
APPROACHES FOR SUSTAINABLE KNOWLEDGE SHARING AND E-LEARNING IN AFRICA

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Introduction

In the last few years there has been a growing demand on development cooperation agencies to support the increasing number of ICT based educational projects and networks in Africa and Asia.

Germany has already positively reacted to these requests. There are now a number of eLearning projects supporting universities in Africa and Asia. The main aim is to provide better access to and more efficient distribution of knowledge and to enable knowledge owners to produce or adapt eLearning contents rapidly by themselves. Furthermore the cooperation between academic institutions across borders and continents are supported in order to create South-South knowledge sharing and learning networks.

This presentation sheds some light on the development of knowledge sharing and eLearning projects supported by German development cooperation in Africa. It first reviews the evolution of donor supported academic knowledge networks. It then provides some insights into emerging ICT based knowledge-networks in Africa initiated and supported by German development agencies.

Two examples for the evolution of academic networking and partnership are presented:

- A well established knowledge network on environmental and agricultural issues in the Southern African Development Community: SANTREN, supported by Hoffmann&Reif Consultants throughout several years
- The emerging national eLearning system in Ethiopia.

The paper also highlights the need for organizational changes and suggests a blueprint for eLearning capacity building in developing countries.

The role of “Knowledge Sharing” in Development Cooperation

It was in the mid 90ties that development cooperation became significantly influenced by a new appraisal of the role that knowledge plays as a central economic resource. In 1998 the World Bank published the World Development Report “Knowledge for Development”¹ accompanied by an extensive study by the United Nations Commission on Science and Technology for Development “Knowledge Societies – Information Technology for Sustainable Development”².

These publications were important cornerstones for the ongoing debate and provided a new theoretical framework for many development cooperation agencies and their programs. Access to and distribution of knowledge became a core element of development cooperation. And ICTs as the powerful platform for knowledge production, representation, enhancement, distribution and sharing anywhere and anytime was seen as the great enabler for this only resource that grows with its consumption.

Development agencies started to emphasize the role of knowledge in their programs and embarked on a couple of bold and pioneering projects in which ICTs became a prominent function. In the late 90ties the World Bank launched the „Global Development Learning Network“ and the „African Virtual University“.

Today we witness US\$ multi-million and multi-billion „Knowledge Building Programs“ based on ICTs. The Japanese „Comprehensive Cooperation Package to Address the International Digital Divide“³ with US\$ 15 Billion and the Australian „Virtual Colombo Plan“ with US\$ 750 Million are two recent examples.⁴

This new strategy has, however, not been without criticism. Prof. Simon McGrath, from the Center of African Studies at the University of Edinburgh, argued that the reasons for failed development cooperation programs in the last two decades are not necessarily addressed by the new orientation towards knowledge-building. He claimed that knowledge might not become the powerful change agent if it does not address and take into account the “lack of ownership of development; the dogmatism of donors; the authoritarianism of African states; de-contextualized policies and the lack of relationship between state and intellectuals”⁵. Furthermore many of the projects do not take into account the context- and complexity-rich world in the South but rather impose a view that the world is simple, linear and quantified. Projects are seen as being imposed from outside and weakening local capacity-building in knowledge development.

The debate on the role of knowledge in development provided a conceptual framework for a new breed of development agency projects in which knowledge-building was now understood as social and networked and as an active process of learning. In these projects knowledge is defined as a “process of active engagement with the world in which the construction of identity and the mediation of group membership are as important as the development of knowledge” itself⁶. The projects described in this paper intend to support communities of practice in the South and the development of an organizational learning culture as part of development cooperation.

Five criteria for good practices in “Knowledge for Development” projects were identified by McGrath in his paper:

There should be a focus on supporting

- contextual local knowledge;
- the southern stakeholders to become development actors;
- southern ownership;
- openness to local context and complexity and
- local values, concepts and practices.

The projects described below do have local ownerships to various degrees. With regards to “openness to local context and complexity”, they are good examples for coping with an overwhelming complexity in their local environment. The Open Source technology approach within the projects enables the production and representation of contextual local knowledge in a sustainable way. Furthermore the applications provided allow the southern stakeholders to become the actors in all elements of the value creation.

The Southern African Network for Training and Research on the Environment - SANTREN

With about 50 member institutions, SANTREN⁷ is a large research network in the Southern African Development Community (SADC). It has been supported since 1996 by two development cooperation agencies from Denmark and Germany, DANIDA and InWENT. The main stakeholders in this network are the University of Zimbabwe, the University of Dar es Salaam, the University of Zambia and the University of Botswana.

One prominent line of action of SANTREN is to help the mining industry to administer information on the environment, to provide access to environment databases and to provide training for environment experts, workers and managers.

In April 2001, an Open Source based publication platform for the SANTREN institutions, which are scattered throughout southern Africa, was set up by Hoffmann&Reif. The Internet publishing

system enables the experts in the region to produce and publish content on the Internet in a decentralised and collaborative manner using just a browser. Authors can administer their courses and focus on their strength which is providing high quality content and communicating about it.

The knowledge of the local environment experts had previously not been visible for potential international customers. There had been no representation facilities and no distribution channels for the African knowledge owners. Today SANTREN is a good example for southern knowledge becoming visible and available.

This knowledge has a competitive edge. The geologists and agricultural experts within SANTREN have a long track record for environmental research and services. They work e.g. right in the mines as well as with the workers in the small-scale mining fields. Their knowledge is highly relevant and contextual and the regional experts are recognized in their international community of experts. The publishing and content management applications provided at their website enable them to offer their knowledge and knowledge-related services to the mining and agricultural industry more efficiently in their country and also to other regions of the south – with significant competitive advantages.

SANTREN seems to be a good example of how ICTs combined with a training program can create an enabling environment for southern stakeholders. Their ownership of the network and the publication platform allows them to further develop their contextual knowledge, to offer enhanced services and to generate revenues that make their undertaking a sustainable business.

Networked Universities in Ethiopia

The Ethiopian government views ICTs as key enablers for the implementation of the country's development program. The aim, further described in the National ICT Capacity Building Program, is to "develop and exploit ICTs as an accelerator for the attainment of national development objectives and global competitiveness."⁸

In September 2004 the World Bank launched the US\$ 32 Million "Ethiopia-ICT-Assisted Development Program - ICTAD" which will support the formulation and implementation of policy and institutional reforms in the Information and Communications Technology (ICT) sector.

"An important objective of the Government's development program is to increase communities access to information and communication services and Internet connectivity. The improved access to communications tools will diminish the urban-rural economic disparity, provide access to market information for enterprises, and enhance service delivery in health, education, and many other areas."⁹

ICTAD is not the only ICT for Development program in Ethiopia. It complements a number of other bold initiatives that build on a cutting edge powerful national ICT infrastructure being implemented in 2003/2004 by the Ethiopian Telecommunication Corporation with a consortium of Cisco and Ethiopian IT companies:

- UniversityNet: all 12 Ethiopian universities have been networked and are now being gradually equipped with eLearning centers
- SchoolNet: 500 secondary schools including TVET schools are already networked via a VSAT system and are now being gradually equipped with eLearning centers
- WoredaNet: 600 local government and administration units (Woredas) will be networked and equipped in 2005¹⁰
- AgriNet: it is planned to network 30 agricultural centers by the end of 2005
- HealthNet: it is planned to network all regional hospitals and to introduce tele-medicine applications¹¹

The challenge is now to build the necessary human resources so that the technical infrastructure and applications can be maintained and used by all stakeholders, be it students, professors, teachers, administration staff and health personnel. The World Bank and ICTAD views the „Civil Service College - CSC“ in Addis Ababa as a potential capacity building provider for the emerging networks. Through the “Global Development Learning Network Center – GDLN” - hosted at its premises - the CSC has established a record of providing eLearning services to executives and policy makers of the government and the civil service by means of video conferencing. Therefore the CSC seems to be well positioned to offer additional eLearning capacity building measures also to other target groups within the public service and beyond.

Offering capacity building to local authorities will broaden the mission of the CSC. The new emerging ICT networks for the local authorities (Woredas), universities, schools, hospitals and agricultural centers, demand from the CSC to rapidly build media competencies in the public service so that the new ICT facilities can be mastered.

In order to embark on the new perspectives described above, the CSC is currently building appropriate capacities in producing, maintaining, marketing and delivering vocational eLearning content and providing comprehensive eLearning services. An organizational framework will be established, that supports the new mission and eventually will lead to a national eLearning competence center within the CSC.

The blueprint of a knowledge sharing and eLearning capacity building framework

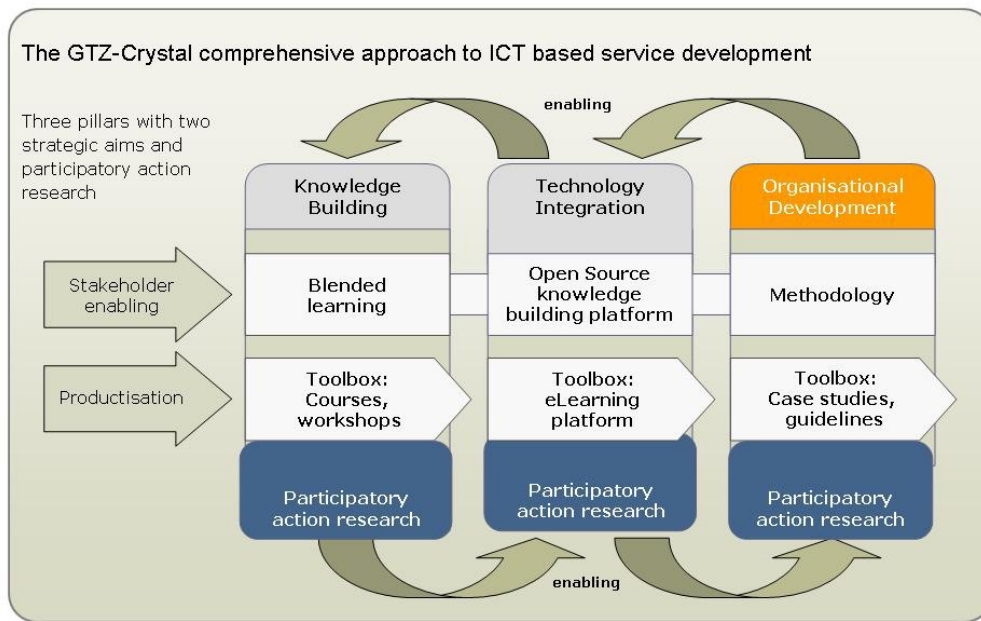
Development cooperation experts point out that knowledge sharing as well as capacity building needs to be accompanied by organizational changes in which new skills can become embedded. It is seen as an important out-put indicator that in parallel to human resources development an appropriate organizational infrastructure is built in which newly acquired qualifications can become embedded.

In the context of development cooperation capacity building needs to result not only in new human capacities but also in the *transfer of productized tools and templates* which can be re-used and adapted by the local stakeholders. Too often training is delivered without an agreement on how the new capacities are supposed to generate change at the workplace. The ownership of tools can facilitate organizational change, the integration of new technologies and the up-take of new services into the service portfolio of institutions.

It is against this background that together with educational institutions in Africa and Asia German development cooperation agencies have developed a blueprint of a capacity building framework that integrates knowledge building and sharing, ICT and organizational development.¹²

This framework, shown in the graphic below, aims at „Stakeholder enabling“ and the „Productization“ of educational services and builds capacity incrementally as part of an organizational change process.

„Organizational Development“ is highlighted in this framework because it is seen as the key activity that allows a sustainable implementation.



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Conclusions

SANTREN and the Ethiopian national eLearning programs are both aiming at enabling knowledge owners to represent directly their knowledge through media via already existing ICT network infrastructures. The advancement of learning applications makes it possible that academic subject matter experts cover elements of the educational value chain that in the past could have only been handled by publishing experts and expensive external services. The establishment of a national eLearning Competence Center in Ethiopia will provide the organizational framework through which the acquisition and further distribution of knowledge sharing and eLearning skills will be achieved. Furthermore the eLearning Competence Center will ensure that productization and distribution of training will meet the requirements of all universities and schools.

It is assumed that the direct representation of content by its owners – supported by an appropriate organizational framework and advanced ICTs - will result in a higher degree of authenticity, contextuality, adaptability, cost-efficiency and time-to-market of content. Manuel Castell has described this new potential in his unsurpassed words: “Unprecedented productivity potential can be achieved when appropriate applications – and I may add here: the appropriate organizational frameworks - empower humankind with the ability incessantly to feed knowledge back into knowledge and experience into experience”¹³.

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