

# OSS-services, technical working group.

## Members

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## Synthesis

The technical working group discussed three different concepts/services.

- A **content repository** that would allow sharing and searching of electronic educational resources on a national platform.
- An **eLearning helpline** that would provide support to existing competence and production centers.
- A **development service** that would implement bridges between existing services and LMS platforms.

## Repository

Two scenarios for content exchange were identified in the working group. Both should be supported by a single repository. The first scenario consists of storing and sharing Learning Objects that is, educational content packaged with accompanying metadata in a widely accepted electronic format. The second scenario corresponds to a less formal and more progressive exchange of resources among teachers. For example, as a first step, a teacher might want to share a single presentation with only a subset of colleagues, and only in a second step, share the resource with a larger audience.

The main characteristics of the repository would be:

- Easy submission of resources (“one-click”)
  - Metadata entry by the user is kept to a minimum. It is however possible to pre-configure a personal profile that automatically fills in most of the metadata fields (e.g. author, copyright, date, course, ...). The provision of detailed information about the resource is possible but not mandatory.
  - Extraction (“save to repository...”) from existing LMS as a simplified submission to the repository. Much information about the context of a resource is already defined in the LMS (e.g. title, description, study level, ...) and can be automatically re-used during submission.
- Different granularities and formats
  - Sharing content and resources should be possible for small and large “chunks” of content. A simple webpage as well as a full fledged course can be stored in the repository.
  - Standard file formats (HTML, word, pdf) as well as structured formats (e.g. SCORM, IMS-CP) are acceptable.
- Rights/roles for resources (e.g. “guest”, “author”, “owner”)

- The right to read, update, create and delete shared resources is granted through a permission system based on simple roles.
- “Sharing” is a process that progressively changes the availability of a resource from being private, to sharing it with a limited set of persons, to sharing it to a wider audience (e.g. swiss institutions, world).
- Search engine
  - The search indexes and provides access only to resources that are made available by their owners.
  - The search engine indexes binary documents as well.
  - Search queries and their results can be saved and reused on external sites. This search results syndication allows institutions to reappropriate the resources that they store in the repository while at the same time enriching the list of resources for internal use.

The participants favor the implementation of a distributed repository. Universities could use their own repository or a national repository hosted by SWITCH. SWITCH would define the interfaces between the local and national repositories. The participants believe that the quality of content is better when content is stored in a local repository owned by the author’s university than if everybody can store content in a central repository.

Three possibilities exist to design and implement a repository that satisfies the above requirements. The choice of a particular approach will result from a detailed analysis of existing systems with regards to the requirements listed above. The possibilities are:

- Take a complex a system (e.g. Merlot, Careo) and “strip it down”
- Take a simple system (e.g. subversion, webdav) and build additional capabilities. For example, OOR, which is an OS solution specifically for that: [door.sourceforge.net](http://door.sourceforge.net)
- Build a system from scratch

## **eLearning Helpline**

From the point of view of the working group, the provision of pedagogical and technical advice on a national level has to continue after the end of the SVC consolidation program. Indeed, it appears that CCSPs do not have all the skills and knowledge that are required to develop complex content or to solve every problem with their LMS(s).

Online forums and event series already exist, and have been organized in the past:

- SCIL (Swiss Center for Innovations in Learning)<sup>3</sup> has organized events mainly about management of innovation and institutional change.
- SVC has organized the SVC days.
- FNL (Forum New Learning)<sup>4</sup> provides a forum and many links to pedagogical and technical information
- edutech provides valuable information about e-learning technologies

Some shortcomings of these initiatives might be that:

- Financing of their future activities is not granted.
- Some problems cannot wait for six months until the next event happens.

- Meeting from time to time at events is not enough to build a community which can also help solving everyday problems
- Self-organizing forums are not sufficient to build a community and do not guarantee to get a quick answer to a problem
- CCSPs are primarily focused on solving the problems of their teachers and not to provide their knowledge to other institutions

Therefore, CCSPs would like to have the ability to contact experts at SWITCH. The eLearning helpline would be a “meta-”competence center which is able to address as technical as well as usage oriented questions:

- Quickly answer common technical and end-user specific problems
  - Search for content online and in repositories. e.g. what resources already exist for introductory physics in german?
  - Answer technical questions. E.g. what standard is best to syndicate content from online forums, RSS or RDF? How can I archive a course with a synchronisation of video and powerpoint presentations?
  - Who is an expert in technology X?
- Build and maintain a community of experts in eLearning
  - Organisation of meetings, demonstrations, workshops, etc...
  - A community platform
  - An animator / moderator is necessary

## Development service

The integration of LMS systems with surrounding tools is a prerequisite for their widespread use. Institutions of higher education as well as SWITCH currently develop (or already have developed) services like authentication and identity management services, shared file repositories, shared calendaring systems, virtual meeting software, videoconference applications, weblogs, wikis, instant messaging, etc. Such tools are used by teachers primarily for research but also for teaching. Learning Management Systems often implement their own version of these tools and force users to maintain several parallel versions and use redundant tools.

To address these problems, the working group proposes the creation of a development service which would accomplish developments in the following domains:

### Integration of existing services

- AAI identity management (different contexts and roles). Ideally, all applications provided by SWITCH in the e-Academia framework, would use AAI as an authentication scheme. Example developments are:
  - Adapt AAI to enable the secure transport of personal student data, as defined in an e-portfolio (log of credits, courses, ...)
  - Implement seamless context switching from one application to the other. The role one user plays varies from one application to the other. For instance, a teacher uploads a course to the content repository (with editing rights) and then joins a virtual meeting (with listener rights only).

Development of « middleware » services. These developments should rely on widely accepted standards. For example, Atom (<http://atomenabled.org/>) defines the way to interact via webservices (read/post) with a weblog or a wiki. It is hence possible and desirable to write an Atom client for an LMS. In such a way, a weblog or a wiki defined outside the LMS (and that is Atom compatible) can be seamlessly integrated into the LMS.

- between services implemented by SWITCH and existing LMSs.
  - repository (one button exporter / importer)
  - video-conferencing (launching and joining)
  - e-collaboration (e.g. Breeze, etc.)
- between LMS and services not directly supported by SWITCH (webservices, protocols).
  - instant messaging
  - web-logs
  - wikis
  - calendar

Three possibilities for financing were discussed as well:

- SWITCH provides some funding in order to let CCSPs work together for the development
- SWITCH does the development directly
- SWITCH simply provides "expertise connections" among CCSPs and let them do the job with their own money.