KNOW-HOW 3000

Experience

IN DETAIL

„OPen University Systems - OPUS"

HORIZONT 3000

AUSTRIAN ORGANISATION
FOR DEVELOPMENT COOPERATION

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List of Abbreviations

CBU	Copperbelt University
MU	Mulungushi University
OPUS	OPen University Systems
UCM	Universidade Católica de Moçambique
UMBB	Universidade Mussa Bin Bique
UNZA	University of Zambia

Imprint

Experience in Detail
"OPen University Systems - OPUS"

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1. General Information

The "**Universidade Católica de Moçambique**" (further on referred to as UCM) is an academic institution that offers major degrees in a vast array of fields, like IT, Health Science and Management.

Within this documentation, the UCM wants to present its experience named *"The benefits/ impact of a (common) free and open source student management information system in Mozambique and Zambia called OPUS - OPen University Systems"* in order to provide a standard practice on managing student related data, including curriculum data, course subscriptions and results.

Chart 1: Localization of the Experience

2. Context of the Experience

The experience has been carried out in Mozambique and Zambia since 2007 and is still ongoing.

As an effort to assess the status of college education in **Mozambique**, the Mozambican ministry of education asked the collaboration of all (major) university institutions in Mozambique to provide data on several aspects of that practice. Information such as active students, general students' performance and so on were required. The challenge was that not every institution had efficient and reliable means of delivering such information. Those that had either were not willing to hand it over - not properly anyway - or would present it in such a disparate way that it was a difficult task to formulate an appropriate judgment from the data collected.

The ministry needed a way to standardize the access to this information. Therefore a collaborative project was set up to develop the OPUS system. Five Mozambican universities with different backgrounds – public, private, with and without religious background – were invited to participate in the project. But because of the high number of donor projects, experienced especially by the public universities in Maputo, the universities have not always managed to focus on the project outcome as much as would have been necessary. Often, the focus was more on immediate benefits for the infrastructure, such as computers, etc. This was a challenge in the OPUS project, because a commitment was required in terms of time and personnel to implement the student management system successfully at each university. Therefore, not all five, but only two participating Mozambican universities – the UCM and the Muslim UMBB – were able to use OPUS effectively within their institutions.

In **Zambia**, fewer institutions, that is to say three public universities (the UNZA, CBU and MU) were invited at a time to participate in the OPUS project. This helped to get a higher degree of local contributions. The challenges at the two bigger universities were with their very complex internal organizational processes that were not aligned between the different faculties, such as different academic years at certain faculties.

In all institutions, OPUS tended to be seen as an ICT project, although the functional owner can only be the academic office, because it is academic data that is to be managed.

3. Main Characteristics of the Experience

The Mozambican Ministry of Education and the Dutch Radboud University were the project managers. The OPUS system, which in Mozambique goes by the name of "eSURA", was installed at several institutions across the country and the Radboud University and the Ministry of Education, were involved on the further development of the system. In Zambia the Ministry was not directly involved.

As an individual university, UCM, tried to take what came out of the project and make it useful in the daily routine. This includes the input of the **HORIZONT3000 advisor**. As an external person it was easier to step outside the local politics (being afraid of taking steps without approval of the Ministry) and as an European it was easier to strengthen the direct communication with the Dutch partners.

Also the idea to share the project outcome under an open source license came from the HORIZONT3000 advisor and then put forward by the Dutch team to the Ministry, and after considerable time it was accepted. This made it possible to use the outcome of the Mozambican project in subsequent projects in Zambia and use the improvements made to the system during the Zambian project e.g. at UCM as well.

The two **main objectives** for OPUS to be useful to any institution are – on the one hand - technical development and – on the other hand - user training. Both activities are supposed to be taken over as much as possible by the local institutions over time and local management support and involvement needs to be established.

In the early project phases, a series of visits is done, both by the European team to the local institutions, but also the other way around. Later, more and more responsibilities need to be carried out by the institutions themselves. This often is only possible with consistent management support.

In order to address respective challenges, the **following tools/ instruments** have been used:

(1) Organizational
To improve the organizational setup, management assistance is useful so that the institution finds out what needs to change within itself in order to be prepared for the introduction of the system. This can be done by giving workshops where internal discussion is facilitated.

(2) People
To improve technical capability, a lot of practical work needs to be done together with and by local technicians. The same applies for users: they shall not only be trained in a classroom situation, but it's effective to sit down with users at their workplace and solve difficult cases together – sometimes these sessions will inform the technical development. Therefore, workplace based training is a good example for a sensible socio-technical system development in which the two worlds (technical and social) get into touch.

(3) Technical
For the development of the system, an iterative and incremental development model was useful: Repeatedly develop small chunks of functionality and let the users experiment with it. Then use the feedback to verify and steer further development.

4. Stakeholders and Partners – Roles and Responsibilities

Mozambican, as well as Zambian universities, Ministries of Education, students and academic registry staff are the main beneficiaries of the practice/ experience.

The basis of the project is a network of universities and possibly other actors like external advisors and the Ministry of education.

IT technicians and Members of academic registry are involved in the implementation of the experience, as can be seen as follows: IT technicians from the universities involved are gathering knowledge on the system and learn how to customize it. Members of academic registry are serving as business experts and their main purpose is to define boundaries and business rules of the system. Therefore, they were motivated for an easier way to perform their everyday work.

5. Resources

In order to carry out the experience in a successful way, some resources are needed as can be seen below:

Firstly, **Knowledge exchange visits** have to take place between development cooperation partners e.g. North-South, but ideally increasingly South-South.

Secondly. **IT technicians** for each institution as they need to guarantee the proper execution and stability of the system. In the specific case of UCM two technicians proved to be sufficient.

Thirdly, **IT equipment** was distributed as some institutions could not afford it. It is worth mentioning the powerful servers distributed among the universities.

6. Impact of the Experience/ Practice

The introduction of the OPUS system has improved greatly the activities of several actors. The academic registry has now a faster and more reliable way to manage student information.

The students themselves can have their academic requests replied in a much faster way. Student's certificates and other documents can now be issued in a matter of days, what before took weeks.

The Ministry of Education is able to get more accurate and timely statistical data from the universities using OPUS.

Moreover, the institutions using OPUS form a network that makes it possible to provide support to each other. For instance, an institution may seek assistance from another institution in the region, instead of being limited to a certain foreign supplier as it is the case with proprietary products. With the Open Source license, other institutions can furthermore use for free, what has been built in Mozambique and Zambia.

7. Lessons Learned and Recommendations

Open Source licensing is a viable approach to share IT related outcomes among beneficiaries.

If the utility is demonstrated at a few institutions, bottom-up dynamics will allow other institutions flocking together without donor intervention.

For any information system implementation there's a certain level of opposition against change. Higher utility of the system tends to lower the resistance.

Long-term top-level management support is the prerequisite to overcome resistance.

Always listen to the feedback of the users to keep the utility of the system.

Advisors as provided by HORIZONT3000 can play a key role in understanding different cultures in development cooperation projects. They can also act as change agents.

8. Challenges

To get users not to fear technology was a big challenge. Even though, the UCM has adopted the system in larger numbers, there are still units in UCM that are not using the system yet. Several employees even presented difficulties when dealing with computers at all.

Besides, Internet is a must have requirement in order to use the system. Several of UCM units don't have a reliable internet connection at the moment. This issue is not limited to UCM but to the actual country.

So far, these challenges have been addressed by:

- providing **early workshops** where users could be tested on their knowledge on the system and also expose their views.
- doing **regular visits** at every unit for private assessment and support.
- investing in **Internet connections**, e.g. by using GSM modems for mobile cell companies, dedicated to the use of OPUS.

Nevertheless, some challenges remain. In all institutions, staff fluctuation is an issue. For example, trained prospective users may have shifted their position within or left the university before ever having used the system.

Furthermore, a specific challenge is to find ways to accommodate the different ways of working, since several institutions in different countries use the system. For example, Mozambique and Zambia have different grading systems, rooted in different education systems: Mozambique uses a scale from 0 – 20, based

on the Portuguese education system. While Zambia uses percentages 0 – 100, plus associated grades A, B, C etc., based on the English education system.

This challenge mostly requires appropriate technical solutions.

9. Sustainability

Some elements are required that need to be in place, for the practice to be institutionally, socially, economically and environmentally sustainable. Within an institution, e.g. the UCM the following elements are needed:

- An entity to enforce the use of the system (**Management involvement**),
- **Improved IT education** for employees
- Apprehension towards users and an **efficient adaption** of OPUS, e.g. interfaces to other systems within the university.

Regarding the wider scope, following requirements can be mentioned:

- The establishment of a community around OPUS: **Networking** among OPUS users; for example organized within a non-profit foundation
- **Professional support services** for implementation, training and help desk.

10. Experience Sharing/ Up-scaling

In the beginning, there was a lot of resistance in adopting the system by several institutions. Probably because it was sort of “imposed” by the ministry, a fact that educational institutions did not appreciate. But after the implementation of the system in the various branches of UCM spread over the country and several cases of success, the system became considerable more desirable. Currently, there are at least 7 institutions using the system and 3 more that have already requested it.

With its **Open Source license** OPUS is free to be used and modified by any interested institution around the world.

As potentially interested in the experience, any educational institution could be named, which is willing to implement proper mechanism for student management and looking for a case study on the introduction of an academic registry system.

But in order to be able to replicate the experience some conditions (institutional, economic, social and environmental) should to be provided/ guaranteed, such as:

- A certain minimal **IT maturity**: Users must be minimally comfortable with information technologies (users at universities usually are). Aslo a proper internal network and Internet connection must exist.
- **Harmonization of internal processes**: The same rules and processes should apply throughout the institution
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In addition a considerable amount of **adaptations to OPUS** could be required in “new” countries, depending on the differences in the education system.

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