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Network Science Center Research Team's Visit to Kampala, Uganda

### **ABSTRACT**

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# **Technical Report 13-007**

## **Network Science Center Research Team's Visit to Kampala, Uganda**

**Daniel Evans**

U.S. Military Academy, West Point NY

**July 2013**




**United States Military Academy  
Network Science Center**

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**U.S. Military Academy  
Network Science Center**

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**Technical Report 13-007**

# **Network Science Center Research Team's Visit to Kampala, Uganda**

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**10 July 2013**

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## **Network Science Center Research Team's Visit to Kampala, Uganda**

**Daniel Evans**

### **Abstract**

Sociologists, economists, and network scientists concur that the entrepreneur's network is critical to success but have consistently struggled with developing models that are measurable or quantifiable. Well-known research on this subject tends to focus on the entrepreneur's social network (Greve and Salaff, 2003, Witt, 1978) and utilizes the Name Generator approach (McAllister and Fischer, 1978) to develop the social network model. This method maps an ego-centered network and assembles an inventory of information about every social contact, such as the relationship between the person under analysis and the people within the social network (Van Der Gaag & Snijders, 2004).



Our research goal is to quantify the entrepreneurial network in such a way that the analysis provides concrete policy recommendations. Our Center has experimented with several data collection methodologies and we have developed an innovative yet simple technique that allows us to develop quantifiable entrepreneur networks. Our innovation is not to develop each individual entrepreneur's network but to understand the entire entrepreneurial network of the community in which the entrepreneur lives and operates. In order to develop this model, we have adapted a technique used in sociology to measure social capital called the Position Generator (Lin, Dumin, 1986; Lin et. al. 2001). This technique circumvents the massive effort of mapping an individual's social network before locating the social resources in it. By approaching the entrepreneur's network through the analysis of his connections to prominent structural positions in the community or society, researchers are able to construct measures that obtain information on the strength of ties and structural holes (Lin, 2001:63).

## **Data Collection Background**

Mr. Dan Evans and Dr. Charles Thomas visited Kampala, Uganda in support of an ongoing Network Science Center project that is developing models of entrepreneurial networks. As we develop additional data sets and develop new models, we will compare and contrast the models based on the development of new network classification methods. After the networks have been classified, they will develop a method to identify driver nodes enabling policy makers to influence the existing network in order to cause it to evolve towards a more desirable state. (For additional information concerning this project see the Project Synopsis.) A copy of the survey is located in Appendix 1.

The team had previously conducted a test data collection in Addis Ababa ([Ethiopia Trip Report](#)) and we incorporated the lessons learned from this experience in order to make this data collection effort more effective and efficient. We selected Kampala as our first data collection site for two main reasons:

1. The team has previously been introduced to [Jon Gosier](#), a software developer and designer working at the intersection of open data, human rights, and African development. Jon is the founder or co-founder of several organizations and initiatives some of which include [AfriLabs](#), [Appfrica](#), and [Hive Colab](#) in Kampala. Jon agreed to cooperate on the project and his staff volunteered to host the team.
2. Kampala is a hotbed of young African tech entrepreneurs. The current government has set the conditions for economic growth and has encouraged the growth of small businesses. There are four other business incubators besides Hive CoLab in Kampala. Additionally, Kampala is the home of [Makerere University](#), one of the leading universities in Sub-Saharan Africa. The student body is energetic and tech savvy.

Our team's next data collection effort will be a follow-up visit to Addis Ababa, Ethiopia and after that visit; the team will visit Lusaka, Zambia.

## **Uganda Background**

The colonial boundaries created by Britain combined a wide range of ethnic groups with different political systems and cultures. These cultural differences hindered the establishment of a working political community after independence was achieved in 1962. The dictatorial regime of Idi Amin (1971-79) was responsible for the deaths of some 300,000 opponents and guerrilla war and human rights abuses. Under his successor, Milton Obote (1980-85) at least another 100,000 lives were lost. But the rule of Yoweri Museveni since 1986 has resulted in relative stability and economic growth.

Since 1986, the government, with the support of the international community, has acted to rehabilitate and stabilize the economy. New economic reforms have resulted in solid economic growth with a focus on investment in infrastructure, incentives for production and exports, lower inflation, improved domestic security, and the return of exiled Indian-Ugandan entrepreneurs. Oil revenues and taxes are expected to become a larger source of government funding as oil comes on line in the next few years. Unreliable power, high energy costs, inadequate transportation infrastructure, and corruption inhibit economic development and investor confidence.

Uganda has experienced more than 20 years of relative political stability and economic growth. The country has made progress on a number of fronts, including addressing the HIV/AIDS issue and stabilizing its northern regions, where the Lord's Resistance Army (LRA), a militant movement, which is described by some as new religious movement or a cult, has operated for 20 years. However, the country faces challenges including troubled 2011 parliamentary and presidential elections, continued rapid population growth, human rights problems, corruption, and inflation. Uganda is a key U.S. regional strategic partner through both its involvement in the African Union Mission in Somalia and counter-LRA efforts in central Africa

### **Day 1:**

We started our visit with a meeting at US Embassy. We met with the Deputy Chief of the Office of Security Cooperation and the Commercial Officer from the Political/Economics Section. During this meeting we presented a synopsis of our research project, our data collection plan for the week, and presented several network visualizations of open source data that we had previously collected that were relevant to the political and economic environment in Uganda. The presentation generated a fruitful

discussion and we agreed that we would share our data set with appropriate members of the Embassy staff in order to further refine the model in the near future.

We then drove across Kampala to meet with Teddy Ruge, a co-founder of Hive CoLab and a noted Ugandan Social Entrepreneur, and Brian Ndyaguma, the operations manager of Hive CoLab. Hive CoLab is located in the Kanjokya House in the Kamwokya neighborhood of Kampala. The Kanjokya House is a new 4-story building on a quiet street that houses numerous businesses and Non-Governmental Organizations.



**Teddy Ruge**



**Kanjokya Road in Kamwokya**

Hive CoLab was the first tech-focused business incubator in Uganda. It was founded in 2010 through the efforts of Jon Gosier and Teddy. In 2008, Teddy was in United States writing about the emerging tech sector in Africa and was introduced to Jon who was working in Kampala. At the time in Kampala, tech-focused entrepreneurs were congregating in Internet cafes that were not conducive to creativity. Jon and Teddy discussed the idea of generating a "next generation" Internet cafe. Based on this idea, they established their first "co-working" space. The incubator initially floundered a bit because of a lack of a business model. They eventually received some funding from [Indigo Trust](#), and [Hivos](#), and since then they have thrived and were able to move to their current location.

Hive CoLab is a large open space with a reliable internet connection, a back-up power source (vital in locations like Kampala where outages are a common occurrence), and



a conference space for one on one meetings. It is a community-owned, collaborative, co-working space for the Uganda's Technology community. Membership is open to all and is free. The only requirement for membership is that the applicant must be working on a project or must be looking for a project to work on. The incubator offers in-house consultants to mentor members and the mission is to provide the new companies the much-needed visibility in order to promote its offerings and eventually find funding or investment capital.



### Hive CoLab

Hive currently has a rental structure for a dedicated workspace for the firms that are working out of the incubator. They would eventually like to move towards an equity model where companies compete to join Hive and then give up a portion of their equity to the incubator.

In 2011, Hive CoLab launched the [Apps4Africa](#) project in collaboration with the US State Department (They recently had a winner from Hive.) This effort increased Hive's visibility and they now host the [Mobile Monday](#) group in Kampala as well.

Teddy is also exploring the possibility of establishing a research division that keeps up with the tech space in Africa, with a focus on mobile, and issues periodic reports. He is also exploring producing tech-related projects for Non-Governmental Organizations and the Ugandan government.





### Interviews at Hive CoLab

After our initial introductions we began to meet with, interview, and survey individual entrepreneurs working out of Hive CoLab.

#### Day 2:

The team continued to meet with and interview entrepreneurs at Hive CoLab during the morning.

In the afternoon, we traveled to another business incubator located in the Nakasero area of Kampala called [Outbox](#). Outbox is housed in Solzi House, another modern high rise building that also hosts a large number of businesses.



### Outbox and View from Solzi House

At Outbox, we were hosted by Richard Zulu, the general manager. Outbox was founded in 2012 and is the newest business incubator in Kampala. Outbox is financially supported by Google, Deloitte, and Samsung. Outbox has marketed itself not just as an incubator but as a place for the tech community to meet with potential mentors and access professional services. Outbox is also involved in facilitating innovation competitions and industry workshops. Outbox also has a quality internet connection and a back-up power supply.



**Outbox-tech collaboration and incubation space**

Outbox's goal is to stimulate and foster technology entrepreneurship through the incubation and acceleration of three to five mobile and web businesses from idea to investment readiness in a period of three to six months. They also aim to be a focal point for the local tech community, bringing together developers, entrepreneurs, mentors, advisors, and venture capitalists. A common theme throughout our visit was the desire to focus on locally relevant internet and mobile applications.

Outbox currently has four teams under incubation and a total of 29 people are spread across these teams. In order to join Outbox, an entrepreneur has to approach the manager to apply for admission. The manager personally interviews the applicant to determine if their business idea or skill set is a good fit for the incubator. Interestingly, start-ups get a Google employee as a mentor.

Similar to Hive CoLab, the start-up pays rent for their space and the incubator does not take any equity in the business. Outbox also host events in their space in order to generate additional revenue. Richard is also in search of additional IT projects to generate revenue as well.

During our time at Outbox, we were fortunate to meet with several fascinating entrepreneurs and collect survey data.

### **Day 3:**

During the morning we spent additional time with Teddy Ruge at Hive CoLab learning more about the economic and entrepreneurial environment in Uganda.

Later in the morning, we took a short ride to [@The HubKampala](#), another business incubator also located in the Kamwokya neighborhood. @TheHub is located in two renovated Kampala City Council flats on a quiet street and has a bit of a different focus. Their members are a bit more diverse as not only are there tech-focused entrepreneurs but also a number of graphics artists, journalists, and local small businesses needing an office space. @TheHub also has a quaint garden cafe that serves excellent food, coffee, and a wide selection of fresh juices. It's a natural gathering place for Kampala's creative set.



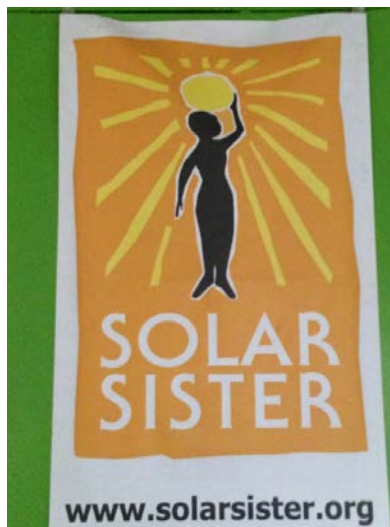
**@TheHub Kampala**



We were hosted by Jantien Zuurbier, @TheHub's founder. Jantien is Dutch and worked in Uganda in the field of development after completing her MSc in Management of Agricultural Knowledge and Social Change. She started to focus on web design and web development and soon found a market in Uganda's dynamic art industry, contributing to projects such as <http://startjournal.org>, and recently, a new crowd-funding platform for the arts in East Africa. Jantien is also the editor of Arts 256 magazine, a local art-focused magazine (256 is the telephone country code for Uganda). Jantien established @TheHub about a year and a half ago. It currently has about 12 workspaces and a larger meeting room.



**The Junction Café and Meeting Space @TheHub Kampala**



**One of @TheHub's Tenant Businesses**

@TheHub has a quality Internet connection and a back-up power supply. @TheHub offers time-based membership for its members. Their rates provide different opportunities to use the space and offer the flexibility to change. For example a co-working desk space costs \$220 per month. @TheHub relies solely on this rent for revenue and does not currently take any equity from the hosted start-ups. At this time @TheHub does not have a mentorship program and is really more of a networking space. At this time, there are no commercial sponsors and they break even based on the rent collected and café revenue. Jantien is considering creating some commercially sponsored desks.

After meeting with Jantien and learning more about @TheHub, we were able to meet with, and survey several entrepreneurs based there. After our interviews, we drove across town to complete several interviews at Outbox.

#### **Day 4:**

Once again, we began the morning with our hosts at Hive CoLab. We then drove to the Kampala City Centre to Mara LaunchPad located in Ham Towers across the street from the main entrance to Makerere University. At Mara LaunchPad we met Delia Dean, the LaunchPad Country Director. Delia is also a business development consultant.



#### **Mara LaunchPad**

Mara LaunchPad was founded and funded in 2010 by the Mara Foundation which was established by the founder and Director of Mara Group, [Ashish J. Thakkar](#), Ashish is a Ugandan-born entrepreneur who grew a small computer trading operation into a diversified conglomerate with approximately \$100 million in revenues. Mara is now

involved in such diverse businesses as real estate and tourism, financial services, information and communications technology, renewable energy. and manufacturing. The group's operations span 28 countries on four continents, including Asia.



**View from Mara LaunchPad**

Ashish is driven by his concern about youth unemployment and is interested developing mentorship and guidance for young entrepreneurs. LaunchPad links each entrepreneur with a mentor and focuses on accounting and financial training.

Mara Launchpad was founded in partnership with [Angels Finance Cooperation](#) (AFC), a business support organization started by three Ugandan school friends who we were fortunate to meet. Being young Ugandan entrepreneurs themselves, the members of the AFC team are able to directly relate to the needs and challenges of the members of the Launchpad.

Mara LaunchPad has an open-plan layout with modern furniture. Members are able to take advantage of the fast Wi-Fi internet connection, lounge area, and conference room. The businesses under incubation at Mara LaunchPad are more diverse than those at the other incubators that we visited. Their start-ups include manufacturing companies, call center operations, and agriculture, in addition to tech start-ups.

LaunchPad typically seeds approximately \$2,000- \$4,000 per company and takes an equity stake with a three to five year time frame. Additionally, each firm pays rent ranging from \$35-\$125 per month depending on the size of their space. The incubation goal is 24 months. Mara can house up to 40 businesses at one time and their Innovation Center has room for 50-60 individuals.

In addition to the shared office space, Mara Launchpad runs a speaker program and hosts many external events. The speaker program brings keynote professionals to talk to entrepreneurs on technical issues of relevance to them, such as taxation and venture capital. The Young Entrepreneur Club meetings of the Entrepreneur Launchpad mentorship program also take place at the Mara Launchpad.

During our visit we were fortunate to interview and survey numerous members of the LaunchPad.

We then drove to the Makerere University Business School located on a separate campus in the Nakawa neighborhood. We were hosted by Fred Iga Luganda, the Director of the Makerere University Business School Micro-Finance Center. The Center is a research organization aimed at fostering financial inclusion and fighting poverty through research, training, consultancy, Internship and an information hub for policy makers and researchers. The MFC is developing innovative solutions based on the results of their research in order to design better products and delivery mechanisms to serve the unbanked.



### **Micro-Finance Center at Makerere University Business School**

Fred was a gracious host; he explained his Center's goals and current work and we had the opportunity to discuss our ongoing research project with him. Additionally, we discussed potential ways to collaborate in the future.





## Garden City Mall Kampala

### Day 5:

We attended a Kampala tech meet-up at Hive CoLab entitled, "The New Face of Entrepreneurship" co-sponsored by [Global Business Labs](#), an international organization that initially set up a business incubator model at the Stockholm School of Economics and has recently established similar labs in Namibia, Botswana and Uganda.

Prior to the event, we were able to meet with, and interview many of the attendees. After the event, we departed for the airport to return to West Point.

### Conclusion

Over the course of 5 days, we were able to administer the survey to approximately 40 entrepreneurs. Even with prior coordination and the assistance of incubator staff members in Kampala, it was difficult to survey large numbers of entrepreneurs in a single location. We will address this issue during future data collection efforts through more detailed prior coordination and we will explore a more efficient use of incentives in order to increase our data sample. Nonetheless, we believe that our sample size is sufficient to effectively test our analytical methodology.

Our network model and initial findings will be addressed in a follow-on technical paper. The team will visit Addis Ababa, Ethiopia in June 2013 and conduct a similar data collection effort. Eventually, we will develop entrepreneurial network models from four Frontier Markets and one model from a Developed Market. Upon completion of the data collection, the team will construct model social capital topologies of the networks, and then quantitatively differentiate these networks utilizing network analysis techniques



resulting in several proposed network classifications. Additionally, we will determine if we can identify certain nodes, called driver nodes, that can be influenced in order to make network outcomes more socially desirable (Barabasi, 2011).



**Kampala Tech Meet-up at Hive CoLab**



**Views of Kampala**

**Flyer for Entrepreneur/Tech Meet-up**



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## APPENDIX 1: Entrepreneur Network Survey

### Demographic Data:

1. Age
2. Sex
3. Marital Status
4. Annual Revenue
5. Sector
6. Political Party Affiliation
7. Education Level
8. Name of University/College

1. If you would need assistance with **legal registration** of your business, who would you most likely approach in order to address this issue?
  - Myself
  - Government Representative
  - Government Business Development Program
  - Private Incubator
  - Non-Governmental Organization
  - Venture Capitalist or Angel Investor
  - Family Member
  - Religious Leader
  - Someone in Social Network
  - Commercial Bank
  - White Collar Professional
  - Military Leader
2. If you would need assistance with **start-up capital** of your business, who would you most likely approach in order to address this issue?
  - Myself
  - Government Representative
  - Government Business Development Program
  - Private Incubator
  - Non-Governmental Organization
  - Venture Capitalist or Angel Investor
  - Family Member
  - Religious Leader
  - Someone in Social Network
  - Commercial Bank
  - White Collar Professional
  - Military Leader
3. If you would need assistance **acquiring equipment** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader

4. If you would need assistance with **legal issues or intellectual property rights** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader

5. If you would need assistance with **required infrastructure** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
- White Collar Professional
- Military Leader

6. If you would need assistance with **hiring additional employees** for your business, who would you most likely approach in order to address this issue?

- Myself
- Government Representative
- Government Business Development Program
- Private Incubator
- Non-Governmental Organization
- Venture Capitalist or Angel Investor
- Family Member
- Religious Leader
- Someone in Social Network
- Commercial Bank
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