

Preliminary Concept and Position Paper

Proposal for the Development of Sudanese Telecentres

Written by Christian Bauer with support by Franz Nahrada and Harald Suitner.

Salzburg, 19.10.2007;

Preliminary version for discussions and internal agreement with partners; confidential - not for dissemination - send your feedback to chris@well.com;

Executive Summary

Information- and Communication-Technologies (ICT) are widely seen as a fundamental element of a newly emerging global information and knowledge society. Access to the Internet is seen as a key factor for the development of businesses, communities, societies and economies.

Telecentres are classroom-like little complexes offering space for 20 to 40 computer-workspaces that have the potential to reach, serve, involve and improve the lives of whole communities by supporting **education, health information, food security information, good governance, democratization, peace** and other priority development goals, including **economic activities** and improve **livelihood** opportunities. Telecentres are further more **electronic postal offices, virtual marketplaces, get-together areas** and give **help to the millions of Internally Displaced Persons**.

The **Sudanese Telecentre Project** is seeking support in developing a **new generation Telecentre**, implementing several new and innovative technologies in an interdisciplinary and cross-cultural approach, combining knowledge from the educational sector, computer science, architecture and project management combined with local and historic Sudanese know-how through cooperation with Sudanese universities, local companies and people of the Republic of Sudan.

This goal should be achieved by a **three-phase project plan** of which **phase 1 is a concept** and **phase 2 is the realisation of a prototype** Sudanese Telecentre. The Republic of Sudan is the largest country in Africa and is faced with enormous infrastructural challenges. To meet this challenge the idea is to build in **phase 3 a network of Telecentres** with innovative building methods at the lowest possible cost factor.

These Telecentres would be a **break-through** for the development of the Sudanese educational system, for the Sudanese business world and for the Sudanese society. They would exploit as well as **balance the disparity between rural and urban areas**, which contributes to the unhealthy urban agglomeration in and around Khartoum, by better informing and educating the rural population. It would help to **improve the living conditions** of the Sudanese people and by being a reliable source of information in health, security and food questions, it would even **save lives**. Finally it would help the Sudanese people to help themselves and develop **sustainable structures for the future**.



Contents

Introduction.....	3
The Telecentre as an Access Point to Knowledge.....	4
Contents and Services in Detail	5
Success Stories	7
Architecture of the New Telecentres.....	8
Overall Implementation Strategy	10
Conclusions.....	14
Partners.....	15
References	16
Books	16
Portals and Links.....	17
Related useful articles	17
Contact and coordination:	17
Attachments.....	18
Discussion of Costs	18
Assessment, Evaluation Criteria and Success Factors.....	19
About the Author.....	20



Introduction

Information- and Communication-Technologies (ICT) are widely seen as **fundamental element of a newly emerging global information and knowledge society**. Access to the Internet is seen as a key factor for the development of businesses, communities, societies and economies. So the use of ICT leads to greater opportunities for those who can participate and leads also to greater exclusion for those who cannot.

Unfortunately it is Africa that has the least developed ICT infrastructure of all continents. Just one example to illustrate this: Some years ago it was evaluated that the city of New York has more telephone lines than the whole continent of Africa. An obviously astounding and unsatisfactory situation.

Telecentres - in recent literature also referred as Community Multimedia Centres or Community Multimedia Telecentres - use ICT to provide access to for a wide range of personal and community uses including the improvement of governance and public services. **Telecentres are a gateway to this newly emerging information society offering open and flexible learning and they are a node in the global network of knowledge.**

Telecentres have the potential to reach, serve, involve and improve the lives of whole communities in developing countries in which "Personal Computers" (that is in this context a computer owned by a person) are unavailable¹. They achieve these goals by supporting education, health information, food security information, good governance, democratization, peace and other priority development goals, including economic activities, and improving livelihood opportunities.

Telecentres can help developing countries to be "teleported" into the 21st century while bypassing either obsolete technologies or by facilitating new technologies in new ways and cultural assimilation typical for the region, leading to better and faster communication and business processes.

In the context of rural Africa and the Sudan, the focus is not only on including people in the information society, but also on offering individuals and communities immediate and better services, livelihood opportunities and sustainable local development.

In short: The proposed Sudanese Telecentres are

¹ Besides the fact that for the majority of the Sudanese living in rural areas a "Personal Computer" would be unaffordable with a daily income below 1 USD per day, there are many other reasons (e.g. no power supply) which make the situation impossible.



- **educational facilities**
- **electronic postal offices**
- **virtual marketplaces** and
- **get-together areas**

Sudanese Telecentres should combine historic and ancient African and Sudanese wisdom in construction methods with state-of-the-art technology that can be used and produced by local companies and people in the Republic of Sudan. (More about this in the coming chapters.)

The Telecentre as an Access Point to Knowledge

The republic of Sudan is the largest country in Africa (seven times larger than Germany) and is faced with enormous infrastructural challenges. To meet these challenges, the idea is to establish and build a whole **network of Telecentres** with innovative building methods at the lowest possible cost factor.

On a national policy level such a network of Telecentres helps with the following policy goals:

- Universal access to telecom (and broadcasting) services, redressing historic inequities and connection to the global information society.
- Provision of government services including social services (e-health, education, agriculture, etc.), meaning effective decentralized local governance and administration.
- Improvement of communication between government and citizens, agencies and non-governmental organisations.
- Supporting local development through information provision, supporting SMEs, job development, professional training, improved engagement in strategic markets and supporting rural activities.
- Stimulating economic growth and more balanced resource use, including reduction of traffic.
- Creating a Sudanese information society.

These Telecentres would be **a revolution for the development of the Sudanese educational system, for the business world and for the whole Sudanese society**. They would leverage as well as balance the disparity between rural and urban areas, which contributes to the unhealthy urban agglomeration in and around



Khartoum, by better informing the rural population about their situation, their opportunities, giving them hope, the possibility of involvement and a wider view.

It would help to **improve the living conditions** of the Sudanese people and by being a reliable source of information in health, security and food questions, it would even **save lives**. Finally it would help the Sudanese people to help themselves, learn to make good use of globally available information and develop **sustainable structures for the future**.

The Telecenters would serve as multipliers for information, indirectly would support people even far away – those with marginal or no internet access or even electricity with secondary media (radio and similar) and thus would be more than just “punctual” solutions. The purpose is also to enable outside professional people to travel to these areas, allowing them to stay in touch with their support systems and bring with them knowledge and services.

Contents and Services in Detail

A Sudanese Telecentre will deliver the following services:

- **Education** - teaching Arabic and other Sudanese languages, Koran and religious studies, how to use modern technology (e.g. mobile phones), cross cultural understanding and the great history of the Sudan. Computer-based and distance learning will be supported by leading local educational institutions. Selected courses can even be televised by digital video, allowing to build “videobridges” and “learning communities” within the country or even beyond where people can interact in real time.
- **Communication services** - Internet, phone (facilitating services like Skype), fax, telegram sending (through the Internet), computers with printout facilities and photocopying allow faster and more reliable communication than the postal services.
- **Help for displaced people** - given that there are millions of Internally Displaced Persons (IDP) in the Sudan (many of them to settle in the suburbs of Khartoum), a comprehensive database system, matching search requests and entities, allowing effective search enquiries through the whole country, would be a break-through, allowing family reunions and mutual support..
- **Agricultural information** - like farming, fishing, aquaculture, marine culture, animal raising, food conservation and processing, trading, manufacturing and skilled services



- **Health and welfare information** - like supporting nearby practitioners (doctors, nurses, midwives, rural health workers, etc.) and field agents on nutrition, family planning, information and education on female genital mutilation (FGM) and active campaigning against it, disseminating multimedia information on maternal and child care, breastfeeding, dental health programme, environment health sanitation (sources of drinking water), waste management and sanitary issues like epidemics.
- **Marketplace** - an Ebay-type virtual marketplace, developed by Sudanese Universities, that is easy to use and requires no credit card, using micro-loan-type credibility procedures like the Nobel-Prize-winning Micro Loan system from Grameen Bank in Bangladesh².
- **News, Disaster warnings** and mitigation.
- **Meeting place:** Sun sails act like big trees, offering shadowy places, and an educationally oriented “digital cinema” attracts people after dawn.

There are scheduled school classes during the day held by local teachers (e.g. every day from 8:00 to 12:00 and from 18:00 to 20:00). When the classrooms are not in use, they can be used for the other services. The telecentre brings together different groups of the population, through its multipurpose structure it acts as a facilitation place (the “community well”).

It is therefore important that this type of Telecentre should follow modern pedagogical approaches by being a "classical frontal educational facility" (that is, a class room) as well as it should be a meeting point, a place to get together. So that eventually the information flow comes from formal school-classes, from non-formal use of the infrastructure (making phone calls, sending faxes and surfing the Internet) and from the people simply getting together (like on a market place) and have unexpected encounters and seeing and hearing new things.

It is evident that such an intense information flow will require trained and specialised staff to help people discover the new opportunities of self-learning, that the main users of Telecentres will be people who show a tendency towards personal growth and leadership. Such people normally have little chance for fulfilling their potential, if they are confined to marginal areas. Telecentres give them new opportunities.

² See http://nobelprize.org/nobel_prizes/peace/laureates/2006/press.html



Success Stories

The World Bank in its Best Practice Review of Telecentres (2000), referred to Telecentres stating: "It is a promising new model for deployment of service to [marginalized] communities. It has been repeatedly declared that: information and communication technologies hold the promise of enormous positive influence on [African] countries' economic and social development (Conference of African Ministers of Finance, May 2001)"

And there are many more examples of best practice, showing that this is not just a wonderful idea or a vision, but simply a successful method of implementing IT that benefits economic development on a microscopic and macroscopic scale:

- African craft makers are selling their goods on the world-wide-web, support by NGOs such as PeopleLink (see <http://www.peoplink.org/EN>).
- In Uganda a local women's organization the Council for the Economic Empowerment of Women in Africa (CEEWA) posts prices and market information for agricultural commodities regularly on its web site and women in rural trading centres can access this information at a number of community Telecentres to determine which market may take their goods and what to charge for them. (see <http://www.wougnet.org>)
- In Senegal local fishing communities are using Personal Digital Assistants and a system called "Time to Market" to improve distribution and marketing of their products and improving their incomes. (see <http://www.manobi.net/worldwide>)

Architecture of the New Telecentres

The goal is to **build classroom-like complexes offering room for 20 to 40 workplaces**, giving the most convenient and sustainable structure with the most economic use of resources. 'Most economic' in this context means using different construction methods:

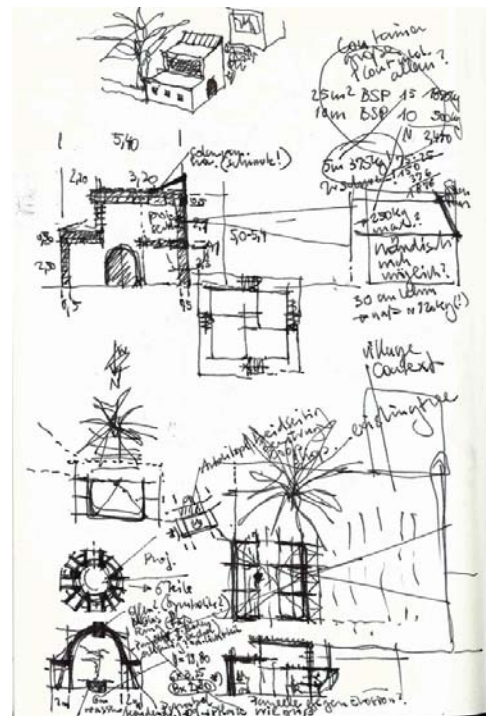
- **Mud Houses:** Using old and ancient construction methods. A time-tried method for hot regions, known for many thousands of years.
- **Corrugated Iron Huts:** Using easily available and recycled materials and parts that might be used for building poor settlements (like the Brazilian Favelas) - but this time using modern construction methods, giving the building sufficient space, stability and cooling.
- **Domes:** Use of self-sustaining domes in the tradition of Buckminster-Fuller: Very fast to build, easy to move, unique style, very visible.

Whatever construction method might be chosen for the individual location and climate region (the Sudan has situations from desert to tropical climate), the goal is to improve these approaches with new insights from today's state-of-the-art in construction research, sustainability and well-being in spaces.

Some examples:

Mud houses could have "light tubes". These are closed but nevertheless reflecting cylinders, that are built into the mud wall, allowing light to get into the otherwise completely dark house. These "light tubes" must be designed in such a way that domestic metalworkers can construct them from polished stainless steel.

If using the "favela style" method, the roof made of e.g. corrugated iron must be positioned and be high enough to ensure cooling of the house by airstreams, etc. White sunsails could help cool down the house additionally, purchased or donated from companies making military camouflage coverages - the pure white version (before they are painted with camouflage colours). These sunsails are very stable, almost



First sketches considering possible forms and functions of the Telecentre by architect Wolfgang Poeschl.

indestructible, and can also be used as projection screens at night when the Telecentre decides to show educational films.

Some ideas for **cooling the building**:

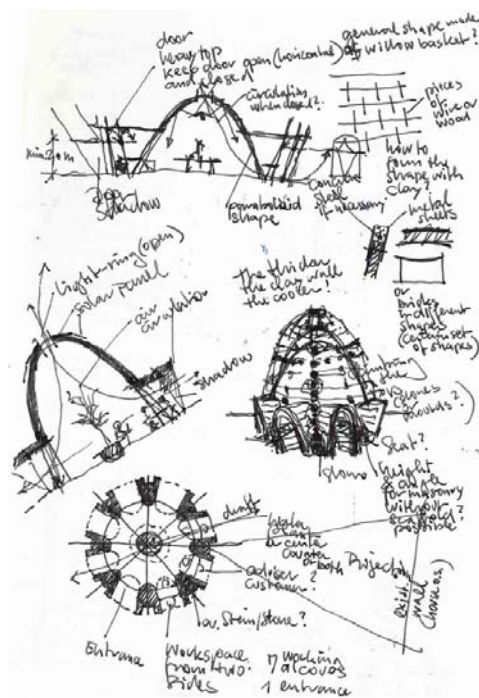
- High rooms limit heat transfer.
- Wind towers create a permanent wind flow.
- Mud, an ancient building material, attracts humidity during the night, and cools during the day by continuously dispensing it.
- Sun sails, of modern and indestructible material, giving shade.

By using **solar cells on the roof** of the building complex, power-saving LED-illumination, the above mentioned "light tubes" (which bring natural light into the building) and power-saving with respect to even power-autonomous computer systems (like the notebooks of the "One Laptop per Child"-Initiative), it should be possible to run whole Telecentres in regions which do not have a power supply at all. A satellite system (V-SAT) on the roof allows Internet access in regions that have no Internet access at all.

All the above innovative features should be elaborated by experts from each domain. Aspects to work on should be:

- Architectural domain
 - Research for intelligent, sustainable and economic construction methods in the various climatic zones, taking historic Sudanese construction methods into account. A complete "reengineering" of the mud house.
 - Specifications and a masterplan of the setting of the Telecentre-complex.
 - Interior design of the classrooms for each building method.
 - Solutions in special areas (wind forces, sand protection, well sinking, latrine construction, etc.)
 - Search for sponsors in the construction business.

- Computer science domain



First sketches of cone forms of a mud-built Telecentre by architect Wolfgang Poeschl.



- Research for robust IT-components e.g. computer, network and Internet-access.
 - Development of the Internet-access method and development of the complete IT-solution including safety issues and monitoring possibilities (video observation and remote control).
 - System analysis for the software specifications, development of a whole set of software-packages and consideration of usability issues (assuming lowest literacy in computer use).
 - Search for sponsors in the ITC-business.
- Project Management and General:
 - Development of the overall Telecentre operations including its daily use, special events, management and personnel and others.
 - Safety considerations.
 - Cooperation with public entities in the region.

Each opening of a Telecentre could be accompanied by a tree planting ceremony, indicating the effort to improve living conditions for the coming decades in the republic of Sudan.

Overall Implementation Strategy

Creating a Telecentre in a rural area entails much more than simply overcoming obstacles to build and maintain an infrastructure in an environment where infrastructure is little developed and distances are far. It also entails creating completely new organizational and social structures, and encouraging new behavioural patterns that allow rural residents to seek out and gainfully apply information. Starting such a venture from scratch is a complex and long-term proposition.

A key to success is local cooperation and integration of local people who understand the goals and benefits of the idea and are willing to implement it with enthusiasm over a longer period.

The author of this paper had the opportunity to visit the republic of Sudan repeatedly and spoke at most universities and colleges in Khartoum and Omdurman in 2005 (see http://archiv.artevent.at/sudan/roadshow_sudan_2005/) and 2007 (see <http://archiv.artevent.at/WSA/Pics/>). Given that substantial contact with these leading educational institutions is already in place, the author is optimistic in being able to involve most of these institutions as active and contributing partners in this challenging and important project.



The project is divided into three basic phases: concept, implementation and expansion. At the beginning of phase two a non-profit association should be founded in charge of project operations. This association could be named: START (Sudanese Technology-transfer Association for Research of Telecentres).

The overall project development process includes the following elements:

Phase 1 - Development of the concept:

- Partner acquisition for an informal "START" committee (co-development of the concept with local organisations)
- Planning phase
- Partner acquisition for the construction and management of the prototype building
- Definition of the software requirements of the Telecentre
- Acquisition of software partners for the project
- Acquisition of patrons for the project
- Development of next phase funding
- Duration: 9 months
- **Estimated total cost³: EUR 50.000,-**

Phase 2 - Implementation:

- Formal foundation of a non-profit association ("START") running the Telecentre(s)
- Detailed planning steps
- Partner and sponsor acquisition in Europe and abroad
- Software development for the Telecentre
- Location scouting in Khartoum and Omdurman
- Partner acquisition on site
- Management team acquisition (one of the Universities of Khartoum of Omdurman has to take patronage of the building)
- Construction of the prototype-building
- Equipping of the prototype-building
- Training phase on site for the management team
- Operation over 1 year

³ All costs at the lowest estimated price point including support from local institutions from Khartoum and Omdurman (without cost) and first value-in-kind support from companies in Austria.



- Duration: 18 months
- **Estimated total cost⁴: EUR 390.000,-**

Phase 3 - Network implementation and expansion (12 units):

- Reengineering of the first concept by integrating findings from planning, construction and the months of operation.
- Construction of 12 second-generation buildings, including the following issues⁵:
 - Preparation and planning
 - Software development
 - Construction of the buildings
 - Equipping of the buildings (based on an average 30 workplaces)
 - Travel, project coordination and contingency
 - Training of staff
- Duration: 48 months
- **Estimated total preliminary cost⁶: EUR 1,9 Mio**

In terms of the civil engineering and architectural side, a master plan containing architectural designs is planned to be developed by the University of Innsbruck.

According to "Information and Communication Technologies for Development in Africa, Volume 2 - The experience with community Telecentres", a moderately equipped Telecentre cost about USD 80.000 to establish and run as a project for about two years. The total costs to IDRC of two Telecentres in Buwama and Nabweru were USD 240.000 for two years.

The Sudanese Telecentres Project is advancing that state by implementing several new aspects, including readiness for power and Internet self-sufficiency and the development of a whole suite of specially designed software, covering the areas of communications, e-learning, virtual market and searching and matchmaking for internally displaced people. **So the "Sudanese Telecentres Project" is more**

⁴ The first Telecentre is by far the most expensive, given that the complete infrastructure and the whole set of software for the network of Telecentres has to be developed first. This figure however is based on the assumption that many value-in-kind sponsorships can be acquired and that the government of the Republic of Sudan welcomes and supports the initiative.

⁵ A detailed calculation can be requested by the author.

⁶ A first and preliminary figure, based on the assumption that considerable savings can be achieved from the larger base. This figure however is based on the assumption that many value-in-kind sponsorships can be acquired and that the government of the Republic of Sudan welcomes and supports the initiative.



than "infrastructure": It is a complete solution covering all aspects from infrastructure towards software contents.

The authors assume that it is possible to have many value-in-kind contributions and volunteer support with the project. So for the people of the Sudan **the value of this project is many times more than the indicated cost for realisation.**

It is a goal of the project to convince the government of the republic of Sudan to supply the project with infrastructural assets and have governmental organisations (e.g. the Police) to supply supportive services for free, while the whole operation is under the control of an independent association (START) that has the patronage of the Sudanese government and well-known organisations like UNESCO or the World Bank. Furthermore the project does require strong support from several local universities or colleges covering all educational aspects.

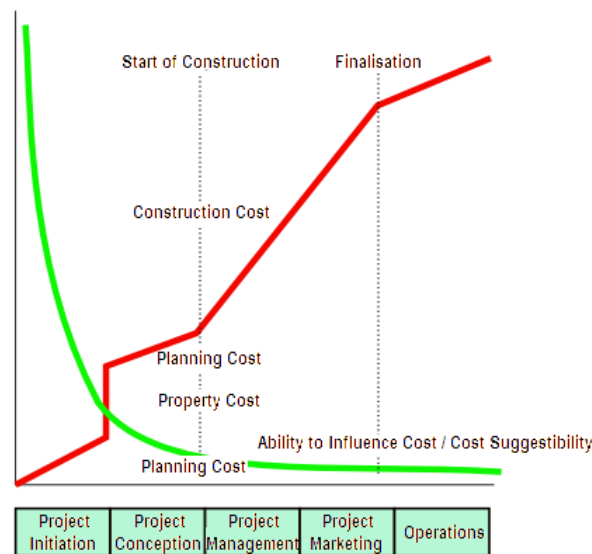
The following time schedule is proposed for Phase 1:

- September 07: Start of partner and funding acquisition;
- January 08: **Start of Phase 1**; first preparatory meeting in Khartoum; acquisition of domestic partners including briefing and agreement on the work plan;
- Feb 08 - Jun 08: Research, work on master plan and planning activities at the University of Innsbruck; parallel development of a market, location and cost/benefit analysis, communication concept, integration of strategic partners and operational considerations;
- May 08: Second preparatory meeting in Khartoum for detailed coordination;
- August 08: Presentation of university's results and presentation of parts of the master plan in a workshop over several days in Khartoum; selection of one or more winning designs; official handover of study

Phase 2 could start immediately after phase 1 is finished, assuming that the funding for phase 2 can be secured during the time period of phase 1. Phase 2 is designed for a duration of 18 months.

Phase 3 could start immediately after phase 2 is finished, assuming that the funding for phase 3 can be secured during the time period of phase 2. Phase 3 is designed for a duration of 48 months.

Before the construction of the prototype building, a project development organisation like START should be established with the involvement of Khartoum-based organisations (there are several technology-oriented universities and colleges of higher education in Khartoum and in other parts of the country) and with concurrent formation of an advisory committee; both would be responsible for the further detailed planning of the project.



The above diagram shows how costs and other project parameters are influenced over the duration of the project and underlines the importance of phase 1, that is, a detailed study and concept.

Conclusions

While technology is strategically necessary to realise the project, the Sudanese Telecentre project is **initially not a technology project**, but an **education and communications initiative**. Technology is the means, the basis or the fundament of the project and has therefore to be the best available, it has to be stable and durable, but it is not the purpose of the project.

The project should help the millions of Internally Displaced Persons, help to increase communications opportunities for people in rural areas, increase knowledge in several critical areas and, finally, be a sustainable educational project.

The Sudanese Telecentre project is unique because of the following factors:



- It is developing a **new-generation Telecentre**, implementing several new and innovative technologies in an interdisciplinary and cross-cultural approach, combining knowledge from the educational sector, computer science, architecture and project management combined with local and historic Sudanese know-how.
- It is integrating academic institutes from Africa and Europe and from domains spanning architecture to computer science, including cooperation with e.g. the award-winning Light Academy Bartenbach, a leading institution in the domain of light-planning and light-solutions and many more.
- Know-how in all areas and a refreshing **new approach comes through the author of this paper**, who is in the fortunate position
 - to have a profound technological background in high-tech, computer science and new media⁷,
 - who has a background in architecture⁸,
 - who is a successful art and cultural manager who has proven to be able to attract millions with his projects⁹, make them a success and also deal positively with and motivate people – this is ultimately always the key to success,
 - and who has implemented many other successful projects in African countries.
- Finally, the project is aiming for a **technological diffusion** of high-tech (in this case not into affordable consumer goods, but) to poor and sometimes illiterate people in rural areas. This is possibly the **hardest possible test-case** for technologies: to meet the interests of a target group that is from a different cultural domain, speaks different languages, and has to cope with difficult climatic situations (e.g. frequent sand storms causing sand to settle in the keyboard, etc.). The technologies must also be useable by illiterate people. This is the challenge.

The author hopes that the argumentation of the previous chapters showed the usefulness of this project and also that it is worthwhile to support this initiative.

Partners

- University of Innsbruck, Faculty of Architecture, Institute for Experimental Architecture / Studio 3;

⁷ Christian Bauer has, among others, received an award from the ACM (Association of Computing Machinery), the oldest computer association based in New York, USA and has been a technology consultant, evaluator, reviewer and rapporteur to the European Commission for over 12 years.

⁸ He teaches at the Institute for Experimental Architecture of the University of Innsbruck, Austria.

⁹ He is project manager of the extension of the Swarovski Crystal Worlds with about 1 million visitors each year, and supported the "Afrika! Afrikal" circus, which counted 1.5 million visitors in the first 2 years. He also led the final presentation of Germany's bid for the 2006 FIFA World Cup resulting in the largest sports event to come to Germany and has overseen many other comparable projects.



- ADA - Austrian Development Agency, Vienna;
- Ministry of Science & Technology of the Republic of Sudan (tbc)
- Khartoum University, Department for Information Technologies and Other Departments (tbc)
- Omdurman College of Technological Sciences, Omdurman; Sudan University of Science and Technology, Khartoum; Al Neelain University, Khartoum; El Mashreq College for Science and Technology (tbc)
- World Summit Award Office, Salzburg - a follow-up project to the UN's "World Summit of Information Society (WSIS)"; Salzburg
- Light Academy Bartenbach, Aldrans (tbc)
- UNESCO and/or UNIDO (tbc)
- World Bank (tbc)
- Niqash Newsletter (www.niqash.org, a site for debate on Iraq, and www.niqash.org/sawtuha, the site for Iraqi womens' issues); Berlin and Amman
- Industry partners (tbc)
- Realisation: Bauer & Associates; Salzburg, Austria

References

Books

- [1] "Telecentres, Access and Development - Experience and Lessons from Uganda and South Africa" by Sarah Parkinson; 2005; ISBN 1-55250-189-2
- [2] "Information and Communication Technologies for Development in Africa, Volume 2 - The Experience with Community Telecentres" (edited) by Florence Ebam Etta and Sheila Parvyn-Wamahiu; 2003; ISBN-1-55250-006-3
- [3] "Assessing Community Telecentres - Guidelines for Researchers" by Anne Whyte; 2000; ISBN 0-88936-916-X



Portals and Links

- <http://communities.msn.com/BridgingtheDigitalDivide>
- <http://www.unesco.org/webworld>
- <http://www.globalknowledge.org>

Related useful articles

- Ten Steps for Establishing Multipurpose Community Telecentres [[follow link](#)]
- UNESCO's first major MCT activity has been supported, together with several IGO/NGO partners, for the establishment of six pilot Telecentres in five Sub-Saharan African countries (Benin, Mali, Mozambique, Tanzania, Uganda) [[follow link](#)]
- The six pilot projects sponsored by IDRC, the ITU and UNESCO/DANIDA, in collaboration with other international partners (British Council, FAO, UNDP, WHO), are sited in five different Sub-Saharan African countries. [[follow link](#)]
- UNESCO launches a sixth community Telecentre in Ethiopia [[follow link](#)]
- First Community Multimedia Centres in Mozambique [[follow link](#)]
- Multipurpose Community Telecentres (MCTs) called WARINTEK in Supporting the Sustainability of Human Development (Pilot project in South Sumatra, Indonesia) [[follow link](#)]
- Evaluation Report on UNESCO's Community Multimedia Centre Initiative [[follow link](#)]

Contact and coordination:

Christian Bauer
c/o Bauer & Associates - Project Development
Festungsgasse 6, 5020 Salzburg, Austria
Tel. +43 664 1018360, Fax +43 664 741044956
chris@well.com

© 2007 Bauer & Associates



Attachments

Discussion of Costs

The following expenditures (according to Anne Whyte [3] "Assessing Community Telecentres - Guidelines for Researchers") should be considered:

A) Start-up costs

- Site and building (purchase cost, conversion)
- Installing power supply, telecommunications
- Installing security equipment
- Equipment and furniture costs (purchase, down-payment)
- Software, supplies, reference, training manuals
- Training costs

B) Operating costs

- Site and building (rent, maintenance)
- Insurance, security operating costs
- Equipment, furniture (lease, amortization costs over time, maintenance costs)
- Upgrades to equipment and software
- Communication costs (fees fixed, per use)
- Staff costs (salaries, benefits)
- Training costs
- Outreach, promotion

C) Revenues

- Grants
- Public subsidies
- Private donations, fund-raising events
- In-kind support (e.g., equipment, volunteers)
- Community support (e.g., rent-free building)
- Membership fees
- Revenues earned from core business:
 - Connectivity (phone, fax, Internet, web pages)
 - Direct computer access to users
 - Office services (photocopying, scanning, audiovisual aids)
- Revenues earned from ancillary activities:
 - Business services (word-processing, spreadsheets, budget preparation, printing, reception services)
 - Educational services (distance learning, training courses)
 - Community services (meeting rooms, social events, local information, remittances from migrant workers)
 - Telework and consulting
 - Specialized activities (telemedicine)
 - Sales (stationery, stamps, refreshments, etc.)



Assessment, Evaluation Criteria and Success Factors

According to Sarah Parkinson [1] are there four success factors for Telecentres:

- Scalability: The capacity to provide enough access centres to reach the population of an entire country.
- Sustainability: a) Internal management and leadership: level of internal conflict, ability to partner, network, technical know-how, marketing skills, flexibility and quick response. b) Internal assets: Building, location, equipment, available services.
- Access Center Reach and Use: The price of the service¹⁰ must be within reach of the prospective users' ability to pay, the users must be aware of the service, and they must have the capacity to use it and feel able to acquire such capacity
- Development Impact: The development impact of universal access initiatives will be the sum of the centres themselves, the process of establishing them, the services they provide over time, and the improvements they engender in people's lives.

Several research issues (in references to a [statement](#) on African Telecentre projects which were approaching the end of international support) need to be answered in order to learn from the MCT projects, such as:

- The MCT service/user profile and how it evolved over the years
- The technological resources of the MCT and how are they used
- The telecommunication and the Internet access contexts
- The impact of MCT information/education/cultural applications at the local community level
- The staff profile and tasks and how well were they trained
- The progress of the MCT towards sustainability (financial, organizational, community participation)
- The socio-political impact of MCTs at the local/national level
- The efficiency of the current international and national partnership supporting MCTs

Sharing knowledge as the ultimate success factor

One last point to mention is the intention to take full advantage of the emerging cooperative knowledge economy. Success stories like Linux or Wikipedia, cultural assets that have already become indispensable for our technology and knowledge developments, show the potential of Open-Source and Open-Content approaches for the future of our social and economic development. Many governmental and business institutions profit from the free availability of community-based products, and they increasingly understand the necessity to feed back into the development cycle. More than that, businesses around the world – even large corporations like IBM or HP, just to name a few – are beginning to develop business model that refrain from licensing intellectual property, but building wealth around shared knowledge domains. Shared knowledge approaches are migrating from software and science to ecological technology, biology, design, computer hardware and many other fields – under heavy competition with intellectual-property-based approaches.¹¹

¹⁰ While Sarah Parkinson is discussing a price for the visitor, in the case of the Sudanese Telecentre Project, we propose to give people free access.

¹¹ A good introductory reading is the Open Business Guide, http://wiki.icommons.org/index.php/The_OpenBusiness_Guide



The proposed approach is to respect intellectual property but avoid its dominance, rather actively foster the professional networking of emerging knowledge communities in all domains and walks of life. Such community-based knowledge is crucial and essential for the development of small and medium enterprises in developing countries, their access to state of the art research and development, their independence, their competitiveness and their sustainability.

Design and architecture of telecentres should in the longer perspective lead to the spin-off of local access points to physical branches of virtual polytechnic research and development communities, including computer – driven micro- manufacturing, synchronous tele - cooperation on design and problem – solving. It is good to have this goal in mind from the beginning, building active and passive competencies and prepare for immense and unprecedented global cooperation to solve local problems together with many in similar situations, share creativity and insights and build sophisticated knowledge repositories that lead to tangible results with telecentres all around the globe.

About the Author

Christian Bauer (born 4.11.1966 in Innsbruck, Austria) is a project manager, pioneer and entrepreneur in the field of 3D computer graphics, new media and new technologies. Bauer studied at the Higher Technical Institute (HTL) for Communications Engineering and Electronics in Innsbruck and was an early pioneer and entrepreneur in the fields of 3D computer graphics and Virtual Reality.

The 1993 'Virtual Reality Vienna Conference', which was initiated and organised by Bauer, was the first European conference on this subject and the parallel 'Virtual Polis 1.0' event, co-organised with Prof. Carl Eugene Loeffler (Carnegie Mellon University), demonstrated the world's first 3D Online Community using technology for the first time - common in many of today's 3D rendering and gaming applications - a business worth hundreds of millions of dollars today.

Bauer is an honoured Oldtimer of the oldest online community The Well (chris@well.com) and received a Recognition of Service Award from the Association for Computing Machinery (ACM), the oldest and most prestigious association in the computer graphics domain. He teaches at the University of Innsbruck (at the Urban Planning and Regional Planning Institute and at the Institute for Experimental Architecture). He has acted as a technology consultant to the European Commission since 1996.

In recent years, Christian Bauer has focused on developing projects in the cultural domain. He headed up the successful 'Presentation of Germany's bid for the FIFA 2006 World Cup' project, securing the world's largest sports event for Germany. Bauer he is a co-inventor of the official Artistic and Cultural Programme for the FIFA 2006 World Cup, a 30 million euro programme which had approx. 3 million live visitors and hundred of millions of press contacts.

He is the project manager for the extension of the well-known Swarovski Crystal Worlds (Kristallwelten) in Tyrol, Austria, which are visited by almost 1 million people every year and he is involved in several other elaborate art and cultural projects. Christian Bauer is resident in Salzburg and Vienna, Austria.



Some Weblinks: www.chrisbauer.com; www.andreheller.com and www.artevent.at.

About the Co-Author Franz Nahrada

Franz Nahrada was born on December 9th, 1954, in Vienna, Austria. He is a veteran pioneer of the information society in Austria, facilitating annual events like “Global Village – Architecture in the Age of Information and Communication Technology” (Vienna University of Technology and City Hall, 1993 – 2000) or “Cultural heritage in the Global Village” (Museum of Modern Art, 1998 and 2002). He holds an academic degree in Sociology (Vienna 1983) and collected professional experience in working in tourism, early videotext systems, market research and also development support for New Media with Apple Computer in Austria.

In 1992, he founded the “Globally Integrated Village Environment Lab” (GIVE), started collecting and applying information on the relations between the virtual and the physical, especially the new arrangements of living and working and the opportunities for rural areas. He has a deep conviction that there is an interplay between communication technologies and the new advances in creative ecology and sustainable development. The latter leads to increased local capacity and autonomy by using resources to their highest value primarily in local cycles, driven by a combination of natural wisdom and man-made automation.

In recent years, Nahrada has initiated field projects like the “Global Village in Kirchbach” trial, where young entrepreneurs bought a building and set up a tele-education centre, allowing the local population to access to cultural and scientific sources around the world by “video-bridges”. He also is active in networks like Oekonux and the Peer2Peer Foundation that study the potential of open access – open source style arrangements for a new economic logic that treats non-rival goods like information as shared resources. (see annex “Sharing knowledge as the ultimate success factor”).

He currently is also managing his families hotel in Vienna, Austria, where he is experimenting with an innovative “learning cafe” that combines local interaction with global media support.

Some Weblinks: www.videobridge.at, www.give.at, www.globalvillages.info

About the Co-Author Harald Suitner

Harald Suitner was born on 30 January 1967 in Innsbruck, Austria. He holds university degrees in Philology (Salzburg 1990) and Economics (Innsbruck 1995). His Master thesis focussed on Tanzania’s paradigmatic change in Society, Politics and Economics in the post-Nyerere period.

Inspired by his first encounter with the African continent he prolonged his studies at Vienna Diplomatic Academy (1995 – 1997) with the two year regular programme in International Relations, Politics, European Law, History and Languages. During the intermediate summer of 1996 he volunteered for the Camp Sadako Programme of UNHCR and became Assistant to the UN Protection Officer in the Kakuma refugee camp close to the Sudanese border.

Mr. Suitner’s professional career starts with the Organisation for Security and Cooperation in Europe (OSCE) but he soon concentrates on the international relations of SMEs and research



institutes in the up-coming GIS/ICT (Geographic Information Systems / Information & Communication Technologies) market. From 1999 onwards he has been entrusted by private GIS companies with market as well as project development on an international level.

In 2002 he becomes member of the Austrian delegation (Mission Support) to the UN-Summit on Sustainable Development (Johannesburg). Mr. Suitner deepens his relations to Africa on the one hand, to European institutions on the other. He becomes consultant with a special focus on international RTD project development and project management. EU Framework Programmes (FPs) for Research & Development are a mayor playground of his activities. He develops capacity-building programmes for African actors who intend to participate in FPs and initiates Public Private Partnerships between European and African actors. In 2007 he is elected General Manager of the GIS-Cluster Salzburg (www.giscluster.at) and establishes his consultancy PROJEKTkompetenz.eu (www.projektkompetenz.eu).