive%20transition%20of%20the%20Brazilian%20land-use%20system.pdf

Please explore the following links and organizations:
http://ipe.org.br/
http://www.imaflora.org
http://www.observatorioflorestal.org.br/view-publicacoes

Evaluation and Grading Criteria

The components of student grades for the *Technology, Change and Innovation* course are:

Pre-Departure Assignment & Launch Participation	10%
Essay Uganda	25%
Essay India	25%
Essay Brazil	30%
Participation	10%
Total:	100%

ASSIGNMENT

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

For the IHP Social Entrepreneurship *Technology, Change & Innovations* course, students will write an **individual analytical essay** at the end each country program in Uganda, India and Brazil to reflect on their learning.

Topics will vary in each country program and you will receive the corresponding assignment in the first week you arrive in Uganda, India and Brazil. The following is an example of an assignment.

Example- ESSAY TOPIC

BRAZIL ESSAY ASSIGNMENT

The assignment involves: (1) an analysis of a Brazilian social innovation (ones you have studied while in class, visited or observed), and (2) a comparison to similar innovations in the US, Uganda and India.

Part 1. Choose **one** of the social innovations (SI) you have learned about in Brazil, frame the social and environmental problem they are seeking to address, and explain how they address it.

Using the **social innovation continuum** (De Bruin & Stangl, 2013) and **promoting factors of SI scalability** (Morais-Da-Silva et al., 2016), discuss the levels where these innovations are occurring and their scalability and potential impact.

- Examples of cases you may want to consider include: Geekie, Justa Trama, Solar Ear, Gerasol, Banco Palmas, 100% Amazônia, Vivenda, A Banca, Amata or Fazenda da Toca.

As you develop this first part of your analytical essay, please think about and include the following:

- ✓ **The problem and impact:** *What is the problem this social innovation is trying to address? How does the analyzed organization intend to generate socio-environmental value? What is the intended impact?*
- ✓ **The solution and the design:** *What is the solution proposed? How does it work? Why, how and where was the technology designed? Did it consider the beneficiaries' needs, access, education, literacy (digital and non-digital), economic status, etc.?*
- ✓ **Beneficiaries:** *Who is the innovation for? Who has access to it? Is it accessible to the intended beneficiaries? How are the beneficiaries included in the process?*
- ✓ **Social and Environmental Innovation:** *Can this solution or technology be considered a social innovation? Why? What is the kind/focus of innovation? In what level? Does it have a more local or global focus?*
- ✓ **Business Model:** *How is the innovation or technology financed? Is it sustainable? List the key points (from your perspective) in the business model of the case you selected. How does the analyzed organization generate economic value (i.e., revenue)?*
- ✓ **Scalability:** *Is the impact scalable? In what direction – up or deep? Why or why not? Is it scaling? How? What are the main challenges and points of concern to scale?*
- ✓ **Challenges**: *what are the main challenges for the technology to obtain the expected results?*

Part 2. Comparison. Compare the Brazilian innovation you chose with an example(s) you experienced or have researched in the US, Uganda and India. Choose one feature of comparison to conduct in your essay*: (1) similar technology; (2) similar features of social innovation (3) similar challenges to deliver results and scale.*

Once you choose the feature, make sure to provide sufficient background on both innovations and analyze the following:

- *What are the main differences and similarities?*

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

- *How does this technology/innovation differ or is similar to the one you chose in the US, Uganda or India?*
- *What are the contextual characteristics that influence both technologies/innovations? How are these similar or different?*
- *What design features change?*
- *How do users differ?*
- *What kind of social impact is it having in different contexts?*
- *Would it be possible for the technology/innovation and the operational model to learn or exchange practices from each other? Please explain your suggestions and what results could be expected.*

SOURCES:
Essays should refer to and integrate:

- At least 2 readings assigned during the Brazil country program;
- At least 2 additional sources from research you do on your own (you can use other academic journals, field notes, interviews, etc.);
- At least 1 site visit, guest lecturer, homestay observations or other country program component.

ESSAY FORMAT:
Please follow these prompts:

- Include your full name at the top of the assignment.
- Essays should be 7-8 pages in length (approx. 2000 words); double spaced, 12-point font, 1-inch margins, excluding references and bibliography.
- Essays have a structure which includes an introduction (hook and thesis statement), a body (make claim and provide evidence), and a conclusion.
- Use APA style for citations in text, such as (Smith, 2013), and include a bibliography. Primary sources such as guest lecturers and site visits should also be included in the bibliography.
- Please save the essays as a single document (.doc or .docx format, not .pdf). Be sure to label your file with the following naming convention:

FirstName LastName TECH Brazil *(i.e. Katy Delagarza TECH Brazil.docx)*

DELIVERY INSTRUCTIONS:
Please submit your analytical essays to your local faculty. Specific instructions will be provided in each country upon arrival.

GRADES:
The analytical essays for the *Technology, Change & Innovations* class are an individual assignment and each account for 25% (Uganda and India) and 30% (Brazil) of your grade.

GRADING SCALE:

94-100%	A	Excellent
90-93%	A-	
87-89%	B+	
84-86%	B	Above Average

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

80-83%	B-	
77-79%	C+	
74-76%	C	Average
70-73%	C-	
67-69%	D+	
64-66%	D	Below Average
below 64	F	Fail

Explanation: An "A" represents truly outstanding work that exemplifies through analysis, superior insights and crystal clear presentation. A "B" signifies highly competent work that accomplishes the task at hand very well, through considerable thought, reasonable analysis and an organized presentation. A "C" represents adequate work that meets basic requirements but does not demonstrate distinction in terms of analytical insight or organization. A "D" is characterized by poorly or partially completed work that reflects a lack of initiative, inconsistent analysis and/or erratic presentation. Pluses and minuses indicate relatively better or poorer work within each category. There is no A+.

Papers/reports/presentations without thematic ideas or arguments – those that lapse into mere narration or description, or whose arguments are buried within the text – will be graded with their low level of organization.

ASSESSMENT:

The following criteria and rubric will be used as the base for grading your essay:

Criterion	Standards
Responsiveness to topics/essay prompts	A – Strongly addresses topics, responds very effectively to all aspects of assignment. B – Clearly address topics, but may respond to some aspects more comprehensively or effectively than others. C – Adequately addresses the topics, but may often slight relevant and pertinent aspects. D – Indicates confusion about the topics and overall assignment, or significantly neglects important aspects. F – Suggests an inability to comprehend assignment, or to respond meaningfully to topics.
Communication of ideas	A – Explores relevant issues through strong analyses of data/experience; goes significantly beyond the simple or obvious. B – Shows good depth and complexity of thought. C – May treat the topics simplistically or repetitively; doesn't demonstrate sufficient analysis of data and/or experience. D – Lacks focus, demonstrates confused or simplistic thinking, or fails to adequately communicate ideas. F – Unfocused, illogical, incoherent or disorganized.
Organization and clarity of expression	A – Very coherently organized, with ideas/statements consistently supported by strong reasons or examples. B – Well organized and developed, with frequently appropriate reasons or examples. C – Adequately organized and developed; generally supports ideas/statements with appropriate reasons or examples. D – Poorly organized and/or undeveloped; lacks support from data and/or experience. F – Undeveloped; provides little or no relevant support or rationale.
References	A – Thoughtfully and analytically incorporates all references requested in prompt. B – Incorporates all references and provides sufficient analysis. C – Partially includes references and provides very general analysis.

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

	D – Partially includes references and doesn't demonstrate sufficient analysis. F – Does not include any references in prompt; provides no analysis.

Expectations and Policies

Participation: IHP is an experiential learning program. You have to show up to have the experience. As such, participation is a minimum expectation, not generally to be rewarded with class credit. Students are expected to attend all classes, guest lectures, and field activities unless they have a medical excuse that has been communicated and approved of by IHP staff, faculty, or Fellow.

Class Preparation: Show up prepared and have your readings completed and points in mind for discussion or clarification. Complying with these elements raises the level of class discussion for everyone. This program is built upon the strong belief that your experiences result in deep insights and powerful learning. Course assignments are created to facilitate learning opportunities and experiences. Dialogue in class about these insights and participation in these activities is critical. For this reason, your participation is very important. As a learning community, each one of us will influence the learning environment. Please take responsibility for your role in this environment and come to class prepared and ready to engage with others in a positive and thought-provoking manner.

Meeting deadlines: All assignments have to be turned in on the date indicated on the specific country module schedule. Have assignments completed on schedule, printed, and done accordingly to the specified requirements. This will help ensure that your assignments are returned in a timely manner. In keeping with IHP policy, late papers will drop one point per day, unless other arrangements have been made in advance. Course assignments are due at the beginning of the day.

Technology in the classroom: Electronic devices are critical tools for learning and communication, but our IHP courses prioritize engaged conversations unhindered by personal electronic devices. Students, faculty, and visitors are expected to *keep cell phones, laptop computers, and other devices out of sight, sound, and mind* during class sessions – except under extenuating circumstances that have been discussed in advance with the faculty member.

Academic Integrity: Academic dishonesty is the failure to maintain academic integrity. It includes, but is not limited to, obtaining or giving unauthorized aid on an examination, having unauthorized prior knowledge of the content of an examination, doing work for another student, having work done by another person for the student, and plagiarism. Academic dishonesty can result in severe academic penalty, including failure of the course and/or dismissal from the institution/program.

Plagiarism is the presentation of another person's ideas or product as one's own. Examples of plagiarism are: copying verbatim and without attribution all or parts of another's written work, using phrases, charts, figures, illustrations, computer programs, websites without citing the source; paraphrasing ideas, conclusions or research without citing the course; using all or part of a literary plot, poem, film, musical score, computer program, websites or other artistic product without attributing the work to its creator.

Students can avoid unintentional plagiarism by carefully following accepted scholarly practices. Notes taken for papers and research projects should accurately record sources of material to cited, quoted, paraphrased, or summarized, and research or critical papers should acknowledge these sources in footnotes or by use of

footnotes.

Respect differences of opinion: (classmates', lecturers, local constituents engaged with on the visits) You are not expected to agree with everything you hear, but you are expected to listen across difference and consider other perspectives with respect.

Please refer to the SIT Study Abroad Student Handbook for policies on academic integrity, ethics, warning and probation, diversity and disability, sexual harassment, and the academic appeals process.

PLEASE NOTE: This syllabus is representative of a typical term. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.