CAPACITY BUILDING IN INFORMATION SKILLS: THE TANZANIAN-BELGIAN CO-OPERATION PROJECT ON THE MASTERS DEGREE IN INFORMATION STUDIES

(In memory of the late Prof. Dr. John Newa, May 7th 1999)

de Smet Egbert[1]

ABSTRACT

Since 1998 the Belgian Development Agency and the Flemish Inter-university Council (VLIR) have supported a large development programme at the University of Dar es Salaam, with projects in 7 UDSM departments. One of the projects is about supporting the establishment and development of a Masters Degree in Information Studies at the UDSM in view of the rising supply for information professionals to deal with all aspects of Information Society in Africa and more specifically in Tanzania. Within this framework co-operation between the Flemish universities, co-ordinated by the University of Antwerp, and UDSM library, the new Department of Information Studies of the UDSM was established. This co-operation covers student grants and some operational costs (establishment of a fully operational Internet-connected PC-lab, purchase of didactic tools such as LCD-projection panel). It also covers return travel costs. However, the main focus is on organising special seminars by Belgian University lecturers on some more technology-oriented subjects, to ensure the training is highly up-to-date in this respect.

The Masters Degree in Information Studies was introduced at the University of Dar es Salaam after lengthy curriculum discussions by the Tanzanian Library staff and experts from abroad during the early eighties. The programme itself was officially launched in 1997. The programme focuses on developing information technology-oriented skills for information management for information professionals and the ability to manage technical change. These aspects are fully reflected in the 2-year M.A. programme. The first year is devoted to course work while the second year is devoted to writing a thesis. During the 1998-2000 academic year 16 students were enrolled in the programme. To date, 10 students have already graduated from the programme. The paper is divided into the following sections; introduction, preparation phase, first year of the co-operation, evaluation and first experiences and future planning.

[1]Professor Egbert de Smet teaches at the University of Antwerp; and is the co-ordinator of the 'Special Degree in Information and Library Science.' His *Ph.D.* dissertation was on Community Information Systems. His expertise is mainly on CDS/ISIS - based information projects and he is involved with several projects in Africa.
Address: IBW, Universiteitsplein 1, B-2610 Wilrijk (Antwerpen), Belgium, e-mail: desmet@uia.ac.be

INTRODUCTION

As a developing country, Tanzania is trying to overcome slowly but steadily the serious backlog in its economic infrastructure. The country also recognises the importance of education and training and the need strengthening the basic skills of its population.

Currently Tanzania has three public universities, the University of Dar es Salaam (UDSM) being by far the largest university in the country. It also has two colleges: the University College of Lands and Architectural Studies (UCLAS) and the Muhimbili College of Health Sciences (MUCHS). The second largest University is Sokoine University of Agriculture, which is based in Morogoro, followed, in third place, by the 'Open University' of Tanzania (OUT), which provides long distance learning courses and supports learning activities (e.g. by transmission through satellite of educational programmes) throughout the country. In addition to the above, there are at least 6 private universities in the country.

The University of Dar es Salaam Library is probably the biggest University library in Eastern Africa. The library has a highly trained staff, of which 9 are *Ph.D.* holders while the rest have a Masters degree in Information and Library Science as well as other disciplines. Hence, within the library environment itself there is a growing awareness of the importance of 'information resources' as a required asset for development. Since most of the staff were trained abroad, they have been exposed to information technology and are aware of its potential in promoting economic, social and cultural development. While many African countries have introduced information technology, the problem is that its development in these countries is highly dependent on donor funding. At the University of Dar es Salaam Prof. John Newa and his staff were very instrumental in the computerisation of the library. For example, the first CD-ROM (jukebox) systems were introduced in the early 1990's.

As a corollary John Newa started to solicit funding from external sources and from several partners in order to set up a training programme in modern information management. However, this was not an easy task. It was also for this reason that UDSM decided to launch the MA programme locally at the University of Dar es Salaam in order to cater for the increasing demand for such training in the country. It was argued that this would cut down the costs because the country was spending too much money on training information professionals abroad, a training which often did not reflect the needs of developing countries.

The initial contacts between Flemish universities and the UDSM library were established as a result of the existing link between the information technology based project in Mombasa (Kenya) and the RECOSCIX project on the marine scientific information exchange within the Institute of Marine Sciences of the UDSM, and the Flemish Universities. The desire and high motivation of

the library staff to start a training programme in Information Studies was noted by the Belgians. In 1996 Dr. John M. Newa, the then Director of the UDSM Library Services, was invited to spend several weeks in Belgium. The purpose of the visit was to discuss the need for a joint Information Studies education programme with the Belgians. During the first visit discussions focused on what would constitute the contents of the programme. Right from the start it was decided that the program should focus on modern Information Technology and Management issues rather than merely classic 'Library Science' education. So the challenge was to prove that a library environment could become the promoter of a training programme which specifically focused on Information Management. This was deemed necessary because in the 21st century information management skills are crucial in any library environment, scientific or otherwise.

At this level, the Belgian partner - actually the Flemish (Belgian education being delegated to the 'regional' Flemish government) Inter-university Special Degree Programme in Information and Library Science or 'IBW' - and the UDSM library staff shared similar views regarding the focus of the programme. Since its inception in 1998 the IBW in Flanders has strongly supported the need to focus on modern IT-based library work (de Smet, E. 1998).

In 1998 the UDSM Library project proposal was accepted as a sub-project within the 'Institutional Development Programme' of the Flemish Inter-university Council and the UDSM. Under this arrangement there are 7 sub-projects which are designed to assist UDSM capacity building. This 'Inter-university Co-operation' initiative is a 5 year programme which has also introduced a new project concept into the Flemish Development Co-operation tradition. Under this programme initiatives from the Tanzanian partners are funded and the Belgian 'counterparts' act mainly as advisers and not as decision-makers on project budgets and activities. Apart from Belgian support, the Information Studies Programme and the UDSM library have benefited from support provided by other donors, including SIDA/Sarec, NORAD and the Carnegie Foundation, to mention just a few.

After take-off, both the UDSM Information Studies programme personnel and their counterparts from Antwerp University decided to include two-week intensive seminars in the programme. Belgian lecturers currently conduct these seminars which cover a wide range of topics including, 'Formal and Contents Structuring of Documentary Information Systems, focusing on international standards and developments,' 'Internet Technology' and 'Advanced Database applications as well as database-publishing on the Web (using CDS/ISIS software)'. It is envisaged that more seminars will be conducted in the near future which will include the following topics: 'Informetrics, Theories and Techniques,' 'Legal Aspects of Information,' 'Adaptive Hypermedia' and 'Data-communication.' These seminars are designed to enhance ICT skills among Tanzanians so that they can effectively utilise and manage ICT.

The Preparation Phase

As indicated earlier, during the initial occasional contacts and within the framework of other projects, both partners, UDSM and IBW, agreed fully on the basic premise of co-operation regarding the Information Studies programme and the need to develop information technology and management skills. During his visit to Belgium, Prof. John M. Newa had the opportunity to meet with and to talk to all the lecturers in the Flemish IBW-programme and to observe, learn and share experiences on teaching methodologies, used by Flemish IBW to conduct these subjects. In setting up this type of training programme that librarians would probably have overlooked subjects such as 'Hypermedia,' 'Database Management Techniques' or 'Knowledge Representation,' to name just a few.

Furthermore, during these visits and within the framework of the co-operation it was mutually agreed that expertise from Flanders would be sought on those subjects lacking in the Tanzanian lecturers due to lack of access to new books and periodicals on specific topics. Therefore Flemish lecturers would complement teaching of such subjects through the two-week special seminars. As proof of its dedication to start the Masters programme in Information Studies (MIS) the UDSM launched the first programme during the 1997-1998 academic year, initially with only 2 students. At UDSM as in Flanders the programme was open to students with a first degree in any discipline.

The First Year: Strengthening IT - Components

The budget for the first working year (amounting initially to about US $30,000 and later increasing to about US$ 40,000) does not reflect the contents focus. This is because the costs of Flemish lecturers are in fact subsidized representing a major but hidden financial contribution from the Flemish institutions in offering their staff to lecture in Tanzania, normally worth US$ 6,500 for each seminar). However, Flemish lecturers also gain indirectly through the exchange of ideas, making contacts and the experiencing of teaching in a different environment. In this co-operation the potential of launching joint research initiatives and networking also exist.

From the start it was realised that the MIS programme had the potential of attracting a sufficient number of students in the region, thus making the programme viable Therefore, a major part of the budget was earmarked for student tuition fees and grants. Furthermore, It was agreed that any money 'left over' from other activities within the project would be used for this purpose in view of the importance of the programme. Actually, at the end of the first working year, more than half of the total budget was spent on student grants, but the launching of this new programme suffered a major setback when the government of Tanzania decided to increase enrolment fees by 70% at the beginning of the 1998-99 academic year.

As stated above, the main focus of the activities (unlike the budget) was the strengthening of the training contents. During preparatory discussions in November 1998 with the MIS lecturers (mostly library academic staff members with appropriate academic and professional qualifications) it was agreed that Belgian lecturers and expertise would concentrate on the following areas:

- Internet technology and hypermedia;
- The Internet as an information resource;
- Database technology and documentary systems;
- Information standards as applied in documentary systems;
- Informetrics; and
- Knowledge Representation.

During this period two special seminars were planned and conducted between April and May, namely Internet Technology and the Internet as an information resource (Prof. Dr. P. Nieuwenhuysen) and Documentary Information Systems: techniques and applications (Prof. Dr. E. de Smet).

In order to facilitate the IT-based seminars, a PC-lab was established at the beginning of the project (with 4 fully-equipped multimedia, networked and Internet-linked computers) to ensure practical exercises during/after the seminars. Also, a data projector, which allows PC-screens to be projected onto a larger screen, was purchased. Although very expensive, these devices are important and relevant particularly since the MA programme is IT based. Access to such technology is crucial and allows Tanzanian students to gain exposure to modern IT and its potential and also to didactical approaches and innovations, including the full use of computerised slides, real-time demonstrations, HTML exercises, etc.

Both seminars were held as two-week 'sandwich' courses. Additional crash courses were also held to familiarise students with IT. The three-hour Internet seminar and Database seminars took place during morning and afternoon sessions.

During the second working year, Prof. de Smet conducted another seminar in April 2000, which focused on the social relevance and status of the profession on the Information and Society. This seminar resulted in fruitful discussion and the pleasant discovery of a wide common basis on which to approach the subject matter.

1. *Evaluation and First Experiences*
A 'first year' operation is of course rather untypical and should therefore be evaluated cautiously. However, we can take a risk in putting forward the following evaluation statements:

- Partial sponsorship for student enrolment (tuition fees) is the single most important component and action taken in this project at this stage. This is because a sufficient number of students (there were 10 this year) is crucial in order to establish the viability of a new training programme. It is envisaged that this effort will be maintained for at least a couple more years. Sustainability of the project after donor support is no longer forthcoming is, and should always be, a major criterion for judging the success or failure of a given project.

- The setting up of a fully equipped up-to-date PC lab, with multi-media, networked computers and Internet functions, was crucial in order to establish a stronger IT-oriented 'profile' within the university environment for the sake of students (also prospective ones). The PC-lab proved useful in supporting the organisation and delivery of the special seminars.

- Written evaluations after the seminars showed that they were highly appreciated by the students in terms of the state-of-the-art content and also as a means of strengthening the 'modern' profile the MIS programme wants to stress, which was also helped by the didactic approach. The degree of difficulty was considered rather high but not judged to be a real hindrance.

- From the lecturer's point of view the impression was that the 'experiment' (after all a 'first edition'!) was successful, the minimum infrastructure conditions, although far from ideal in African universities, being aptly met. Student interest and motivation as also rated high. A common problem (also in Belgium!) is the great diversity of students' educational and professional backgrounds, which partly hampers the lecturing of seminars, but having said that it did not present a great problem.

- A minor point is the low level of participation by the Tanzanian lecturers themselves in the seminars. their problem (also experienced by their Belgian counterparts by the way!) being that their participation comes on top of their normal involvement in the MIS, as well as their substantial engagements as library staff. However, the basic concept of the co-operation programme is that the seminars would allow not only students but also the lecturers to update their knowledge. Furthermore, the knowledge gained in the seminars can be incorporated into their normal subjects in the near future (again the sustainability criterion!). This is the 'training of trainers' concept which should be enforced in the future. It is anticipated that participation by Tanzanian lecturers will be greater in the few next years. This was evident during the 'Information and Society' seminar. The assimilation process, where lecturers study and incorporate the seminar lecture notes into their own lecturing, will as intended, partly solve this problem.

Future Plans

After the positive evaluation of the first working year of this project, we plan to continue the co-operation with the following:

♦ Continue sponsoring, although at a lower level, student grants.

♦ Expansion of the PC-lab, one obvious reason being that next year both the enrolled students and the new students will need the lab for their work (preparing their theses and/or exercises).

♦ Continuation of Internet subscription support.

♦ Offering more seminars, less IT-oriented but still focusing on new topics in the Information Science area, e.g.:

  ▪ New information standards for structuring documentary systems and meta-information;
  ▪ Informetrics and bibliometric applications;
  ▪ Adaptive Hypermedia; and
  ▪ Legal Aspects of Information.

♦ Further comparison of both partners' curricula (see annexes) could lead to more structural changes of the programmes to the extent that expertise in UDSM is gained in new subject areas. The UDSM curriculum still reflects a lot of 'Library skills' subjects (like field-specific information services) and has many optional subjects, whereas the Flemish programme stresses fundamental 'information science' basics and could therefore not allocate space for field-specific option subjects. It is to be seen whether more 'streamlining' can be done from these two rather different approaches. Some effort is being made to review the entire curriculum of the Programme. In this way more relevant courses will be identified. It is envisaged that these will be courses, that respond to needs of the current information technology and the specific socio-economic, political and cultural environment of Tanzania within which this technology is applied.

♦ Through one or more research co-operation projects (e.g. in preparing a Ph.D.) the partnership could also extend to sharing research methodology experiences and raising the number of Tanzanian Ph.D.'s.

♦ A visit of a Tanzanian colleague to Antwerp University to discuss state-of-the-art contents and methodology of their own subject(s) along jointly with their Flemish 'counterparts' will be part of each year's budget proposal.

- A forum for sharing experiences is at this moment being organised in Antwerp to look at a project which is designing a WWW-based training course on Information Resources. This is based on a model of 'self-adapting hypermedia contents' where the course content is dynamically presented to students according to their individual status and track record, based on software monitoring the interactions. This type of educational technology is attracting great interest all over the world as it would, in principle, allow for more remote and self-steered learning.

- Some further assistance will be given to promote the MIS on the UDSM website; in fact some initial exercises from the Internet Technology seminar can already serve this purpose.

Some of these aims will need without doubt to be extended over the whole project period (up to the year 2003 at least) because they require a longer time period in order to be fully reachable.

A major practical question, which remains unanswered at this time (still requiring more discussions in the near future - this also being a crucial part of the project, exchanging ideas and mutual views on Information Studies education) is whether the past seminars need to be repeated by Belgian lecturers or not. The contents of these seminars are considered to be crucial within the programme, so next year's students are also entitled to them as part of their education. The seminar notes (like the presentation slides) were put at the MIS's disposal, which can also be considered as one of the major results of the first year's action programme. It is therefore to be expected that this will allow the local lecturers to take over these topics fully.

CONCLUSION

The last issue is crucial to the overall success of the project. The basic reaosns for the co-operation, do not simply revolve around financial assistance for the establishment and strengthening of a new Information Studies programme, but more important is the transfer of knowledge and expertise in modern Information Science and new teaching methods. These factors are important if the MIS training is to be geared towards enhancing the information skills of Tanzanian information professionals.

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