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Chapter 5:
The Nyamata Telecentre and the Rwanda Telecentre Network (RTN), Rwanda

Executive Summary

Founded in 2004, the Nyamata Telecentre is a private enterprise whose goal is to stimulate rural development by providing access to Information and Communication Technologies (ICTs) in the village of Nyamata, located near Rwanda's capital Kigali. Its founder, Paul Barera, became increasingly passionate about ICTs for development while working in the Bugesera district local government. Immediately after his Management and Development studies, he founded the Nyamata Telecentre to create a job for himself and others, and to prove that ICTs could be effective tools for rural development in Rwanda. Within 8 years, the Nyamata Telecentre became a successful business. It now has 25 employees, delivers a variety of ICT and non-ICT, public and private services, registers 100 visitors a day, and works in collaboration with national companies as well as the Rwandan government.

In 2006, to ensure the sustainability of his enterprise, Mr. Barera started linking up with other entrepreneurs of telecentres throughout the country. He wanted to share knowledge and challenges, to find solutions to difficulties he encountered, such as a lack of interest for ICTs in local communities, a lack of web-content in the national language, Kinyarwanda, a lack of content directly related to local issues, concerns and interests, lack of funding, and the high cost of internet connections. Together with 2 university colleagues, he founded the Rwanda Telecentre Network (RTN). This non-profit organization aims to strengthen and support telecentres in rural and semi-urban areas, and more globally envisions a society where all citizens, urban and rural, are empowered by digital skills. In just 6 years, the organization has grown to employ 25 people, has 140 mobilized and connected members, and works with national and international partners, such as the Rwandan government, the Telecentre.org foundation, the United Nations Economic Commission for Africa, and the Technical Centre for Agricultural and Rural Cooperation EU-ACP. Today, the RTN helps set up telecentres, strengthening and supporting them through a knowledge-sharing environment, and creates locally adapted and relevant ICT content, trainings, advocacy and awareness raising.

The experiences of the Nyamata Telecentre and the RTN provide crucial lessons about entrepreneurship, and the support and enabling environment that rural enterprises and organizations need. Driven by his passion, with hard work and a clear vision, Paul Barera took advantage of Rwanda's enabling environment for small businesses in the field of ICTs. His telecentre created jobs in Nyamata, empowered local communities through access to information and communication tools, and increased their employment opportunities by providing them with ICT skills. It also reinforced and helped the creation of local enterprises by being a delivery hub and providing Business Development Services (BDS). Since 2006, with the Rwanda Telecentre Network, these positive impacts are being spread across Rwanda by the creation and the support of small telecentres in numerous rural areas.

Section 1: Introduction and Context

1.1 Introduction

The Nyamata Telecentre is a private enterprise created in 2004 in the village of Nyamata, located 24 kilometres from Rwanda's capital Kigali.[1] Its founder, Paul Barera, wanted to create a telecentre in a rural area that would contribute to rural development by giving access to Information and Communication Technologies (ICTs) to local communities. To achieve this goal, his telecentre developed a variety of ICT and non-ICT, public and private services, for the population of Nyamata and of neighbouring villages. In only 8 years, the Nyamata Telecentre grew from a very small enterprise of one manager and one employee, fighting to sustain their ICT services and trainings, to successful business of 25 employees delivering a variety of services to 100 visitors a day, including Business Development Services (BDS), in partnership with the Rwandan government and other national businesses, such as banks and insurance companies.[2]

In 2006, the founder of Nyamata Telecentre felt the need to network with other entrepreneurs of rural telecentres in Rwanda to share experiences and find solution to challenges threatening the sustainability of his enterprise, such as recurring financial difficulties. With 2 friends from university, Paul Barera created the Rwanda Telecentre Network (RTN), a non-profit organization located in Kigali, whose goal is to reduce the digital divide between urban and rural areas in Rwanda, and to empower rural communities and businesses with ICT-based services, knowledge, and skills. To fulfil this vision, the RTN developed a variety of activities to strengthen and support Rwandan telecentres in rural and semi-urban areas in their delivery of a variety of ICT and non-ICT services. The RTN is today a successful network of 140 telecentres coordinated by 25 employees, solidly working in partnership with the Rwandan government.

The Nyamata Telecentre and the RTN were created in a very specific context, both challenging and conducive. Rwanda is a country marked by civil turmoil and the genocide of 1994, which severely affected its social and economy fabric. Rwanda is also the African country with the highest population density, where 70 per cent of the population are farmers,[3] and 87 per cent live in rural areas.[4] The country is landlocked, and the natural resources are meagre and overexploited. The Government intends to transform Rwanda into a middle income country and a knowledge-based economy by 2020; in 2000, it published a broad development programme, where ICTs are highlighted as one of the means to achieve this national goal.

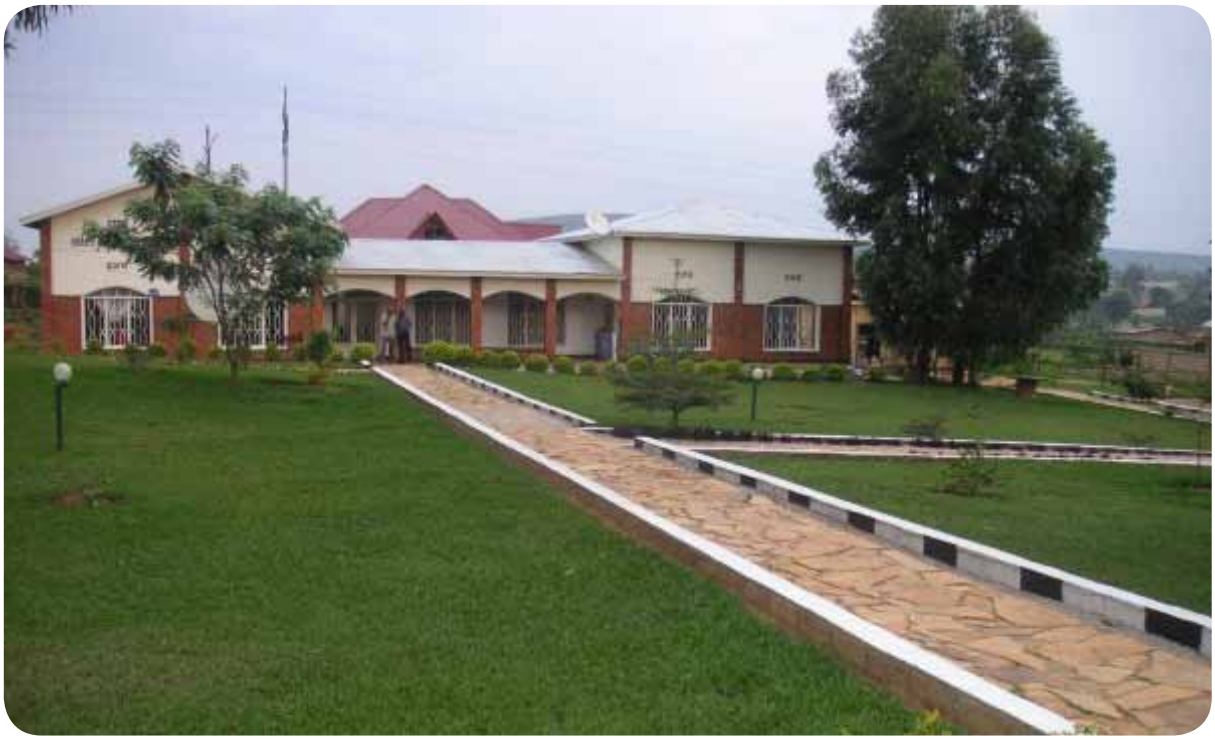
1 P. Barera, interview, 9 August 2012.

2 P. Barera: "Rural transformation processes: can we learn from other experiences?", Presentation for Brussels Rural Development Briefing, *Major Drivers for rural transformation in Africa: Job creation for rural growth*, No. 24, 14 September 2011.

3 *US$39.8 million from IFAD to boost agriculture in Rwanda*, IFAD, 2011, http://www.ifad.org/media/press/2011/64.htm (accessed 7 August 2012).

4 *Rural poverty in Rwanda*, Rural Poverty Portal IFAD, http://www.ruralpovertyportal.org/web/rural-poverty-portal/country/home/tags/rwanda (accessed 4 July 2012).

The founders of RTN and the Nyamata Telecentre took advantage of this enabling and stimulating environment. Decision-makers perceive ICTs as a major contributor to the country's development. The creation of small businesses, such as rural telecentres, is therefore encouraged through simplified registration and other administrative procedures, and increased accessibility to loans. Indeed, rural telecentres have a considerable potential to accelerate rural development: they can empower local communities by providing them access to information and means of communication; increase the employment opportunities of villagers by providing them ICT skills that are needed for an increasing number of jobs; support the creation and sustainability of rural enterprises by being a hub where products and services can be bought and sold, and by providing Business Development Services; and reduce rural to urban migration as more jobs are created in villages.



1.2 Context

Rwanda is a small country (26, 000 km^2) of over 10 million inhabitants. With 407 people per square kilometre, in 2011 it was the African country with the highest population density.[5] In 2006, an estimated 87 per cent of Rwandans lived in rural areas.[6] On average, a mid-sized village in Rwanda has 5,000 inhabitants, most of whom are youth (65 per cent are under 35 years old), and subsistence farmers (89 per cent).[7] Poverty is widespread and 62 per cent earn less than USD 2 per day.[8] Only 1.3 per cent of villagers have access

5 *About Rwanda*, UNDP, http://www.rw.undp.org/content/rwanda/en/home/countryinfo/ (accessed 10 January 2013).

6 Op. cit., *Rural poverty in Rwanda*, Rural Poverty Portal IFAD.

7 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

8 Ibid.

to electricity at home, and only 1.8 per cent are internet users; although 30 per cent use mobile phones.[9]

The country's recent history is marked by the 1994 genocide, which killed 1 million inhabitants, and caused over 2 million to flee.[10] Since then, the government led by the Rwandan Patriotic Front (RPF) and the President, General Paul Kagame, are concentrating their efforts on national reconciliation and economic growth.

Today, the country is widely recognized for its successful post-conflict social and economic reconstruction. In 2011, Rwanda's growth rate reached 8.6 per cent and GDP per capita was USD 504[11] (up dramatically from USD 209 in 2000).[12] Industry has grown the most because of sharp increases in mining and construction, and the service sector is also booming. While agriculture is declining, it remains important; between 2006 and 2011 it contributed to 35 per cent of the GDP, 45 per cent of exports, and employed 73 per cent of the population.[13] Another important achievement between 2006 and 2011 was a 12 per cent decrease in the poverty rate, which concerns now less than 50 per cent of the population.[14] Rwanda is also among the countries that are close to achieving the goal of universal primary education,[15] and its employment rate is high, with 73 per cent of the population between 15 and 24 years old and 93 per cent of those over 25 years old gainfully employed.[16]

Yet, some development indicators remain low, and in 2011 Rwanda was ranked 166th in the Human Development Index. In particular, life expectancy at birth was 55.4 years old and the adult literacy rate just over 70 per cent.[17] Inequalities are high, as 50 per cent of the national wealth remains concentrated in the hands of the richest 10 per cent.[18] Furthermore, the country still relies on international grants, which constitute 40 per cent of the national budget.[19]

Conditions of rural areas in Rwanda

Rapid population growth of 2.9 per cent per year and high population density stand out as the main challenges.[20] The pressure on land is high, and its meagre natural resources are erexploited.[21] The typical Rwandan agricultural unit is a family farm producing mainly food crops on an average plot of one hectare.[22] These features, combined with

9 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

10 Op. cit., *About Rwanda*, UNDP.

11 *Rwanda, Country at a glance*, The World Bank, 2013, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/RWANDAEXTN/0,,menuPK:368714~pagePK:141132~piPK:141107~theSitePK:368651,00.html (accessed 4 July 2012).

12 Republic of Rwanda, Ministry of Finance and Economic Planning: *Vision 2020,* Kigali, 2000, p.3

13 Op. cit., *Rwanda, Country at a glance*, The World Bank, 2013.

14 Op. cit., *About Rwanda*, UNDP.

15 UN: *The Millennium Development Goals Report 2011*, New York, 2011, pp.4, 41.

16 *Rwanda, Key Indicators of the Labour Market,* ILO, http://kilm.ilo.org/kilmnet/ (accessed 31 August 2012).

17 UNDP: *Human Development Report 2011, Sustainability and Equity: A better Future for All*, New York, 2011, pp.129, 141, 160.

18 Op. cit., *About Rwanda*, UNDP.

19 Op. cit., *Rwanda, Country at a glance*, The World Bank, 2013.

20 Op. cit., UN, 2011, p.164.

21 Op. cit., Republic of Rwanda, Ministry of finance and economic planning, 2000, p.13.

22 Op. cit., *Rural poverty in Rwanda*, Rural Poverty Portal, IFAD.

deterioration of the natural capital and scarce land, have augmented food insecurity and poverty. Food insecurity affects 28 per cent of the rural population,[23] (versus 22 per cent of urban dwellers),[24] and poverty concerns 66 per cent of the rural population[25] (versus 12 to 19 per cent in urban areas).

Farmers, who make up 70 per cent of the national population,[26] and 89 per cent of the rural population,[27] also face specific challenges. The climate is erratic, modern agricultural technologies are lacking,[28] accessing markets and related information is difficult, and public infrastructure is under-developed.

In 2009, only 9 per cent of Rwanda's population and 1 per cent of its rural population had access to electricity.[29] The main source of energy production is wood, which has severe negative impacts on the environment.[30] This has led the government to start promoting, in 2006, alternative sources of energy production in rural areas, such as solar and wind power.[31] While road density in Rwanda is among the highest in Africa, rural areas are not well connected and access to markets is still difficult for most of the population.[32]

In 2000, the government's *Vision 2020* development programme stated that Rwanda was to become a middle-income country by 2020, with an income per capita of 900 USD per year,[33] and a knowledge-based economy. The main means to achieve these goals are: "(i) deepening reforms, including in the business environment; (ii) investing in major infrastructure (power, transport, and ICTs); (iii) increasing agricultural productivity; and (iv) investing in skills development for economic modernization".[34]

ICTs thus have a central role in the *Vision 2020*, as key to achieving national development goals. In particular, the government intends to use ICTs to: develop e-governance; improve educational and capacity-building opportunities with distance and other new types of learning; and to facilitate business. ICTs are to be developed in every part of the country, and their access prices lowered to improve information dissemination and communication across the country, support the private sector, and attract foreign investors.[35]

To stress the importance of ICTs and ensure their development, the Rwandan government established 4 National Information and Communication Infrastructure (NICI) plans (also called ICT plans) that specify the improvements to be made over 5-year periods. The first NICI (2000-2005) focused on the creation of an enabling environment for ICT

23 Op. cit., *Rural poverty in Rwanda*, Rural Poverty Portal, IFAD.

24 *Rwanda, Overview,* World Food Programme, http://www.wfp.org/countries/Rwanda/Overview (accessed 28 August 2012).

25 Op. cit., *About Rwanda*, UNDP.

26 *US$39.8 million from IFAD to boost agriculture in Rwanda*, IFAD, 2011, http://www.ifad.org/media/press/2011/64.htm (accessed 7 August 2012).

27 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

28 Op. cit., *Rural poverty in Rwanda*, Rural Poverty Portal, IFAD.

29 *Increased access to electricity for the rural population*, Belgian Development Agency, http://www.btcctb.org/en/casestudy/increased-access-electricity-rural-population (accessed 26 July 2012).

30 Republic of Rwanda and European Community: *Country Strategy Paper and National Indicative Programme for the period 2008-2013*, Lisbon, 2007, pp.4, 10.

31 UN and ICC: *An investment Guide to Rwanda, Opportunities and conditions*, New York and Geneva, 2006, p. 16.

32 Ibid. p. 19.

33 Op. cit., Republic of Rwanda, Ministry of finance and economic planning, 2000, p.3.

34 Op. cit., *Rwanda, Country at a glance*, World Bank, 2013.

35 Op. cit., Republic of Rwanda and European Community, 2007, pp. 59, 62.

projects. The NICI II (2006-2010) was centred on the development of infrastructure, such as fibre optic cables. The 3rd and current NICI (2011-2015) concentrates on "the provision of technology-related service industries".[36] This plan addresses 5 fields, managed by 5 different working groups, including ICT experts and stakeholders: ICT Skills Development, Private Sector Development, ICTs for Community Development, E-Government, and Cyber Security.[37] The field of ICTs for community development is "focused on awareness, availability and affordability of ICT services, especially in remote areas",[38] and is linked with the field of Private Sector Development, as the government wants to work with private entrepreneurs to develop ICTs in rural areas. The RTN actively participates in the formulation and implementation of these governmental plans.

36 P. Barera: "Rwanda: A network of Telecentres for a new economy", Blog post, 9 June 2011, http://community.telecentre.org/profiles/blogs/rwanda-a-network-of?xg_source=activity (accessed 30 July 2012).

37 C. T. Otieno: "The Rwanda ICT Strategy and Plan for 2010-2015 under development", Blog post, 22 June 2012, http://community.telecentre.org/profiles/blogs/the-rwanda-ict-strategy-and-plan-for-2010-2015-under-development (accessed 23 August 2012).

38 Ibid.

Section 2: Analysis of the Catalyst

The personal relationship between the founders, and their common vision, link the Nyamata Telecentre and the RTN. Paul Barera created the RTN because he needed to connect with other entrepreneurs in ICTs to overcome challenges faced. The network allows telecentre entrepreneurs to share difficulties, solutions, and lessons learned to strengthen their micro enterprises, and to deliver more varied, and better adapted ICT and non-ICT services to rural populations, which in turn improve their living and working conditions, as well as their employment opportunities.

A) The Nyamata Telecentre

2.1 Why was it created?

Purpose

The goal of the Nyamata Telecentre is to reduce the digital gap between urban and rural areas and contribute to rural development through the creation of a specific type of rural telecentre. In general, telecentres are "public places where people can access computers to use the internet and other digital technologies, that enable them to gather information, learn, and communicate with others while they develop essential digital skills".[39] However, Paul Barera wanted his telecentre to deliver more than just basic ICT services; he also wanted to improve the delivery of services and products between the government, businesses and local communities, as well as the information and communication flows between them.

Gradually, Mr. Barera made the Nyamata Telecentre a local hub where different actors can deliver and purchase products, services and information, so that the population of Nyamata and of surrounding villages spend less time and money traveling to obtain them. Further, with time, as local communities improve their capacities to communicate through ICTs, they will also have better opportunities to express their opinion and be heard by the central government.[40] Concretely, the Nyamata Telecentre is a place where people can access a variety of services - such as internet access and training, banking and insurance services.

Another important goal Paul Barera had when he founded the Nyamata Telecentre was to "create his own job as well as jobs for others".[41] This goal is of particular relevance in Rwanda, given its sizable rural to urban migration.

Relevance

Reducing the digital gap with urban areas by creating a rural telecentre does not simply mean providing internet access to villages, but also empowering rural communities and increasing their employment opportunities.

39 *Rwanda Telecentre Network,* RTN, 2012, http://rtnrwanda.org/index.php?option=com_content&view=article&id=72&Itemid=95&lang=en (accessed 25 June 2012).

40 Op. cit., P. Barera: "Rwanda: A network of Telecentres for a new economy", 2011.

41 P. Barera, interview, 9 August 2012.

Villagers are empowered by the presence of a hub delivering ICT and non-ICT products and services on many grounds. First, they can obtain valuable information through the internet on local or national political issues or on work-related issues, such as agricultural prices. Second, villagers can communicate through access to new communication technologies. They can share news with families and friends, network and share with business partners, develop information and broadcast it on the web, and make their opinion heard at different levels on various online platforms and forums. Third, people from rural areas save money and time as products and services, such as administrative documents, are made available via their village telecentre, thus eliminating the need to travel to large towns to access them.

Telecentre services can also increase employment opportunities in rural areas: ICT skills enable the local population to apply to more types of jobs as skilled workers. These skills can also support villagers to open new enterprises, or strengthen the management capacities of existing ones. BDS provided in the Nyamata Telecentre contribute to the reinforcement and creation of local micro, small and medium enterprises (MSMEs). Finally, by providing an online and physical platform to buy and sell services and products, the telecentre increases the possibilities for businesses to sell and adapt themselves to local demands.

2.2 How was it created?

The founder

Paul Barera is a Rwandan who was born in Congo due to the conflicts in Rwanda from the 1970s to the 1990s, but returned to Rwanda as an adolescent. In 1998–2000, he worked for the local government of the Bugesera District, on local social and economic development, and acquired a practical knowledge about local development. He then studied management until 2004 at the Institute of Science, Technology and Management (KIST) of Kigali, where he developed a strong interest in ICTs. He realized that ICTs could be of major support to rural development, and decided to engage in this field: "I had this theory in mind and I wanted to prove it", he explains.[42] In 2012, he completed a 2-year Master in Development studies at the National University of Rwanda to increase his knowledge of local development theories and practices, and thus reinforce his current work with the Nyamata Telecentre and the RTN.

Creation – Initial opportunities, support and challenges

Paul Barera founded the Nyamata Telecentre in 2004. In the last year of his studies at the KIST, he started thinking of establishing his own business to create employment for himself and others. He thought of creating one in a rural area, as there were already considerable investments in cities, and competitors there were more numerous.

Just before graduating, Paul Barera responded to an advertisement from the Academy for Educational Development (AED), a non-profit organization based in the USA, working on health, education and economic development, which was offering support to people who wanted to establish ICT centres in rural areas. He applied, and was among the

42 P. Barera, interview, 9 August 2012.

selected entrepreneurs. The AED provided him with 6 computers, 6 chairs, 6 desks, a printer, satellite communication technology (Very Small Aperture Terminal, VSAT) and a backup power system to help him set up his telecentre in Nyamata.[43] The management agreement between Paul Barera and the AED stated that this equipment would become his property after a year if, based on an evaluation from the AED, the telecentre was economically sustainable and proved to have a positive impact on the local community. He also received training from the U.S. Agency for International Development (USAID) on how to manage telecentres.[44]

As the initial support was not large and Paul Barera could not find further assistance, the Nyamata Telecentre started small. In the beginning, it was only staffed by him and one employee, and delivered only basic ICT services, such as internet access, ICT trainings and secretarial services.

Among the very first challenges encountered by Paul Barera was infrastructure. Electricity was available in the village, but not continuously due to frequent shortages in the country. Another important challenge was the unreliable and expensive internet connection. Fortunately electricity distribution eventually improved across Rwanda, and the price of internet connections decreased due to the increasing competition among providers, and the telecentre was able to benefit from these developments.

43 P. Barera: "Sharing my experience in running rural ICT enterprise/Telecentre", Blog post, 9 May 2011, http://www.share4dev.info/telecentres/index.php?option=com_content&view=article&id=400:sharing-my-experience-in-running-rural-ict-enterprisetelecentre&catid=114:on-sites-services&Itemid=391&lang=fr (accessed 25 June 2012).

44 Ibid.

The Nyamata Telecentre also faced difficulties related to the local context. Most people in the village and its surroundings had only little interest in ICTs. The majority were not familiar with ICTs and their advantages; some were convinced that the services were too expensive; and others thought that ICTs were reserved for elites. To raise awareness about the usefulness of ICTs for villagers, Paul Barera organized coffee meetings at the telecentre where people could just gather, drink coffee, and informally discuss a number of ICT-related issues. These meetings were also means to get people used to the presence of the centre and view it as accessible.

Another crucial challenge was a lack of sufficient funds. Apart from the initial support from the AED and the USAID, the Nyamata Telecentre did not receive any external funds. However, as the centre was the only one providing ICT trainings in the district, Paul Barera was able to make his enterprise profitable during its first year.[45] Then, as the Nyamata Telecentre started growing and was judged as promising, he became the owner of the equipment initially made available by the AED, and obtained several loans from local banks. ICT training was the main source of revenue for the Nyamata Telecentre, but people would come only a few times for these trainings, and would stop once they had acquired basic ICT skills. Also, during the second year, competitors providing similar trainings appeared.

To find other sources of income, Paul Barera diversified the offer of services. In particular, he:

- Made available a cafeteria, meeting rooms and a garden that he rented out for various events;
- Started delivering mobile ICT trainings as he realized that many people could not come to the Nyamata Telecentre because it was too far from their home. He installed a generator in a car, took 2 computers and went to different places, where he delivered trainings. The scale of this project was very small but it gave a chance to an increasing number of people to access ICTs;
- Started to represent some businesses by making their services available from his telecentre. He thus concluded a partnership with the National Electricity Company of Rwanda ELECTROGAZ: through mobile phones, the telecentre started to sell electricity on the account of ELECTROGAZ to villagers, who thus no longer needed to travel to the capital Kigali to purchase electricity.[46] The Nyamata Telecentre also concluded an important partnership with a national company named Business Communication Solutions (BCS), an ICT services provider.[47] The ELECTROGAZ and BCS partnerships were hard to obtain because at first, these big companies could not see the potential of investing in only one telecentre, located in one village, with few clients. Paul Barera convinced them that he would make his centre grow, attract more visitors, and thus more clients for ELECTROGAZ and BCS. In addition, he emphasized the crucial fact that delivering services through the Nyamata Telecentre would reduce their operational costs.

45 Op. cit., P. Barera: "Sharing my Experience in running rural ICT enterprise/Telecentre", 2011.

46 Ibid.

47 *Home*, Business Communication Solutions, 2013, http://www.bcs.rw/ (accessed 21 August 2012).

Paul Barera's enterprise also faced challenges encountered by all telecentres in the country, and which are more complex to resolve for one entrepreneur alone. The low literacy levels was one of them, as a number of villagers could not easily read and write, and thus could not effectively use ICTs. The lack of local web-content on the internet was a barrier too, as people from rural areas could not find information related to their interests and needs. Also, most of ICT content is in English or French whereas local communities can often only read in Kinyarwanda.

2.3 How does it currently work?

Structure and activities

While creating and sustaining the Nyamata Telecentre, Paul Barera developed a plan for structuring telecentres in rural areas to be economically sustainable, and thus able to provide relevant services of good quality to villagers. This model, now promoted by the RTN and based on the successful example of the Nyamata Telecentre, considers that productive and useful telecentres:

- Are locally owned by an entrepreneur to ensure economic sustainability, as it is the responsibility of the entrepreneur to obtain financing and resolve challenges to sustain the company. Also, if a telecentre is privately owned, the manager cannot expect guaranteed government or donor support, as it is the case for public-owned telecentres;
- Not only deliver basic ICT services, such as ICT trainings, access to computers and to the internet, but also a variety of other public and private services, to ensure diversification of telecentre revenues.[48] One type may not bring enough income to the telecentre, but the addition of several other types of services could. This variety also attracts different types of clients to the telecentre; people who can then discover and become interested in other services offered by the telecentre. Additionally, if the local population begins demanding less of one service, the income generated from other services offers time to implement new services in order to compensate the loss of income;
- Start small. It calls for creating several small telecentres in several different places, including if possible remote telecentres. Among others, small and locally owned centres are better linked with the local communities and can deliver services that are more adapted to the local demand.

Today, the Nyamata Telecentre is still owned by its founder, but since 2009 it has been managed by another person so Paul Barera can invest himself full time into the development of the RTN.

Delivery hub

The general idea promoted and implemented by the Nyamata Telecentre is that an ICT centre can link the rural with the urban, and improve local rural linkages (virtual and physical) among rural producers and consumers, through better product and service delivery. For

48 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

instance, an individual can sell his or her products or services on the Nyamata Telecentre premises, or advertise them online. Or an enterprise that would like to reach the population of Nyamata and its surroundings, but is unable to establish a branch there, can partner with the telecentre, and have the telecentre deliver some of its services.

For instance, the Nyamata Telecentre currently works in partnership with a bank to allow people to deposit and withdraw money, or apply for loans directly from the telecentre without having to travel to Kigali. The telecentre also delivers postal and insurance services, and as mentioned earlier, sells electricity in partnership with ELECTROGAZ. It also offers business services supporting local enterprise creation and sustainability, business planning, marketing, finances, taxes and various declarations. Lastly, it now rents space for community meetings and gatherings.[49]

Prices and users

According to Paul Barera, the prices of the Nyamata Telecentre's services are accessible for most villagers. For instance, using a computer for an hour costs 300 Rwandan Francs (roughly USD 0.50). Typically, users stay for 10-20 minutes and thus often pay less than 100 Rwandan Francs.[50]

Nyamata Telecentre's users are mostly young people. According to Paul Barera, youth are those most interested in ICTs, and the most ready to spend money to learn about these technologies and browse the internet. Increasingly, older people and women are also coming to the Nyamata Telecentre for ICT trainings, to use social media or to look for a variety of information such as market prices.

B) The Rwanda Telecentre Network

2.1 Why was it created?

Purpose

The RTN promotes ICTs as tools for rural development. Its objective is to narrow the digital divide existing between urban and rural areas, as it envisions "a society in which all people are equitably empowered by ICT skills and usage".[51] To fulfil this vision, it wants to be "a focal link between local telecentres, government, rural ICT advocates and other initiatives that aim at promoting digital inclusion in Rwanda".[52] This role can ensure the coordination of all projects related to ICTs for development at national level, and also help the RTN achieve its several specific goals.

The RTN's first aim is to support and strengthen existing telecentres in rural and semi-urban areas. The idea, based on Paul Barera's experience with the Nyamata Telecentre, is that networking is a key element to ensure the sustainability of telecentres in Rwandan

49 P. Barera interview, 9 August 2012.

50 Ibid.

51 *Members*, RTN, 2006, http://www.ugabytes.org/rtn/member.html (accessed 30 July 2012).

52 *Mission*, RTN, 2006, http://www.ugabytes.org/rtn/mission.html (accessed 30 July 2012).

rural areas.[53] Mr. Barera realized that it was crucial for telecentre entrepreneurs to jointly find solution to common challenges, and to unite forces to advocate for their business and activities.

The RTN's second goal is to support the creation of new telecentres in rural areas, by replicating the model of the Nyamata Telecentre in other villages. The mission of each telecentre member of the RTN is "to strengthen the social, economic, educational, and cultural life of their communities through technology".[54]

Relevance

As demonstrated by the Nyamata Telecentre's experience, strengthening and creating telecentres in numerous villages can indeed boost rural development. In particular, a telecentre provides an alternative source of income to agriculture to the local entrepreneur managing it; empowers local communities by providing them with an easy access to information, communication means, and various services and products; and constitutes for the government and a variety of organizations and enterprises a physical and virtual environment where they too can offer information, services and products, and find the same from the local community.[55] At the country level, supporting and creating rural telecentres also decreases rural to urban migration, as a single telecentre needs at least 3 full-time staff, and helps generate employment through ICT skill training and Business Development Services.[56]

53 Op. cit., *Members*, RTN, 2006.

54 Op. cit., *Mission*, RTN, 2006.

55 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

56 Ibid.

The RTN's work is also very well anchored in the general development strategy of its country, aimed at moving from an agrarian to a knowledge-based economy.[57] Access to ICTs for people living in rural areas was adopted as an important step to reach this national goal in the NICI II, and telecentre creation was a means highlighted at the 1998 and 2006 National workshops on information and communication technologies policy and strategy.[58] Telecentres are thus perceived at the national political level as a major tool for the country's general economic growth, as well as for e-government and e-governance.[59]

2.2 How was it created?

Founders

In 2006, 2 years after the creation of the Nyamata Telecentre, Paul Barera felt the need to share his experience with others exercising the same activity in Rwanda. He and 2 of his classmates from the Kigali Institute of Science and Technology, Falcon Ndirima and Charles Mugisha, founded the RTN to link all telecentre entrepreneurs in the country, and thus help each other to ensure the sustainability of their business by discussing challenges, solutions, and collaborating. In 2009, the RTN was officially registered as a Rwandan non-profit organization.

Creation - Initial opportunities, support and challenges

The Telecentre.org Foundation and The Technical Centre for Agricultural and Rural Cooperation EU-ACP (CTA) supported the creation of the RTN.

The Telecentre.org Foundation aims to empower actors working for or supporting telecentres around the world, such as managers, coordinators, governments, through capacity building, an online learning centre, networking, research, advocacy and the development of pro-poor services and skills trainings, to "amplify the voice of grassroots communities".[60] Support from the Telecentre.org Foundation to start the RTN was not hard to obtain because setting up telecentre networks is a core part of its mandate. Paul Barera and his partners contacted the Telecentre.org with their project proposal and received financial aid as well as knowledge and technical capacity.

Support from the CTA was more difficult to obtain because its field of intervention is not directly related to ICTs. The CTA is an international institution led by the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU), whose main goal is to "advance food and nutritional security, increase prosperity and encourage sound natural resource management in ACP countries […]. [It provides] access to information and knowledge, facilitates policy dialogue and strengthens the capacity of agricultural and rural development institutions and communities".[61] Paul Barera and his partners initiated

57 Op. cit., Republic of Rwanda, Ministry of Finance and Economic Planning, 2000, p.9.

58 *About us,* RTN, 2006, http://www.ugabytes.org/rtn/aboutus.html (accessed 28 August 2012).

59 Ibid.

60 *Programme Pillars*, Telecentre.org Foundation, http://www.telecentre.org/about-us/programme-pillars/ (accessed 25 June 2012).

61 *Who we are*, CTA, 2013, http://www.cta.int/en/About-us/Who-we-are (accessed 29 August 2012).

collaboration with the CTA at a forum held in Zambia, where they successfully convinced CTA members that telecentres could be valuable tools for agricultural and rural development.

In addition to this support, in 2006 the Rwandan Government stated that it wanted to create as many telecentres as possible in rural areas, but without draining the public funds. Paul Barera was aware of this national plan and its related difficulties, hence while setting up the RTN, he planned to establish a fruitful collaboration with the government to support its telecentres and create new ones across the country based on the successful model and experience of the Nyamata Telecentre. Today, the RTN works in solid partnership with the government on common goals related to ICTs for development, such as developing a knowledge society using ICTs, and increasing access to ICTs in rural areas.

2.3 How does it currently work?

Structure and activities

The RTN is based in Kigali. It has 25 employees, including Paul Barera, the Executive Director of the network, who is also a member of the Trustees Board tasked with guiding the network and making strategic decisions. As with other mid-level and large organizations, the network also has an Advisory Board consisting of external, independent advisors.[62]

In 2010, the RTN conducted a study to identify all existing telecentres in Rwandan rural areas, and organized a national forum to invite all identified rural telecentre entrepreneurs. The network presented its activities and extended membership offers to these entrepreneurs to receive RTN's support and participate in its projects. Today, the network has over 140 members, of whom approximately 30 per cent are women, and 80 per cent are under 35-year-old.

To support and strengthen the capacities of rural telecentres across the country, the RTN currently offers a variety of services:[63]

- Support to set up telecentres – For instance, the RTN supports local entrepreneurs in the process of setting up a small telecentre business, from technical advice about ICTs, financial services and administrative procedures, to services to offer. It also shares experience and advice, and links them with other telecentre entrepreneurs in the network;
- Knowledge sharing among telecentre entrepreneurs and the local communities – The network is an enabling environment where entrepreneurs and the population of rural areas can exchange information, experiences and challenges, and jointly find solutions;
- Continuous capacity building of telecentre entrepreneurs and staff – "By providing diverse technical and business trainings and resources".[64] The RTN help its members to make their business sustainable and adapted to local demand. For instance, it recently worked with the Ministry of Agriculture and Animal Resources (MINAGRI)

62 P. Barera, interview, 9 August 2012.

63 *What we do,* RTN, 2013, http://www.rtnrwanda.org/index.php/en/explore/2011-08-15-05-52-35 (accessed 19 February 2013).

64 Ibid. (accessed 25 July 2012).

and the CTA to organize a week of training on new online technologies, such as Web 2.0 Applications Social Media. This type of workshop also serves as a training of trainers as the RTN's members attending are then supposed to disseminate their new knowledge in their communities.[65] The RTN also trains telecentre staff to help local communities create websites and blogs to share knowledge and communicate with each other. Local staff also specifically help farmers access information related to their work, and use ICTs to communicate with other farmers in the country. The RTN now has a formal agreement with the MINAGRI to provide these training to farmers from numerous telecentres.

Trainings of telecentre managers and staff are conducted through emails and information available on the internet, but also physically, during an annual forum bringing together all the network members, and at specific trainings organized throughout the year. When such specific trainings are organized, the RTN posts an advertisement, so that telecentre entrepreneurs can apply, and makes a selection based on specific criteria.[66]

At the moment, the RTN mainly trains telecentre entrepreneurs in the field of ICT services, such as how to enable villagers to use the internet, and how to use specific word processing or accounting software. These classical ICT services remain important because most telecentre users are "students researching academic topics and business people seeking to establish contact with other companies or promoting their products and services", and need these basic ICT skills;[67]

- Development of local content – The network tries to understand what type of local content is needed and requested in rural areas, then contributes to its creation, and packages it to make it available to telecentre entrepreneurs and users. For instance, it has developed a variety of information and articles on ICT for development in English and Kinyarwanda, which everyone can find on the internet;[68]
- Advocacy – The RTN calls for an enabling economic and legal environment for telecentres, and raises awareness about ICTs at the local level. It regularly takes part in radio and television debates to explain ICTs' potential to improve employment opportunities as well as working and living conditions in rural areas.[69]

As the RTN does not charge any membership fees, and thus does not have sufficient income to offer its services free of charges to all telecentres entrepreneurs and staff, telecentres receiving its support to deliver specific services to their local communities pay for that support.[70]

65 *Web 2.0 learning workshop increases Rwanda presence online*, Karibu2, the RTN, 2011, http://karibu2.wordpress.com/2011/11/28/web-2-0-learning-workshop-to-increase-rwandas-online-presence/ (accessed 19 February 2013).

66 Ibid.

67 Op. cit., P. Barera: "Rwanda: A network of Telecentres for a new economy", 2011.

68 Ibid.

69 Ibid.

70 Ibid.

Projects

- Knowledge Network of Community Telecentres (KNACT)

  Since 2007, the RTN has been active in an initiative of the United Nations Economic Commission for Africa (UNECA) called the Knowledge Network of Community Telecentres, which aims to transform telecentres worldwide into knowledge hubs through which national institutions and local communities can communicate.[71] To achieve this goal, the RTN is working on the promotion of knowledge sharing among ICT stakeholders, as well as on the creation and dissemination of content related to local and agricultural issues. Mr. Barera is the current Chairman of this initiative, which is funded by the United Nations Development Account and implemented by 5 regional UN Commissions. This collaboration was initiated by the UNECA, who invited the RTN to a workshop on this initiative after having heard about its activities in Rwanda.

- 1,000 Telecentres

  In 2010, as deployment of government telecentres was not advancing as fast as authorities had planned, Paul Barera and the network thought of supporting this national effort by deploying 1,000 telecentres in rural areas by 2015. The aims of this project reflect RTN's main goals of narrowing the digital gap between rural and urban areas and bringing social, governmental and business services to villages. This major initiative is also directly creating employment in rural areas and helping decrease rural to urban migration.[72]

  These new telecentres replicate the model of the one in Nyamata. Each of them thus delivers various "public and private services, such as agriculture, e-government, banking, insurance, health, e-learning, rural business process outsourcing".[73] Each telecentre in the 1,000 Telecentres project is run by a local entrepreneur and has 5 to 25 computers, often alongside scanners, printers and other technical devices.[74] The already existing rural ICT access points are also to be developed into traditional and online services providers. For managers, the RTN remains a support, as the telecentres created are to be locally-owned so that entrepreneurs have a stake in making them profitable and sustainable; and small, so as to avoid under-utilization. These characteristics also ensure that the services delivered are adapted to the specific areas and communities.

  Telecentre entrepreneurs included in this project have different backgrounds, but the RTN has only 2 criteria to support potential ones: they need to have a minimum level of education, and, more importantly, to have a passion for ICTs. Paul Barera stresses that "if you are passionate about ICTs, we [the RTN] go with you!"[75]

  As creating telecentres in villages across Rwanda is also a clear aim of the government, the RTN is collaborating on this initiative with the Minister of ICTs and the Rwanda Development Board (RDB), which is the national organization that brings "together all the government agencies responsible for the entire investor experience under

71 P. Barera, interview, 9 August 2012.

72 Ibid.

73 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

74 Op. cit., P. Barera: "Rwanda: A network of Telecentres for a new economy", 2011.

75 P. Barera, interview, 9 August 2012.

one roof"[76] and aims to develop an enabling environment for private investors and businesses in Rwanda. Their collaboration seeks to ensure that policy eases the creation and work of rural telecentre entrepreneurs. It has already ensured Paul Barera's participation in the formulation of the NICI III,[77] which includes the 1,000 Telecentres project as one of its elements[78]. The RTN works with the national team implementing this 3rd national ICT plan,[79] which stresses the empowering potential of ICT services for villagers in remote areas.

- Telecentre Women: Digital Literacy Campaign

  Since 2011, the RTN has been collaborating with the Telecentre.org Foundation on an international project called "Telecentre Women: Digital Literacy Campaign". This initiative aims to empower women in rural as well as urban areas through technology and business skills to widen their economic and social opportunities, for instance by enabling them to create their own jobs. Globally, this campaign's goal is to train women in over 25,000 telecentres.[80] In Rwanda, the telecentres where the trainings should take place have already been targeted and the first trainings started in 2012, although partners to fund some of the planned trainings are still being sought.[81]

- BDS Centres

  Since 2012, the RTN is also in charge of managing 5 government telecentres in 5 districts of the Northern Province of Rwanda. In particular, the network is to ensure that each centre provides the following services: "ICT related training, information services, entrepreneurship development services, business advice and counselling, facilitating access to finance, facilitating access to markets, export development services, facilitating business registration, training on business skills".[82] Following this contract with the government, the RTN has also MSMEs development to its own activities, and thus encourages and supports its members to provide these types of services in their telecentres.

  This collaboration originated from the Rwandan Government's decision to privatize some of its telecentres in rural areas in 2012. These Community Multipurpose Telecentres (MTC) were set up in 2006, and were transformed in 2010 into BDS centres providing "extended services that improve and sustain the performance of

76 *History,* RDB, 2013, http://www.rdb.rw/about-rdb/history.html (accessed 2 July 2012).

77 P. Barera, interview, 9 August 2012.

78 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

79 Op. cit., P. Barera: "Rwanda: A network of Telecentres for a new economy", 2011.

80 Op. cit., Rwanda Telecentre Network, RTN, 2012.

81 P. Barera, interview, 20 August 2012.

82 *Telecentres to boost SMEs development in Rwanda*, RTN, 2012, http://www.rtnrwanda.org/index.php/en/news/98-rwanda-telecentre-network-rtn-to-manage-some-of-the-government-telecentres (accessed 25 June 2012).

the enterprise, its access to information, markets and technologies and its ability to compete",[83] to support MSMEs. As these public-owned telecentres did not prove to be economically sustainable, in 2012 the government, after publicly advertising the role, awarded management responsibilities to RTN.

Following this agreement, some of the government employees with specific skills in Information Technologies (IT) or in business development became RTN employees. In addition, the Rwandan Development Board supports the network more broadly through indirect funding, such as by providing scholarships to RTN members as well as other owners of small businesses who cannot afford some of the network's services.

- The Pan African Network

In 2011, the Rwanda Telecentre Network was elected to be the host of the Pan African Network (NetAfrica), a continental umbrella network for all national telecentre networks in Africa.[84] Paul Barera is the current Chair of NetAfrica, which is being registered as an independent organization in Rwanda. Its goal is to support (mainly through knowledge sharing, fundraising and advocacy) national telecentre networks in different African countries so they can become true engines of development.[85]

For the RTN, the NetAfrica initiative holds several advantages. In particular, as an international institution, it can raise funds and advocate internationally for ICTs for development, by reaching important development partners and organizations that smaller networks cannot approach. Further, it links the RTN with networks around the world, thus improving knowledge sharing and capacity building.

83 Op.cit., *Telecentres to boost SMEs development in Rwanda*, RTN, 2012.

84 *History,* NetAfrica, http://www.net-africa.org/?q=node/9 (accessed 29 August 2012).

85 P. Barera, interview, 20 August 2012.

Section 3: Assessment of the Catalyst

3.1 Main achievements

The achievements of the Nyamata Telecentre and the RTN are closely linked. First, the manager and staff of the Nyamata Telecentre are supported by RTN services. Thus, they can use the network to link themselves with other telecentres across the country and share knowledge and experiences; they can follow a variety of trainings; they benefit from the general enabling legal and economic environment that the RTN contributes to build through its advocacy and awareness raising activities; and the Nyamata Telecentre users can access locally relevant web-content created and disseminated by the network. Further, the achievements of the Nyamata Telecentre with ICTs for rural development also apply to the other telecentres set up or supported by the RTN.

A) Nyamata Telecentre

- About 8 years after its creation, the Nyamata Telecentre is a successful and economically sustainable enterprise. It started with 4 employees and 6 computers, and is now supported by 25 employees, and registers on average 100 visitors a day.[86] It has directly created 25 jobs in one village, besides indirect employment opportunities created by the services it delivers;
- More and more jobs now require computer skills, and the ICT trainings and subsequent certificates delivered by the telecentres enable the rural population to access such positions. For instance, someone from Nyamata can now find a job as a skilled worker in the capital Kigali,[87] and various companies are becoming interested in establishing their offices in rural areas where they can now find workers trained in ICTs;
- The Nyamata Telecentre has contributed to ICTs awareness and knowledge in the village and its surroundings. While the local communities at first thought ICTs were too expensive and reserved for upper classes, they now know how to use computers, the internet and other ICT tools, and understand how these technologies can benefit them;[88]
- The Nyamata and other rural telecentres have empowered local communities through access to information online. In Rwanda, much information is now available in the local language, and enables people from rural areas to be aware of what is happening in their region and country. Further, trainings on how to use social media for instance, are enabling local communities to create and disseminate information;[89]
- By delivering ICT trainings and BDS, the Nyamata and other rural telecentres strengthen local businesses, and contribute to the creation of new enterprises. These services

86 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

87 P. Barera, interview, 9 August 2012.

88 Ibid.

89 Ibid.

and trainings enable rural entrepreneurs to make their businesses more efficient and profitable, or to start new ones. For instance, after receiving training on how to use a word processor or accounting software, trainees can set up a business selling secretarial services;[90]

- By being a delivery hub, the Nyamata Telecentre contributes to the success of a variety of small and bigger businesses working with it. Individuals and companies now have a reliable market place to sell, buy and exchange products, services and information. Not only can they physically use the telecentre to deliver their services, they can also advertise them on the internet as it is now more widely used in the area, which contributes to a better match between supply and demand.

B) The Rwanda Telecentre Network

- 6 years after its creation, the RTN is a successful and growing organization. It started with 3 friends who met at university, and now has 25 employees and 140 members across the whole country.[91] It managed to identify, gather and mobilize these telecentre entrepreneurs to work together;
- The RTN created and sustained a useful knowledge network. Paul Barera explains that RTN members encounter the same challenges he faced at his beginnings, such as lack of support and lack of interest for ICTs among the local population. The RTN enables telecentre entrepreneurs from the start to share knowledge and experiences, find solutions to common challenges, and have a real say vis-à-vis decision-makers to advocate for a better legal and economic environment;[92]
- The RTN participates in the formulation and implementation of government plans and projects on ICTs for development, and can thus help ensure that the political and economic environment is enabling for small entrepreneurs located in rural areas. As a member of the implementation team of the NICI III, it contributes to implementing this enabling environment for rural telecentres.[93] The RTN also managed to make its 1,000 Telecentres project part of the national ICT plan and ensure the economic sustainability of government telecentres by applying the successful model used in Nyamata;
- The RTN directly contributes to rural job creation and the decrease of rural-urban migration because each telecentre set up in the context of the 1,000 Telecentre project creates at least 3 jobs, and already by 2011, 150 new telecentres were running;[94]
- The RTN also indirectly contributes to the improvement of living and working conditions in rural areas as telecentres empower local communities through access to means to get informed and communicate. It also strengthens and helps create small enterprises through ICT skills trainings and BDS.

90 P. Barera, interview, 9 August 2012.
91 P. Barera, interview, 20 August 2012.
92 Ibid.
93 Ibid.
94 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.

3.2 Future

A) Nyamata Telecentre

- The Nyamata Telecentre intends to remain a community telecentre based in a village, to continue its current activities, particularly the ICT trainings, e-government, banking services, and insurances services, and to remain a reliable delivery hub;
- Some funding challenges remain to guarantee the delivery of these various and numerous services, and the telecentre is thus always looking for support. However the Nyamata Telecentre is by and large economically sustainable, and covers its operational costs and basic expenses, such as internet connection and salaries.[95]

B) The Rwanda Telecentre Network

By contrast, the RTN intends to grow further. In particular:

- Increasing the number of telecentre entrepreneurs and employees reached by its trainings, as well as the number of trainings. To achieve these goals, the RTN is training a number of its members to enable them to train, in turn, other telecentre entrepreneurs and staff, and charge fees for it. The RTN would take a share of the benefits generated by these new trainings to sustain its current activities and implement new ones;[96]
- Making government services accessible, such as the possibility to pay taxes or register businesses from all telecentres across the country. As infrastructure is already available in all telecentres (i.e., premises, computers, and internet access) the RTN will mainly need to train telecentre entrepreneurs and employees, and disseminate information, which will be done through forums, meetings and capacity building, physically or by emails.[97]

The RTN also faces a number of challenges, namely:

- Finding partners and financial support for its numerous activities and services, such as deploying additional small telecentres across the country, guaranteeing capacity building to members, or ensuring they get the services they really need through local needs assessments, and the development of services and content accordingly. Paul Barera explains that the RTN has sufficient ideas, projects and technical capacities, but adequate funds are often lacking;[98]
- Meeting, linking, communicating and sharing with other networks of telecentres around the world. This is part of the job description of the Telecentre.org Foundation but, according to Paul Barera, as the foundation works at a global level, it lacks time to help individual networks like the RTN, and cannot offer enough capacity building.[99]

These 2 main challenges explain the hope the RTN has in NetAfrica, through which it wishes to access funding at the international level, and to learn and exchange with other such African networks.

95 P. Barera, interview, 9 August 2012.
96 P. Barera, interview, 20 August 2012.
97 Ibid.
98 Ibid.
99 Ibid.

3.3 Lessons learned

According to Paul Barera, to be successful, rural entrepreneurs should:

- **Have passion for their work –** Mr. Barera explains that the main reason for the Nyamata Telecentre's success is that he did not create it just to earn money, but because he believed and still believes in ICTs for development. As he says: "it is in my blood, it is my vision, it is my passion".[100] He explains that it is the same for the RTN: the network is successful because it is led by people who are passionate about ICTs for development. "When you have the passion for your project, you can do it. You have the motivation to manage challenges";[101]
- **Work hard –** Paul Barera invested all his time to create and sustain the Nyamata Telecentre and the RTN. According to him, too many young people in Africa want to enjoy life without making efforts and working hard;[102]
- **Have a clear vision –** Telecentre managers and other entrepreneurs should be clear about what their goals are, what they want their business to become, and then commit to it;
- **Do not be afraid of difficulties –** Challenges are natural for all entrepreneurs around the world, and they should not despair when they encounter a problem, but actively look for a solution;
- **Network –** Networking is key to successfully managing an enterprise. It enables entrepreneurs to share difficulties and lessons learned, meet and brainstorm with others doing the same kind of work to find appropriated answers. Paul Barera discovered that local entrepreneurs actually had important "psychological barriers (lower self-esteem, fear of failure, depression, etc.)"; [103] networking and sharing is crucial to discover that the others are experiencing similar problems and that they can be overcome;
- **Make one's business known as a success, so partners will seek collaboration –** Paul Barera explains that, "If you are looking for them [important organizations, associations, foundations], you don't get them. They have to look for you";[104]
- **View ICTs, like other businesses, as "a tool and not an end in rural development"[105] –** The economic sustainability and positive impact of each telecentre on the local communities rely on the relevance of their services.[106] These should be needed and requested by the local population, and be linked to current issues. If access to ICTs is seen as a goal in itself, and the manager only offers classical and global ICT services, the telecentre risks failing;
- **Look for solutions to overcome challenges within the local population –** Local communities can help solve many problems because they know the ground realities, are

100 P. Barera, interview, 9 August 2012.
101 Ibid.
102 Ibid.
103 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.
104 P. Barera, interview, 20 August 2012.
105 Op. cit., P. Barera: "Rural transformation processes: can we learn from other experiences?", 2011.
106 Ibid.

committed and physically present. Paul Barera realized that locals are best positioned to address development issues and can thus find innovative solutions to a variety of problems that they or local entrepreneurs encounter.[107]

The RTN's experiences demonstrate that:

- **Even minimum support from government or donors can considerably help social enterprises –** Paul Barera noticed that stakeholders and local communities favour the better-funded government telecentres instead of private telecentres, which makes it difficult for private entrepreneurs to find resources to sustain their activities in rural areas and tackle specific challenges, such as the lack of stable internet connection and community interest in ICTs.[108] Thus, small specific grants, practical services or technical support can be critical for small social entrepreneurs, particularly in the early phases;
- **Public-private partnerships are mutually beneficial –** According to Paul Barera, the Government and private entrepreneurs should work together to complement each other to achieve the goals of the Rwandan *Vision 2020*.[109] A good example of successful public-private partnership is the one that started in 2012, when the RTN became responsible for the management of 5 government telecentres;

107 P. Barera, interview, 9 August 2012.

108 P. Barera: "The Neglected Role of Local Entrepreneurs in Bridging the Digital Divide", Blog post, 20 May 2011, http://community.telecentre.org/profiles/blogs/the-neglected-role-of-local?xg_source=activity (accessed 30 July 2012).

109 Ibid.

- **An enabling environment for businesses is a major facilitator –** In Rwanda, the Government has been developing important electricity infrastructure, and electricity is thus available in all districts, which greatly facilitates establishing telecentres in semi-urban and rural areas. Further, the legal and financial environment enables small entrepreneurs to easily start their own business; the administrative procedure to open a telecentre, or any other enterprise, roughly takes 2 days. Moreover, bank loans are accessible as the government pushes for MSMEs' development. Concerning ICTs for development, the policies are well thought out and political willingness to develop this field is high. Paul Barera explains that the government is committed to support ICT-related projects, and that for instance it is fairly easy to get an appointment at the Ministry of Youth and Information and Communication Technology, and be heard and understood. Also, the entrepreneurship environment is stimulating as many young people are willing to start their own businesses;[110]
- **Businesses should start small, then gradually grow and diversify –** Starting small enables small entrepreneurs to create their own enterprise, even without much financial resources and in remote areas. Gradually, rural telecentres should diversify their offer of services because diversification generates several sources of income, and makes more and different types of clients come to the centre;

110 P. Barera, interview, 20 August 2012.

- **Local businesses should be locally owned –** Locally owned telecentres are most often economically sustainable because their manager and staff are motivated to sustain the business if they want to keep their job. They are also generally better linked with the local communities, and can thus deliver more adapted, requested and needed services;
- **ICTs are businesses contributing to rural development –** Access to ICTs empowers local communities which then become able to find information that interest them, such as local or national social, economic or political issues, agricultural prices or job vacancies. They can also communicate better and share news with families and friends; network with others or advertise their business or products; disseminate information about local issues; or express their opinions and be heard at the national and international levels. As products and services delivery hubs, telecentres save time and money for the local communities, who no longer need to travel far to obtain the same services.

  Also, telecentres in rural areas increase the employment opportunities of the local communities, strengthen, and even support the creation of local businesses. With ICT skills, people from rural areas can apply to more jobs as skilled workers, as more and more positions require ICT knowledge. ICTs skills, such as mastery of the use of word processing or accounting software, can also enable people to open new businesses, or strengthen the management of existing one. BDS delivered in telecentres also contribute to the creation or strengthening of MSMEs. Lastly, by being delivery hubs, telecentres create a virtual and physical environment where businesses can more easily sell and adapt their products and services to the local demand.