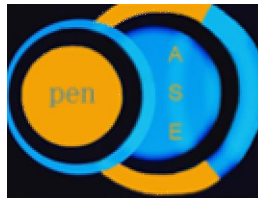




Communication System Design Fall 2008

Open Source Networking

14-October-2008



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OpenCASE | White Paper

Business Models Based On Open Source Networking in Malawi

How standard hardware, evolving deployment models and simplified application integration makes open source networking a better and cheaper choice?

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Entrepreneurs of Future

Keep Your Dream Alive, Never Give up
Be Humble and Stay Calm
Tomorrow Will Always Be Better

Beginning of the story

After a tiring week at his office in Kista, Jonas was so tired. It was end of the summer in Stockholm and the trees started to turn in to yellow. Being an entrepreneur, Jonas spent whole summer in Stockholm by writing business plan and opportunity assessment reports based on the idea that he has in his mind. He believed that Africa is a very unsaturated market and his idea is a very cool idea which will enable his start up to gain some market share in the continent starting from Malawi. He previously knew that; in the 1990s the computing industry shifted from expensive proprietary systems to open systems based on standard, low-cost hardware. This dynamic changed a 20-year pattern of IT buying and deployment models. This was a good chance for him to implement his idea. He believed that this idea is practical and things will happen if he continues to work and has some local connections in Malawi. He was also aware that each country has a unique value proposition.

One of his believes was that; ever increasing IT needs and innovations force IT companies to have high performance and low cost products and services. To be able to reach this goal open-source is one of the options to accelerate this movement. By all these believes and hopes in his mind finally he caught up the metro towards T-Centralen and it was time for him to get ready for the big family dinner...

1. Description of the proposed task

Sustainable development through the right decisions and the best practices is one of the biggest goals of African countries. To achieve this, universities are the key point, where innovation and science comes from. Sharing knowledge and experience is one of the crucial parts to accelerate this development. In order to gain a competitive position globally and expedite economic growth the governments have to implement policies, which focuses on achieving this goal. We need to make believe the policy makers that ICT is an enabler for every industry sector in order to be competitive globally.

To create a bridge between universities and research centers, we are building an infrastructure to be connected with each other under a national research educational networks called NRENs. In this internet infrastructure we are using a PC-Based open-source networking model, which is much more cheaper and flexible than any other commodity networking hardware or software. But one of our biggest problems here is that, to define the business model behind this philosophy, which will enable us to sell this product in the future or make this solution acceptable for the possible customers.

1.1 NRENs

Most of the African countries do not have fast internet connection and the IT infrastructure has also some problems. Internet access is provided by private companies and they are charging very high prices. If we can connect National Research and Education Networks (NRENs) with other academic institutions in nationwide networks, this will encourage NRENs to share knowledge, increase research and development capacity and finally create value for their countries and Africa. This also means that the collaboration and knowledge sharing is a crucial goal for the NRENs network.

From a start up points of view and the decision makers' point of view, price is a very important factor when deciding which solution to be used. Today in the market we have proprietary ones, which are safe but expensive, rather than using only those, it would be meaningful to use open source solutions to provide better internet connection to NRENs and to possible customers. In addition to these, decision makers should be very sure about the quality and ability of an open source solution, which will perfectly fit to the NRENs needs.

1.2 Open Source Networking

The most commonly used network and routing equipment for major networks is today proprietary, made by large companies like Cisco and Juniper. This dedicated hardware is highly sophisticated and is in most cases serving its purposes very well. Nevertheless the open source alternative to proprietary routing solutions is getting more and more attention because of two important factors: the much lower purchasing cost, and the open source characteristic that lets any system designer or programmer develop and improve the software. An open source based network is built using ordinary PCs, equipped with increasingly affordable network cards, and switches available on the consumer market. The software used is Linux based [1].

Open source solutions do not yet include all the advanced features as proprietary solutions do. But all the basic features for normal networking are supported and due to the fact that the hardware components are easily interchangeable and the software is free and under constant development, an open source network is easy and cheap to upgrade [1].

2. Goals and Objectives

One of the most important objectives is to define a sustainable business model based on open source networking idea, which will enable us to persuade the regulators? In Africa there are 53 countries and each has priorities, so it is a challenge to define a business model which will fit most of the African countries. By keeping this in mind that decision makers are difficult to convince and there is also lack of political support.

Another undefined topic is commercialism. How can we show the importance of the open source networking for NRENs to the decision makers and end-users? We believe that the network between NRENs is important and will create value for public if we provide them fast internet connection, but how should we persuade the politicians and other decision makers.

In addition to these partnership and alliances are key to success while you are working in another country. Should we have local partners? If yes, who are they? While thinking all of these things, keep in mind that a start up's most important 4 characteristics are "People, Problem, Product, and Potential". By keeping in mind the 4Ps, what will be the best solution to start from?

Finally, how are we going to sponsor the project? How much we need as a start up expenditures and what is the break even point? Thinking about the long term

relationship how are we going to generate revenue to pay back the investors or partners?

2.1 Final Clues from a Start-Up Point of View

- Don't forget the basic
 - People, Product, Potential & Problem
- Start-ups' ABCDE
 - Alert, Believe, Consistency, Determination & Effectiveness
- Yet another 4 P's
 - Principle, Perfectness, Persistency & Pray

3. Deliverables

We want to divide the deliverables in to two parts. Part one is the deliverables that we expect at the end of each week and the other that we expect to have at the end of your final work.

3.1 First Week Deliverables

- Calculation of the approximate start up expenditures for Malawi and break even point. (they do not have to be the exact numbers but a close approximation)
- Prepare a policy document for Malawi, which will inspire us about how to convince policy makers to use open source solution rather than a proprietary one.
- Prepare a 10 minute presentation about the proposed solution.

3.2 Second Week Deliverables

- A report which will inspire us to define the best business model based on open source networking idea. This report must clearly shows the reasons and must have a reality check part.
- Prepare a 5 minute presentation about the suggested business model for Malawi.

3.3 Final Deliverables

- Prepare a 10 minute presentation about the whole idea and suggested business model which will show us how this plan will work and how we will generate revenue on long term? (If possible, please use the DDART model)

4. Competence profile required

To be able to successfully deliver the assigned tasks we need a group of students which has 3 members who has basic knowledge of

- Basic Knowledge of Computer networks
- Business Opportunity Analysis
- Entrepreneurship

5. End of the story

After a long and tiring night with all the family members, Jonas was so tired at morning. He was planning to review the documents and watch news about Africa. He knew that, not the plan it self but the planning is the most important thing. That's why; continuously he was reviewing the documents and improving them. He decided to read the business model of Vyatta, Ubuntu, MySQL and Redhat to see if he can adopt something from their business model to his own. While drinking his coffee he had some questions marks in his mind, "*how can I make believing the decision makers to my idea and what is the best way of implementing this plan in Malawi?*" It was a balmy Saturday morning and he was so tired of thinking the business models to help Africans and make meaning for their lives...

6. REFERENCES

[1]- http://www.tslab.ssvl.kth.se/csd/projects/0811/?q=os_networking last accessed 14 October 2008

[2]- <http://www.tslab.ssvl.kth.se/csd/projects/0821116/node/2> last accessed 15 October 2008

[3]- <http://www.tslab.ssvl.kth.se/csd/projects/0831011/Home> last accessed 15 October 2008

[4]- <http://www.networkworld.com/> last accessed 15 October 2008

7. Recommended Reading

[1]- Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers - by Geoffrey Moore, Regis McKenna

[2]- Inside the Tornado: Marketing Strategies from Silicon Valley's Cutting Edge - by Geoffrey Moore

[3]- The Chasm Companion: A Field-book to Crossing the Chasm and Inside the Tornado - by Paul Wiefels, Geoffrey Moore

[4]- The Gorilla Game: Picking Winner in High Technology - by Geoffrey Moore

[5]- The Tipping Point: How Little Things Can Make a Big Difference - by Malcolm Gladwell

[6]- Good to Great: Why Some Companies Make the Leap and Others Don't – by Jim Collins

[7]- Blue Ocean Strategy – by W.Chan Kim and Renée Mauborgne