

"A competence centre requires skills and competences"

Hungarian Competence Centre sets up localised knowledgebase to overcome language barrier

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The main goal of the Hungarian E-Governmental Free Software Competence Centre is to reduce license costs and to widen the use of open source software in public administration. The Hungarian public administration currently uses a lot of custom-made software, resulting in an application landscape of isolated islands with very little interoperability. This prevents the creation of larger, more complex e-government services. Open source code and open standards will allow public agencies to take back control over their locked-in data and extend e-government services.

The language barrier, however, constitutes a serious problem affecting the use of open source software. Hungarians in general have few foreign language skills, making it hard for IT managers and procurement specialists to get acquainted with open source software and connect with international developer communities. To improve this situation, the people from the Competence Centre have created an online open source knowledgebase describing commonly used software solutions and case studies. This allows public servants in Hungary to get acquainted with open source packages in their native language.

The Hungarian Competence Centre is very different from other competence centres. All its members, including the project manager, come from the open source community. Although they have had to learn the ways of public administrators, the diversity and hands-on experience of the team members has allowed them to find new opportunities for open source, to take an active part in pilot projects and to disseminate their knowledge and lessons learnt.

The Hungarian E-Governmental Free Software Competence Centre ([E-közigazgatási Szabad Szoftver Kompetencia Központ](#); in Hungarian) was set up in May 2012 by the Ministry of Public Administration and Justice as part of the State Secretariat for E-Government, led by deputy state secretary Gábor Fekete. "Its main goal is to reduce license costs and to widen the use of open source software in public administration," explains [project manager Csaba Erdei](#) (in Hungarian). "Another important factor was to take back control over our data, by using open source code and open standards. The transition to the Open Document Format ([ODF](#), i.e. [LibreOffice](#), formerly [OpenOffice](#)) is pivotal in this strategy."

"Public administration also currently uses a lot of special, custom-made software, resulting in an application landscape of isolated islands with very little interoperability. That prevents us from creating larger, more complex [e-government](#) services."

"We do have a large national IT strategy, but open source, interoperability and open standards are only a small part of it. Although there is no central policy urging public agencies to deploy only open source software, there are smaller statements saying that we should. And that's what we're trying to implement here. We are pioneering."

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The Electronic Public Administration Operational Programme

The E-Governmental Free Software Competence Centre is a project under the European Commission's [Electronic Public Administration Operational Programme](#). It was approved by the European Commission on 1 August 2007 for the period 2007-13. This Operational Programme falls within the framework laid out for Convergence and Regional Competitiveness and Employment Objectives, and has a total budget of around €422 million. Community investment through the European Regional Development Fund (ERDF) amounts to some €358 million, which represents approximately 1.4% of the total EU investment earmarked for Hungary under the Cohesion Policy for 2007-13.

The overall objective of the Operational Programme is to improve the performance of Hungarian public administration. Specific objectives are the improvement of public administration operational efficiency and services effectiveness.

The Operational Programme is expected to have the following results:

- increased use of electronic public administration services by citizens and companies;
- faster processing of standard cases by the public administration;
- greater numbers of state administration bodies providing on-line case handling services;
- an increase in the proportion of citizens and businesses making online payments to state administration bodies.

The Operational Programme is structured in terms of five priorities:

1. Renewal of public administration internal procedures and services (approximately 35.7% of total funding):

The main objective of this priority is to increase efficiency in the functioning of the state administration at national, regional and local levels through the reorganisation of administrative processes with the support of IT systems. Internal processes will be streamlined and adapted to provide electronic services to citizens and businesses within the public administration.

2. Developments aimed at improving access to public customer services (approximately 41.5% of total funding):

The main objective of this priority is to deliver the actions required to improve citizen services. Special attention will be paid to the accessibility of citizen services by disadvantaged people.

3. "Preferential developments" (approximately 20.9% of total funding):
This priority aims to improve the efficiency and quality of public administration services within the Central Hungary region.
4. Technical assistance in regions falling under the Convergence objective (approximately 1.4% of total funding);
5. Technical assistance for the Central Hungary region (approximately 0.4% of total funding):
This finances technical and administrative tasks in relation to the implementation of the Programme.

The E-Governmental Free Software Competence Centre

The main objectives of the [E-Governmental Free Software Competence Centre](#) (in Hungarian; EKOP-1.2.15-2011-2011-0001)

are:

1. to promote the growing share of open source applications in public administration;
2. to increase the interoperability of different systems through information technology developments based on open source tools and open standards.

The project highlights the importance of:

1. reducing the cost of software licences in public administration;
2. improving the quality of government information technology services by enhancing interoperability between different systems;
3. using the savings from reduced software licence costs to improve the quality of government information technology services;
4. eliminating vendor lock-in of national data assets through ownership of software rights (use, development, further improvement, etc.).

The Competence Centre gives advice and technical support to several projects aimed at introducing open source software in public administration. It documents this process in the form of case studies which will help future open source software migration projects.

To ensure the success of open source software introduction and migration projects, the Competence Centre considers it extremely important to provide projects with a professional knowledgebase and background material:

- To prepare for the support of pilot projects, the Competence Centre publishes studies of former Hungarian open source software migration projects, including the legal background to the use of open source software in the EU and Hungary. Other studies examine experience, observations, results, and policies with open source projects outside Hungary.
- The Competence Centre has created an open source software framework which it keeps up-to-date. As the first step in creating the framework, the Competence Centre has examined and evaluated the open source software for typical administrative and enterprise tasks. The final framework will contain open source software which the Competence Centre recommends for particular purposes, and which is suitable for

- Hungary by virtue of being fully localised, supported, available for wide distribution.
- Instructors from the Competence Centre train end users and system administrators at the institutions taking part in the pilot projects. The training material is published so that other institutions can make use of it.
 - One of the most important factors in choosing open source software for public administration is full [Hungarian localisation](#) (in Hungarian). In the case of end-user software this includes Hungarian documentation. The Competence Centre has undertaken to help localise open source software which is otherwise suitable but which does not yet have satisfactory arrangements for Hungarian localisation. Examples which the Competence Centre is working on include LibreOffice, Mozilla products such as [Firefox](#) and the [Thunderbird e-mail client](#), and the [GNOME desktop environment](#).
 - The Competence Centre is building a freely available knowledgebase of case studies, software documentation, articles and training information. The knowledgebase contains material produced by the Competence Centre itself as well as open source documents from other Hungarian and international sources.
 - Through its developers, the Competence Centre [corrects bugs and functional deficiencies](#) (in Hungarian) that crop up during open source software migration projects. The Competence Centre also plans various projects to enhance interoperability.
 - The Competence Center created introductory books explaining the basics of [LibreLogo](#) (a LibreOffice extension to teach programming in elementary schools), the [WordPress CMS](#) and programming in the [Qt framework](#). Furthermore, a complete Hungarian translation of the [LibreOffice Writer Guide](#) is also on its way. These books will be made [available online](#).

To share its professional experience, the Competence Centre is seeking cooperation with other open source software projects. To this end it takes part in conferences in Hungary and abroad. The Competence Centre also plans to organise two conferences of its own on open source for public administration. Besides sharing knowledge and experiences, these events will also promote open source software.

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Pilot projects

The Competence Centre was allocated a budget of approximately 200 million forint – about 680,000 euros – for a period of 18 months. "That's till the end of this year," Erdei explains. "It has not yet been decided what will happen to the Centre next year. There are several options. But we will continue our work; we have developed a lot of plans for the future."

"Our team consists of six people, not including the project manager and a secretary. We're currently focusing on three main areas: localisation, development and [deployment](#). For example, we are committed to five pilot projects. An important part of our mandate is the deployment of LibreOffice, including targets for the number of workstations and the number of users and

system administrators to be trained."

Localisation and development

"Most of our work on [localisation](#) and development falls under the stop-gap header," Erdei continues. "Without that our public agencies would not be able to deploy these packages. So we identify open source software that can be used by the public administration on a national, regional and local level, and we make sure it is [localised](#) (in Hungarian). Where necessary we do some [additional development](#) (in Hungarian)."

"For example, last year we created a [localised extension to LibreOffice](#), allowing children to draw images in Hungarian. The turtle graphics are used a lot in elementary schools over here, as an introductory tool to teach children to program. Replacing the closed source, platform-dependent programs of the schools with a portable open source software package, based on open standards ([OpenDocument format](#), [SVG vector graphics](#)) is education rather than administration, but still a public task. The software is available in several languages – thanks to the [translators of the LibreOffice project](#) – and is called [LibreLogo](#) because it's based on the [Logo educational programming language](#)."

Knowledgebase

"We have also developed a knowledgebase on open source software," says Erdei. "It was announced last month. The documents basically [explain to decision makers what open source software is](#) (in Hungarian), how they can use it, and why it's beneficial to them. The target audience is Hungarian public agencies who want to learn about open source software in their native language."

Part of the knowledgebase is a framework of smaller chunks of information, providing [practical deployment and hands-on configuration information](#) (in Hungarian) for dozens of packages. Eventually, this framework will be compiled into a handbook. This is an overview of the software included:

- Basic network structure: [DHCP](#) and [DNS](#)
- [Time synchronisation](#)
- [Firewalls](#) for servers and desktops: [iptables](#), [Zorp](#), [gufw](#), etc.
- Mail systems: [IMAP](#), [SMTP](#), [POP](#), [SSL](#), [virus scanning](#), [spam filtering](#), [SASL](#), etc.
- Web services: [PHP](#), [nginx](#), [lighttpd](#), [Apache 2](#), [vsftpd](#), [Pure-FTPd + SSL](#), [web analytics](#)
- [Proxy](#) solutions: [Squid](#) + [sarg](#)
- [Databases](#): [PostgreSQL](#), [MariaDB](#), [MySQL](#), setup and [tuning](#)
- [Remote management](#): senior [SSH](#) skills, [remote desktops](#), [apt-dater](#), [Screen](#), [Puppet](#), etc.
- [Logging](#) and [monitoring](#): [rsyslog](#), [Syslog-ng](#), [Munin](#), [Nagios](#), and [Monit](#)
- [Backup](#) solutions: [Dirvish](#), [rsnapshot](#), [rsync](#) over [SSH](#), [Amanda](#), [MySQL scripts](#)

- [File sharing](#): [NFS](#), [Samba](#), [Active Directory](#)
- [Printing](#): [CUPS/LPD](#) (+ [Samba](#))
- [Fax server](#): [HylaFAX](#)
- [Scanner](#) server
- [RADIUS](#) and [TACACS](#) for [Wifi](#) authentication
- [OpenLDAP](#), [389 Directory Server](#), [OpenDS](#), and [OpenDJ](#)
- [VoIP](#): [Asterisk](#), [gtalk](#)
- [VPN](#): [IPsec](#), [PPTP](#), [L2TP](#), [SSH tunnelling](#), and [OpenVPN](#)
- [Virtualisation](#)
- [SSO](#), [NSS](#), [PAM](#), [Kerberos](#), etc.
- [E-learning](#): [ILIAS](#)
- [OpenDocument](#)-based application development: [LibreOffice](#) office suite

And these are some additional chapters that will be included in the framework in the future:

- [Chat](#): [Jabber](#), [IRC](#), [Bonjour](#), [RSVPMaker](#)
- [Groupware](#): [Zimbra](#), [Citadel](#), [SOGGo](#), [Radicale](#), [Group-Office](#), [Zarafa](#), [eGroupWare](#), [Joomla](#), [Drupal](#), and [DAViCal calendar server](#)
- [Mailing lists](#): [mailman](#) and [Sympa](#)
- [Operation systems](#): how to choose?

Case studies

"The knowledgebase also contains several [open source deployment case studies](#) (all in Hungarian)," Erdei continues. "We have a few in Hungary, and we present some deployments elsewhere in Europe. For the latter, we've built on case studies that were published before on the [Joinup platform](#). That way, we demonstrate that open source software is actually working, both in Hungary and in other European countries."

The case studies are:

- **Corporate success stories:**
Examples where the use of open source software was a major financial or competitive advantage at business level. Each case study describes the initial situation, the migration process, and experiences with the system. The key factors that led to success are examined.
 - Google;
 - Twitter;
 - London Stock Exchange;
 - free internet cafe software.
- **International government success stories:**
Examples of software migration or greenfield investment in open source software

development or an ICT infrastructure by an international government, a local government or a sovereign organisation, that is still being used or has been completed with positive results.

- Switzerland;
 - The United States;
 - Russia;
 - Iceland.
- **Corporate failures:**
These case studies look at examples in which enterprise-level free software was implemented or migrated to, and which for some reason ended in failure. For each instance the case study describes the initial situation, the migration process, and experiences with the system. The key factors that led to the failure are explored.
 - **Government failures:**
Case studies in which an enterprise-level free software project by a national government, a local government or a sovereign organisation ended in failure.
 - The German Foreign Ministry free software project;
 - Birmingham libraries migration to Linux;
 - Vienna workstations, Linux and OpenOffice.org migration.

Some of the major European open source success stories are:

- **LiMux:**
how the city of Munich migrated to open source software;
- **Schwäbisch Hall:**
experiences from this small German town that in 2002 was the first to set up an ICT infrastructure based on open source software;
- **The Finnish Ministry of Justice:**
migration of more than 10,000 workstations to OpenOffice;
- **Forja de la Junta de Andalusia:**
a regional open source software repository in Spain, including the three principles laid down in local legislation: expanding knowledge, facilitating the re-use of software code, and simplifying cooperation with other governments;
- **Schools in Andalusia:**
how the region set up 220,000 Ubuntu-based desktops;
- **The UK government's open source policy:**
a directive on the use of open source and an open source procurement toolkit set out the status of open source software in the UK and provide guidance for public procurement;
- **Bohemia:**
the public use of open source software in the Czech Republic.

Evangelising

Pushing public agencies to use open source software is often a delicate matter. Unless there are specific policies explicitly stating that open source is the way to go, or that open source is preferred over proprietary software of equal suitability, decision makers in government are reluctant to change their procurement habits. In addition to issues concerning lock-in, interdependencies and inertia, factors like risk aversion, resistance to change, personal relationships, vendor push and the spread of FUD ([fear, uncertainty and doubt](#)) are important factors as well.

"Fortunately, we currently only have voluntary migrations to open source," says IT expert Gábor Zahemszky, "These people really want to use this software, which makes the transition easier. But even then we have to do some evangelising. People may not know open source software at all. Some people are not even familiar with proprietary software either. They are simply using whatever they know and can. So yes, we evangelise a lot, especially in the pilot projects, where we train users, administrators and sometimes other trainers. At the same time, people are very open here. They simply need to learn about open source software."

Language barrier

Although the language barrier constitutes a problem in a lot of other non-English-speaking European countries, this issue is most prominent in Hungary. The [Hungarian language](#), together with the Finnish and Estonian language, belongs to a separate [linguistic family](#) from the languages spoken in the rest of Europe. These so-called [Uralic languages](#) are very different from of the Indo-European language family containing the Hellenic, Romanic, Celtic, Germanic and Balto-Slavic languages spoken elsewhere. That and the history of the country have made it very hard for Hungarian people to acquire foreign languages.

"Hungarians have very few foreign language skills," software localiser Gábor Kelemen agrees. "Unlike a lot of other countries, movies and television productions in foreign languages are all [dubbed](#) in Hungary. We don't have any Hungarian subtitled television programs in English." Even within the project team not everybody speaks English.

Connecting to the community

"In Hungary, technical IT personel can read the manuals and handbooks for the software, but they generally cannot read newspapers like the New York Times or The Guardian," says Kelemen. "That makes it very hard for Hungarian IT managers and procurement specialists to get acquainted with open source software. This is a serious issue for public agencies on all levels – national, regional and local. Hungarian people find it very difficult to access the software and documentation, and to connect to the international developer communities. It is a huge barrier, and that's why it's necessary to write so much documentation in our own language. Unlocking and localising are the most important means we have to allow Hungarian public agencies to join the open source movement."

"That's why the framework/handbook is such an important tool," IT expert Csaba Varga explains. "It helps public servants in Hungary to get acquainted with open source packages in their native language. We do not provide a list of open source alternatives to proprietary software, like the British Cabinet Office does in their [options list](#). Instead, we describe commonly used software solutions on a functional level, and then present several open source packages and compare these with each other. For example, we discuss which mail server can be used for different situations."

Hands-on experience

What makes the Hungarian E-Governmental Free Software Competence Centre very different from other [competence centres](#), is that all its members, including the project manager, come from the open source community and have hands-on experience with open source software. "Varga and I have both been system administrators for many years, so we have a lot of experience in this matter," Zahemszky confirms. "We actually know what we are talking about and what we are doing."

"We are aiming to bring open source to the government," says Varga. "We want to show public administrators the easiest way to deploy and manage open source software. To me that's a dream job."

"Usually it's the other way around: public agencies trying to find out about open source," Zahemszky concludes. "Over here, we come from the open source movement and are pushing into public administration."

Skills and competences

This high level of experience with open source software makes the project unique amongst European competence centres. Clearly the government trusted people from the open source community with its mandate. "When this centre was developed, the people responsible for the project reached out to the open source community," Kelemen explains. "Experts from the community were involved in planning this project, and that's how they found us. These people know who we are and what we are capable of. So we have a track record, and we know a lot of specialists that we can fall back on."

"Even though this team might be unique in Europe, it's also an obvious way to organise an effort like this," Zahemszky concurs. "We know it's a new approach, getting in open source specialists to do a job like this. Yet it is working; we are getting a lot of results. Obviously, a competence centre requires skills and competences."

"We have backgrounds in many different areas of expertise," says Kelemen. "I'm a software localiser. In addition to the two system administrators – Varga and Zahemszky – we have a

teacher, a software developer, and a general consultant as our manager. That should be enough to introduce open source software in public government."

Government organisations

At the same time, Kelemen admits that they lack experience with government organisations and have few connections with public officials. "That's why we are very lucky with deputy state secretary Fekete. He has no background in open source himself but he is very open-hearted to the open source message and strongly connected to the world of government. So, it's easy for him to push public agencies towards open source software."

"Our State Secretariat is also helping us in this area too. They are really committed to open source and they help us with introductions to public organisations. The same is true of the [Ministry of National Development](#), which also has a say in software use. They help us in similar ways. It's all in its infancy, but we are moving."

"Meanwhile, we ourselves are evolving too," says Zahemszky. "Yes, we are new to government customs and habits. But even today our scope is already larger than it was before, with many new points of view. Being part of all these pilot projects has given us an inside view of how public agencies – public libraries and healthcare institutions, for example – work."

"When we started the framework project," Varga recalls, "we created a table of contents with what we considered to be important issues in public administration. After that, we did a lot of pilot projects, which taught us that there are huge differences in how companies and governments work. So we had to revise the contents of the framework."

Marketing skills

"What might be missing from our current team are the marketing skills related to our job," says Kelemen. "Of course we can explain to people what open source software is and why they should use it. But it's not enough to just dump the information onto them. Actually convincing them that open source is a good thing requires skills in marketing and change management. That's where we are lacking."

Still, Kelemen spends quite some time evangelising, going out on the road to talk to people and give presentations. "I have attended several conferences, for example, over the last six months, notably the [LibreOffice conference](#) held in Milan a few months ago. There I saw several very successful projects, where both users and community members were involved. It worked for them, but it's not something we have been doing over here. So I think we should."

No need to push

According to Kelemen, public officials in Hungary differ substantially in their attitude towards open source software. "Some of them are very open to this new model, others are hard to convince to change their ways. Fortunately, all of the project we were involved in were implemented voluntarily. So there was no need for us to push them; managers and colleagues were already participating and willing. That made it a lot easier to move forward."

"For example, when we were working on a public library project, we assessed their needs and came up with an open source solution they should use. As part of that effort, we examined what functionality was missing and what changes should be made to the software to make it suitable for this task."

"For another project, we introduced [GPG encryption](#) to the e-mail application. Previously the users did not know what GPG was. Now they are using it for an approval process that no longer requires permissions on paper."

Gratis licenses

According to Kelemen, the fact that open source software licenses are free makes their work a lot easier. "That is a very important argument indeed. Hungary was hit very hard by the economic crisis. We [almost went bankrupt](#). We are trying to convince people that open source is also the best for local jobs and companies. But we're only at the very beginning of this process."

Other European countries – Spain and the UK, for example – have specifically addressed the [economic aspects of open source software](#). Since most of the license costs for proprietary software are paid to companies like Microsoft and Oracle, very substantial or even unsustainably large parts of government IT budgets are exported to the USA instead of being invested in local industries and jobs. This also means that public agencies are missing out on local talent and innovations.

Procurement policies

In addition to the technical and software-specific parts of their job, the staff of the Competence Centre are working on the political and legislative side as well. "The current public procurement policies facilitate the acquisition of open source licenses," says Kelemen, "which really doesn't make a lot of sense. This should be about the use of free licenses, of course. We have already expressed our desires in this area to the policy makers. Hungary is still very far from the levels and quality of the British and Finnish open source policies, for example, but that is the direction we are heading."

"We are working on some other legislative issues as well. For example, the need for open source solutions is now a factor in the development of e-government services. They want to deploy open source but they are not sure how and at what level to introduce it, and they are asking for our opinions. So that too is a work in progress."

Moving up

"We recently launched [our website](#) (in Hungarian)," Varga says, "where we published the knowledgebase and the Hungarian open source framework. Our objective here is to promote these pilot cases, to show that open source software is indeed a viable alternative. In the near future there will be more references. After we've proven that open source does work, we can propose it for larger-scale projects as well."

"For example, we have found some really good cases in the Hungarian academic sector. We are now working to make these projects known to the public administration sector as well, so they can use them as a reference. Hopefully, the experience that has been gained in the academic sector will become part of our knowledgebase too."

"The Hungarian E-Governmental Free Software Competence Centre is a project funded by the European Union," Kelemen concludes, "so it needs to be maintained for at least five years. We're not yet certain what the centre will be like from January. The organisational structure is likely to change, but we will continue our work."

This article is written by [Adrian Offerman](#) for the [Joinup project](#) of the European Commission.