

Improving Infrastructure, Service and Knowledge by “Campus Best Practices” Model

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Keywords

Campus Best Practices, IT staff collaboration, digital divide.

1. PROBLEM STATEMENT

This paper summarises the participation of AMRES, the National Research and Education Network (NREN) of Serbia in the GÉANT “Campus Best Practices” (GN3 NA3/T4) task and the experience and the results that have been achieved by AMRES. Four NRENs are contributing: UNINETT (Norway), CSC/Funet (Finland), CESNET (the Czech Republic) and AMRES (Serbia). Of these, Serbia is the only one which faces the problem of poor technological development, the so-called ‘digital divide’ problem. The NRENs that are faced with this problem pay their full attention and spend overall budget on the improvement of their backbone infrastructure and services, and their external NREN connections. Insufficient attention has been focused on understanding and mitigating the problems of discontinuity in the quality of infrastructure, services and the expertise of staff, which generally exists between the NREN backbone and the campus network. The GÉANT “Campus Best Practices” task examines a working model as one possible solution for the problem.

2. DESCRIPTION OF THE WORK AND CONCLUSIONS

According to current practice, the NREN member institutions themselves are primarily expected to be responsible for their own development. However, practice shows that when left to themselves, not all institutions have the same level of success. They are often unable to keep up with the pace at which the NREN advances. Smaller institutions in particular are affected. The question that is posed is whether there is a methodology, model or measures the application of which can lead to the desired goal - the harmonised development of infrastructure and services on the backbone and on the campuses.

The GÉANT “Campus Best Practices” (NA3/T4) task examines one possible solution for the problem. The working methods are built on experience from UNINETT. The aim of the task is to increase cooperation between the NRENs and their member institutions in order to arrive at common technical solutions and recommendations for the campuses. The inclusion of institutions in this process is based on attracting the technical staff employed in them and encouraging cooperation through work in working groups for individual technical areas. This creates a circle of experienced people from the ICT sector who could transfer their experience to the entire academic community in the form of best-practice national documents, which serves as a basis for other activities and the implementation of other goals.

The working methods could be explained in a structured manner. All the activities are divided into six groups so that the entire model comprises six steps, from the first simple steps to the most difficult in terms of the involvement of resources (people and money), as shown in Figure 1.a. One can find a detailed description of the model in the document [1]. Although GÉANT has adopted a basic working model comprised of the first three steps, it is useful to view these steps as an introduction to the next, and be aware of the advantages of expanding activity.

Some of the open questions regarding the model are whether it is scalable and applicable to large NRENs, and how applicable it is in not so developed NRENs and in conditions of poor financial support. A description of the experience recently gained at AMRES, during the implementation of the adopted model, can be of benefit to NRENs operating under similar conditions.

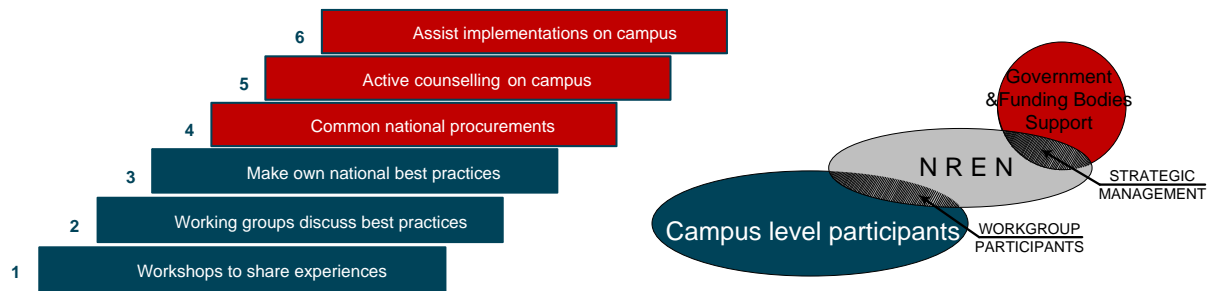


Figure 1. a) Campus Best Practices model, b) Stakeholders and their connections

Before the start of the GN3 project, two steps from the proposed model were completely new to AMRES: developing/using its own best-practice documents and organising the community into working groups for individual technical areas. Rest of the model (described as steps 1, 4, 5 and 6) were not unknown to AMRES, but these activities were not part of the planned implemented model which would lead to a lasting process on which campuses can rely. Other NRENs are also likely to have experience with similar isolated activities organized more or less frequently. It is important to underline the difference between isolated procedures and a consciously implemented model in the NREN, even when it is limited to some of the first steps.

During the three years period, AMRES has been working on adoption of Campus Best Practice organisation model along with gaining own technical results. That resulted in three work groups established for technical areas of physical infrastructure, network monitoring and security and ten best practice documents developed. Of these, four are translated into English and published along with documents produced by other task member NRENs. The English documents covering topics from six technical focus areas (i.e. physical infrastructure, campus networking, wireless, network monitoring, real-time communications and security) are available at the GÉANT and TERENA web sites [2]. AMRES's documents are available in the Serbian language on the AMRES wiki website <http://bpd.amres.ac.rs>. Mailing list campus-bp-announcement@terena.org is set up to announce the publishing of new documents. The GÉANT task team sees itself as demonstrators of what can be done in other countries. AMRES contributes the task team's effort to organize workshops at the South East European scene (info at <https://openwiki.uninett.no/geantcampus:start#workshops>).

Establishing all six steps is a long-term process. The way in which the process is initiated, who is the leader of activities in the NREN and the support gained over time in the NREN for these activities affects its sustainability. Undoubtedly, it is necessary to ensure the support of technical staff on campuses, as well as that of strategic management and the bodies which fund NREN activities (as shown in Figure 1.a). Initial activities in AMRES were directed at campuses, and through them a wide base of potentially interested participants was included. Over the period of implementation of the model in AMRES, a solid base for the next CBP activities in this target group was formed. Some of the orientation indicators are visits to the AMRES wiki pages, then the number of views of lectures recorded at workshops (available on the AMRES media portal <http://media.amres.ac.rs/index.php/strim-arhiva/148-geant-wireless-workshop.html>), the increase in the number of institutions in AMRES which began to use certificates after the publication of the BPD Securing Service Access with Digital Certificates etc. Activities to gain strategic management support, in AMRES, have been left for a later date.

3. REFERENCES

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4. AUTHORS' BIOGRAPHIES



Mara Bukvić received her B.Sc. and M.Sc. degrees in Computer Engineering and Science from the School of Electrical Engineering, University of Belgrade, Serbia, in 1991 and 1996 respectively. She began her career as a research assistant at the Institute of Nuclear Sciences, Vinča, Serbia. In 1996, she joined the University of Belgrade Computer Centre as a network engineer, an institution responsible for the development of AMRES, the Serbian national research and education network. In the time period 2000-2010, Bukvić was head of a team of network engineers responsible for many major, national scale projects. Until AMRES was established

as a separate, legal entity in 2010, her position was recognized as equivalent to the Chief Technical Officer of AMRES.

Bukvić is a member of the Serbian Chamber of Engineers. Currently, she works as a network engineer and researcher at the University of Belgrade Computer Centre.

Bukvić participated in the GN3 NA3/T4 Campus Best Practice task from 2009 till 2012, where she worked on the implementation of the Campus Best Practice model in Serbia, which also is the topic of this paper.