

All NRENs Are Local: A Business Case for NRENs – the Swiss Perspective

Extended Abstract

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Most NRENs face a similar history: Computer networks were at the core of their business 20-plus years ago, when networking came into being and the academic needs at that time could not be met by existing public or private companies. This has drastically changed over the last 10 years with the commoditization of the network access and the rise of national and international network infrastructures operated by commercial companies in a highly competitive marketplace. Whereas these network providers were and still are benefitting from economies of scale, the possibilities for NRENs are limited in that regard by their national mandate and scope. Many NRENs ventured early into “new” business fields such as authentication and authorization infrastructures or security services, which in turn have become by now rather mature businesses.

In this talk we give a personal perspective on the relevance of NRENs today from SWITCH, with a focus on the relation between the NREN and the IT services departments of the Swiss universities, SWITCH’s traditional customer base. It is based on the prerequisite that “all NRENs are local” (an alteration of a famous political quote): It means that the single strongest force in an NREN business case should be its orientation to its core customers and their needs within its national environment.

In 2010/11, SWITCH reformulated its strategy and underwent an internal reorganization in which the company’s divisions were completely restructured whereby each division should service one specific customer segment. Correspondingly, the existing as well as planned future services were grouped into five divisions: “Central ICT Providers” (for the IT services departments), “Researchers and Lecturers” and “Commercial Customers”, together with two internal departments for management and IT support. The main motivation for this reorganization was to strengthen the customer orientation of SWITCH and to provide the different customer groups a simpler interface to its services and the company as a whole.

Most “traditional” NREN services such as the network and AAI were assigned to the department “Central ICT Providers”, as these services have as main contacts the IT services departments in the Swiss universities. While these services tend to be rather mature, they are also the ones that have a well-established and generally accepted pricing structure upon which the company relies. However, as outlined above, they are also the ones which are most exposed to competitive forces. Given the fact that a NREN such as SWITCH cannot compete exclusively on price, it is imperative to create additional value in all its services that is also perceived as such by the academic sector. Simply offering a reliable service won’t be enough in the long run.

SWITCH sees the following five cornerstones in a strategic orientation to address these facts:

First and most important, an excellent relation based on trust and partnership is key in the academic sector. It is only through a thorough understanding of the needs that the key added values, that an NREN is able to offer, can be correctly discovered. In addition, one has to be aware of the fact, that too often the interests of individual universities can be rather diverse or even contradictory. Furthermore, in particular IT service departments are under an increased cost pressure today, and NRENs must be prepared to offer solutions here - in an environment with potential conflicts between different stakeholders.

Secondly, even mature services offered by NRENs must comprise innovation that is not readily available on the commercial market. For instance, SWITCH analyzed not only the operational effort for existing service, but also tried to assess the associated innovation. NRENs must be prepared to take on innovation challenges that go beyond their near-term

self-interest as well as reflect to what extent they want to offer services with no innovation and increased price pressure. SWITCH has made the experience that it is actually harder to turn off an existing service than anticipated.

Thirdly, new services must be identified and implemented. Time-to-market is important and, traditionally, this has not been one of the strengths of the academic sector. As part of its new strategy, SWITCH is also aiming to offer services beyond the IT services departments directly to researchers, lecturers and students in the area of Cloud, student-centric services and e-Identity. These are services where the stake of the IT services departments may be smaller than with existing services. Nevertheless, this direction requires a careful coordination with the IT services departments: While in some institution this may be welcome, in others the IT services department wants to be the exclusive contact for all of their users. Different user interaction models are needed here, and careful considerations have to be taken such that the IT services departments are properly included and also benefit from the added value of these new services.

Fourthly, pan-European collaboration is an area where NRENs have succeeded in the past. This must remain so, but its benefits must be better communicated to the national partners. In particular, support for international research communities is an area where a joint effort by NRENs can solve problems for which no national solutions can exist.

Lastly, NRENs have to consider above all their national setting (“all NRENs are local”): Most of the financial support is provided either by national governments or nationally organized university systems. In SWITCH’s case, this is a very diverse environment with three very different types of universities. On the other hand, this should be viewed not so much as a challenge but rather as an opportunity to offer services that others can’t – and therein lies the relevance of NRENs.

Author Biography



Christoph Witzig is the department head of the Central ICT Providers at SWITCH, the national research and education network of Switzerland. The activities of the Central ICT Providers comprise all services to the IT services departments of the Swiss universities, such as the Swiss higher education network, the authentication and authorization infrastructure as well as other services.

Christoph Witzig holds a degree in high-energy physics from ETH Zurich, obtained his PhD while working at CERN and worked for several years at Brookhaven National Laboratory in Upton, NY, USA. He held various positions in the commercial sector before joining SWITCH in spring 2005.