

Extremadura: building the Information Society (almost) from scratch

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1 Introduction

Almost 10 years ago, one of the less developed regions of Europe undertook a transformation process meant to help its citizens become full members of the information society. The experience of Extremadura has already become one of the best success stories that the free software movement can show.

The integral strategic plan that made this transformation possible is still evolving, and it is fully integrated in the public policy of the regional government. Perhaps the most visible aspect of the plan is the massive deployment of gnuLinEx, the Extremenian GNU/Linux distribution, in the educational system. In all the region's high schools, every classroom has a computer for every two students, and they all run gnuLinEx. But the regional strategy for the information society has other cornerstones: the *Technological Literacy and Free Software Plan* aims to make information technologies available for all citizens; Vivernet, the regional system of SME incubators, focuses on promoting and populating a services-oriented IT market based on free software.

The story of this process has received considerable attention from both specialised and mass media, but has rarely been told with the voice of its protagonists. Distilling from several hours of recorded conversations, we don't aim to cover in detail every single aspect of the Extremenian strategy for the information society, but to give a first person view of its main areas. The interested reader can find more in-depth information in the references.

2 A small region with a doubtful future

Located in the western part of Spain, Extremadura is an autonomous community that shares borders to the west with Portugal, to the north with Castile-León, to the east with Castile-La Mancha and to the south with Andalusia. Its area is slightly bigger than Switzerland's, but its population is small, just over one million inhabitants, with a population density that is less than one third of the average in Spain. The largest city in the region, Badajoz, has around 140.000 inhabitants, and only two more, Cáceres and Mérida, have more than 50.000. Most of the Extremenian landscape is defined by mountain ranges and the many valleys that lay between them, dotted by villages and farms.

Extremadura never underwent a full industrialisation and the agricultural sector is still important in the economy of the region. During most of the 20th century, specially under the dictatorship of Francisco Franco, the region was ignored by the Spanish government while others received important infrastructures. In the second half of the century over 800.000 Extremenians emigrated to more developed regions of Spain and the rest of Europe.

3 The challenge: catching the train of the Information Society

Carlos Castro is the General Director of the Department of Telecommunications and Information Society of the Junta de Extremadura, the autonomous government of the region. He receives us in his office at the *Centro de Nuevas Iniciativas* (Centre of New Initiatives), where most of the technical projects are coordinated, including the Extremenian distribution GNU/Linux. He has been one of the main actors in the regional strategy for the information society.

A former professor and Dean of the Faculty of Library and Information Science of the University of Extremadura, Carlos Castro explains how by the middle of the 1990s the basic infrastructures of the region had already improved and its economy was growing. However, the economy was far from the Spanish and European averages, and it would take time to reach them even if the region developed a strong industrial sector. “But even if we got there, would there be somebody waiting? [...] In that moment it started to become clear that even a strong industrial development would not solve the rural depopulation and impoverishment, or the risk of having a university that generates qualified professionals that can't find a job in the region because companies can't absorb them”, says Castro. At that time, the European Union was pointing to an economy based in knowledge and information technologies as the way to be competitive in the information age, and the regional government of Extremadura shared that view.

It was precisely in the context of *Infodex*, a EU-funded project led by Carlos Castro in the University of Extremadura, where the regional strategy for the information society was conceived. Still in a theoretical phase, the project was assumed and adopted by the regional government and turned into a political project. Part of the team led by Castro formed a new department of a very strategical character within the regional government. “It is unusual to have a structure in the government where part of the work consists basically on thinking [...]. In a way, we kept the dynamics of a research and analysis project that we had before, in the university”, says Castro.

The regional Intranet

One of the first risks they detected was that, if the market was left to the laws of offer and demand, broadband internet access would be available only in a few urban areas due to the scattering of Extremenian population. “The principle of the plan was using the government to guarantee that there would be no digital divide. We knew the loser's side perfectly from the previous development leap, the industrial society”. In accordance with this principle, the regional government deployed the necessary infrastructure to connect the high priority public services, namely educational and healthcare centres, to a regional high-bandwidth Intranet. “That was the first step, where we started to apply this rationale, that these technologies must be available for everyone. One of the commitments the president had acquired was acting on the educational system, since that guarantees that in the mid and long term information technologies will be present in the Extremenian society”, explains Castro. Nowadays this network connects around 1.500 public buildings in the 383 municipalities of the region, including every single educative centre of the public system.

Bringing the PC into the classroom

It is at this point where free software comes on stage. Carlos Castro remembers roughly the calculations they did at that time: “Our plan included introducing the computer in every classroom, and to integrate it with the daily tools we needed one computer every two students. In the whole educative system that implied buying around 100.000 software licenses to get started, around 30M € for general purpose applications. That made us stop and ask ourselves if there was an alternative”. But as Castro remarks, it was not only a matter of money: “The line that we crossed, between proprietary software and free software, is the line between computing for minorities or computing for everyone. [...] Even if every single user could afford it, it doesn't make sense from the point of view of the government when you think about computing as a universal service”.

The first version of the Debian-based Extremenian distribution, gnuLinEx, was released in April

2002, but “the version that was actually installed in the first high schools in October was already much better, and since then it has only improved. Our people from educational institutes and universities can design and improve the tools we use, and our computers don't have an expiration date. It is a system that we can adapt to our needs”. Of course, beginnings are never easy: “There were indeed many problems in the beginning, and many people thought it would never work. But 5 years have passed, and if you go to any high school today, they don't conceive a classroom without computers, or a subject without a reference blog where they can all work together”.

Migrating existing systems

Impressive as it is, the deployment of gnuLinEx in the educative system didn't have the intrinsic complexity of the migration of an heterogeneous IT infrastructure with existing systems, users and processes. “The first case where we consider a massive migration to free software is in the healthcare system. [...] Setting up an integral management infrastructure was essential in order to make the system sustainable, [...] and such an investment would be quickly recovered. That is how the Jara project started, with the condition that the result would be free software”. With an initial investment of 25,5M €, the *Jara* project started in 2004 and is expected to be fully implemented by the end of 2008.

Castro explains how they face the migration of other systems: “Each case is analysed separately, but keeping in mind that every technical decision brings also a political decision. It is not always clear where one begins and the other ends, [...] but decision makers take large risks with technological choices. In politics, schedules are very tight, [...] that's why public bodies are sitting ducks for privative turnkey solutions, where immediate effectiveness prevails over any future implications.”

The final objective is a complete migration of all the systems to free software, but Castro and his team are well aware that they can't expect the same degree of commitment from all decision makers in all areas of the regional government. “That's why we created an advisory committee, a commission composed by all the undersecretaries (high ranking government officials) plus some hand-picked persons, responsible of budgets and IT in different sectors. This commission coordinates all IT-related projects, [...] considering not only the commercial offers but also the consequences of the decisions we make. Politically, this commission has become aware of the strategic relevance of free software. [...] Without it being actually written anywhere, all new IT options adopted are based on free software, because some principles prevail. The source of a program is considered something fundamental and basic, and thus you are already excluding some options. This has had the effect of the government becoming aware of the influence that its decisions have in society, and specifically in the IT market of the region”.

Free software is essential for the whole regional strategy for the information society. In the Technological Literacy plan it allows a full control of the tools that are used, and guarantees that every citizen can take exactly the same tools home. For the SME incubators of Vivernet it means a whole change of perspective, since local IT companies can turn from being just intermediaries into creating their own technology. As Castro emphasizes, “In some cases we've gone faster than in others, but we haven't taken a single step back”. And in his opinion this is due to a great extent to the political implication of the government: “When a road must be built, the political part is limited to saying 'it must go from here to here', and from that point every party involved is external to the political power. In our case, the political part has been involved since the beginning and there has been continuous communication and feedback”. According to Castro, “it is not so much new software that needs to be developed, as most is already there, but one needs people that transmit the tranquillity that everything is in place, people that help you to implement it and understand the needs of the users”.

Sharing knowledge

Extremadura has greatly benefited from the effort of the free software community, and they are eager to give back at least part of what they received. “After all, the programs that our citizens are using

were made possible by people from all around the world who have contributed their talent. Thanks to them, our students have access to a range of opportunities that otherwise would have been very hard or just impossible for us to provide. The fact that we are somehow in debt has made us specially open to share our experience with everyone who wants to visit us”.

And they want to visit them indeed. Extremadura has received people from all around the world, from governments, educational institutions and all kinds of organisations that want to know more about this experience. The week before our visit, a delegation from Vietnam was here, very interested in the use of free software in civil service. “The technical experts had a very clear idea of what they wanted” remembers Castro, “they had already done their math, but the political structure is very reluctant to change”.

Castro quickly goes through a few examples of the hundreds of exchanges they have had in these years. They signed an agreement with Panama to support a new technology park (the “City of Knowledge”), where they expect free software to become a source of innovation, development and business. Uruguay was more interested in the social aspects of the Extremenian strategy, since it also has a very scattered population and great differences between urban and rural areas. The city of Sonora (Mexico) is very interested in the Technological Literacy plan, and in preparing the students of their university so that they can provide qualified services to technological companies of the San Francisco area. A scientific team from CERN, the European particle physics laboratory, was interested in using the educational network of thousands of PCs in a massive distributed computing grid. “We always thought we were catching the tail-end wagon, and in the last minute”, says Castro, “but we never thought that we would end up taking the lead of the locomotive”.

Looking at Europe

Looking north, Carlos Castro sees many interesting experiences, but “there must be a strong commitment at the highest political levels with technological development. Free software gives us the opportunity of producing technology instead of consuming it”. The role of governments is clear to Castro: “We have to take steps in the direction of information exchange formats and interoperability, after that we just have to liberalize and be legal. If governments comply with the law they shouldn't choose certain software models. [...] If we assume our responsibilities, the natural model for a government is free software, because we keep our citizen's information and we can't afford using tools that we can't audit ourselves. That is the situation today, and it could be avoided just by using free software”.

4 Universal access to the information society

One of the recurring features of the strategy for the information society in Extremadura is its universal nature: in every step of this process, special attention has been given to the fact that nobody can be left behind. Of all the projects that compose the strategy, the one that best reflects this universality is probably the *Technological Literacy and Free Software Plan* (PAT), developed by the regional government and the *Regional Association of People's Universities of Extremadura* (AUPEX).

The Technological Literacy Plan

The whole plan is implemented through a network of *New Knowledge Centres* (NCC), fully equipped with computers and internet connection. In the centre located in the *Casa de la Mujer* (Badajoz) we talk to Marco Pilo García, coordinator of the PAT, and Antonia Agudo, PAT technical expert. Meanwhile, Iván Sánchez (another of the technical experts of the centre) works with a group of retired women, who are taking their first steps with OpenOffice.org in gnuLinEx.

Agudo gives a general overview of the PAT: “There are 45 centres in Extremadura, strategically distributed to reach everyone, and every computer runs free software. We work with Extremenian citizens over 16 years in two different ways: anyone can just walk in and use an unoccupied

computer to connect to the internet, write a document, etc. And for people who don't know how to, we create groups and provide courses and workshops". Besides the basic training, they give specific courses in e-government, internet radio, videoconferencing, blogging, etc. And starting with the location of the centres, they focus on the sectors of society that have more difficulties to access information technologies by themselves: elderly people, immigrants, handicapped persons, young people with social adaptation problems, etc.

Participative teaching

One of the keys for the success of the PAT is their teaching methodology: "We do it in a very participative way. For example, with a group of homemakers we use a web portal with recipes. Each of them brings a recipe, writes it down using a word processor, uploads it to the website using a browser... that way they learn by doing something they feel comfortable with. That's why we have web portals centred on each sector of society", explains Agudo.

Marco Pilo emphasizes the relevance of free software in the plan: "In our activities we always explain why we use free software, the differences between free and privative software. [...] Most of our users have their first contact with a computer here, so they don't have any problems with gnuLinEx. And we have the most inexperienced users, so if something has to break it will break here".

User friendliness

Pilo is very satisfied with the usability of gnuLinEx: "The only problem for novel users is installation. Privative software comes already installed, that's why people don't have that problem with it". The biggest problems they have had to face are not technical, but of communication. In order to reach each target group "you must use a certain language, avoid using technical words, [...] we have to adapt our message to older and younger people, homemakers...". In this sense, many of the activities of the PAT are focused on uniting new technologies with Extremenian traditions. "For example, many older women are very active in traditional handicraft, so we create a portal for them. [...] We also have a project called Gastronomical Route, to spread the traditional Extremenian recipes". This approach has allowed the centres to be completely embedded in the daily life of citizens, specially in smaller towns.

Multimedia projects

We also talk with one of the users of the NCC, Francisco Javier Corbacho. He has used the centre since 2000: "I came in to ask for an e-mail account and became a frequent user. I participated in an online newspaper promoted by Europe Press, [...] we also started the internet radio project in 2003, [...] and now I collaborate in MundoLibreTV, a new online TV project, doing small videos on IT related topics". When he started using the centre, the computers dual-booted gnuLinEx and MS Windows, but "one day we arrived here and there was only LinEx. The change was not traumatic because we had already used it, and we had courses on Gimp and other programs".

Many of these projects have been very well documented by the team of the NCCs¹. As Antonia Agudo explains, "these materials come from the need of capturing our experiences. We wrote them in a wiki, together with all the staff of the NCCs divided in several work groups". The materials cover several projects in detail, as well as a collection of more general good practices in technological literacy.

The experience of the PAT has attracted interest from many people and organisations outside Extremadura. They collaborate very closely with the Guadalinfo² project of the Andalusian government, where they have provided training to the technical experts of 600 centres similar to the NCCs. The PAT works with the Iberoamerican Network for the Technological Cooperation

1 http://www.nccextremadura.org/index.php?option=com_remository&Itemid=118&func=select&id=11

2 <http://www.guadalinfo.net>

(IBERCOTEC), developing projects with several Latin American countries.

5 Tailoring free software

Our next stop is the *Centre for New Initiatives* (CNI), the place where gnuLinEx was born and where technical projects of the regional strategy are coordinated. We talk to Francisco Antonio Huertas, Director of the CNI, and two of the Coordinators of the centre, Jorge Villar and Antonio León.

The birth of gnuLinEx

Huertas has been in the project since the very beginning. He remembers the moment when it was decided to use free software in the educational network: “We couldn't guarantee neither the economic sustainability nor the technological independence of a project based on proprietary software. [...] We realised that you can't develop the information society for all your citizens if you don't have control over the technological tools”. They decided to develop their own free software distribution based on an existing one: “We chose Debian because it doesn't have a company behind. We took it and adapted it to our needs, [...] and being a new installation, the saving was immediate. That money has been invested in the technical development of the distribution, and in improving the educational system and other public services”.

Jorge Villar points out that “the main challenge was adapting a distribution that was mainly used in servers, like Debian, so that novel users, teachers and students that didn't have any experience in computing could use it. [...] Using free software allowed us to deploy a network of around 80.000 computers without service breaks or security problems.[...] We found out that most difficulties didn't come from the use of the software, but from changing from an educative model that comes from the 17th century, with a teacher that is the owner of information, to a model where the teacher is a guide that helps the students to find the information”. Antonio León comments in the same line: “We get back to the psychology, [...] there is always fear: fear from the user to change, fear from decision makers to make mistakes, and fear from proprietary software companies to lose their business”.

Support, support and support

The development team of this massively deployed distribution is surprisingly small. According to Huertas, “the core team is composed of 5 developers that evaluate Debian packages, create the installation system, package the distribution and maintain it. Around them we have a big support team of around 30 people from the CNI and the Education department. Every high school has its own systems administrator that provides the first support and reports problems to the corresponding reference centre. We have 6 reference centres, one for every hardware brand we have, to do primary support and forward this information to the developers”.

One of the most valuable support tools are the official forums, where users help each other. They also have a more specific support tool, that connects users directly to the support team and the developers, and a bugtracker that advanced users and collaborating developers can use for technical feedback. Jorge Villar emphasizes the importance of the Linexpedia³, a wiki-based documentation site written by high school teachers, “where most of the questions of a novel user are already answered in a plain language”.

Working with the communities

León explains that gnuLinEx is taken from Debian stable, but some packages are updated to a newer version when they are considered stable enough. They don't have much pressure to release new versions: “We don't sell every new version, so when a new release comes out it means that there are important updates and that they have been fully tested. And security updates can be taken from Debian's official repositories, because we have the advantage of being 100% compatible with

3 <http://linexpedia.gnulinux.org>

Debian”.

Their relationship with the different communities of developers and specially with Debian is very good, says Huertas, “because we have always been eager to collaborate. In fact there is an official Debian developer in our core team, and several more between our collaborators. And we often organise events in Extremadura with the Debian community. [...] We also collaborate closely with Ubuntu, Gnome, OpenOffice.org and Mozilla. [...] We belong to a movement of free knowledge, and as a government we are interested in sharing what we do here, and also in benefiting from what others do. That's why participating in development communities is our standard work methodology”.

Government developed software

According to Huertas, many governments are starting to acknowledge the importance of free software. “They are becoming aware that IT is basic for modern governments, and if they don't have control over the tools they use, [...] if their corporative applications are in the hands of private companies, then their information does not belong to the government any more, but to these companies. [...] We have given the first step, now we have to focus on developing corporate applications, on migrating existing systems and on interoperability standards”. As an example of this, the Extremenian government is about to launch Rayuela⁴, a new corporate application for the integral management of the public education system. And, as Huertas explains, “being free software we can improve it, audit its security, or pay a local company to do it for us. When governments use free software it doesn't mean the end of the market, quite the opposite: it opens the market. And it also allows us to offer this tool to the community”.

Villar gives another example: “We are developing a corporate application for the public healthcare system, and Andalusia can also use it. Likewise, Andalusia is very advanced with the development of a tool for citizen service, and we will probably adopt it. This is an example on how we can complement each other”.

Spreading the word

Besides the technical development, the CNI has carried out many communication campaigns to raise awareness on the benefits of free software in their own region, in the rest of Spain and abroad. According to a recent study⁵ commissioned by the regional government, 42% of the Extremenians know what gnuLinEx is, and 20% claim to have used it at least once. “These figures are much higher than the typical 5% you see in this kind of studies. [...] We do our best to attract users. 2 years ago we released a version of gnuLinEx in a DVD, packed with free software games”, says Antonio León, “and we are calling tenders for the development of 5 new games to be released as free software”.

Villar reminds us that if free software is to be used as a home system, it must come preinstalled with new computers. “Dell is going to sell computers with Ubuntu preinstalled, and that is good news, but here in Extremadura there is a company doing that since 2002”. The local company, Megasoft, increased its Christmas sales by a 27% that year.

Future challenges

Besides improving the usability of gnuLinEx, the CNI will be busy with the migration of the desktops in the Extremenian civil service. Villar explains the decision taken by the regional government in August 2006: “First, ODF and PDF are declared official formats for document exchange in the regional government. Second, the 100% of civil servants' desktops are to be migrated to gnuLinEx. [...] It is very important to start using open standards. I've been told recently that if I send a file in a closed format to one of the Regional Ministers she doesn't open it. She has decided that she won't open them, and I'm doing the same”.

⁴ <http://rayuela.educarex.es>

⁵ <http://www.juntaex.es/consejerias/economia-comercio-innovacion/dg-telecomunicaciones-sociedad-informacion/common/boletin-may07-n1.pdf>

6 Educating for the information society

After hearing so much about the use of gnuLinEx in the public educational system, we finally got to visit the Zurbarán high school, in Badajoz. Israel Caldito, a Computer Science teacher in this centre, invited us to step into his class with a group of the penultimate course, around 20 students of 16 or 17 years old. They are already working in an assignment, editing an HTML file with a plain text editor. They greet us and soon lose interest, turning their attention back to the screens placed between every two seats. The systems administrator of the centre, Fernando Sosa, comes in with us.

A clear lack: learning materials for free software

In the PC that sits in the teacher's desk, Caldito shows us the learning materials that he uses in his classes while he explains: "I have been developing these notes for 5 years. Other teachers are using them as well, I pass them on to my colleagues when they ask. Now I want to apply for a grant of the regional government that promotes the creation of interactive educational materials. [...] But we still lack educational materials on free software. Publishers should start producing materials for gnuLinEx, because now every teacher develops his own materials".

Specific tools for the computerized classroom

While the students continue working despite us bothering them with our conversation, Caldito shows us some of the tools he can use in class. There are several applications and educational units already installed and ready to use for several subjects. Teachers can also use Jclíc⁶, a java-based authoring system for educational content, to produce their own activities. "All these applications belong to the LinexEdu package, included in the gnuLinEx system", explains Fernando Sosa.

A control panel in his computer, ControlAula, allows the teacher to supervise what his students are doing in their computers. He can also take control of their desktops to give an example, or project a video right on their screens.

Caldito is proud of the progress of his students: "This year we are doing quite good. We'll be able to do HTML, stylesheets and javascript programming. Besides that I want to introduce some concepts on databases, SQL queries, design of relational databases and so on. Tell me where can you find a high school where students finish knowing how to code, knowing the relational model for databases and working with SQL".

Making it all work

After the class finishes we talk a bit more with Fernando Sosa about how it is to manage a centre like this one, with around 500 computers to take care of. He has worked in the centre for around 4 years, since the beginning of the project. "When we started we didn't know much, nor did we have specific courses or much documentation. We have a mailing list for all the administrators, and every day we send doubts and solve them within the list". Newcomers can benefit from all that acquired experience, that they are now collecting in a wiki.

Talking about the impact of gnuLinEx, Sosa believes that using free software since such an early age "opens their minds in some way". As for the teachers, "many of them have brought a laptop and asked me to help them install LinEx". Regarding the formats, they all use ODF because all their desktops run gnuLinEx with OpenOffice.org, "even though some of them save the documents in .doc format!".

According to Sosa, gnuLinEx is technically very good. "We have some problems with older computers, like the ones we have here. These are PIV at 1,8GHz with only 256MB RAM, and we have to cut some services. If they upgraded to 512MB we'd be fine". If they had not chosen to use free software, these machines would be considered already obsolete.

6 <http://clíc.xtec.net/en/jclíc>

7 Growing an IT market around free software

When asked about the direction that the regional strategy has to take from now on, Carlos Castro said that the investments in free software and technological literacy must affect the economy of the region, they have to serve to generate wealth and employment in the region. This is precisely the objective that has driven the Vivernet project since the beginning. To know more about it we visit the SME incubator that Vivernet has in Badajoz, and there we meet Julio Yuste, Director of the project.

Supporting local entrepreneurs

The project started in 2000, and “since its beginning it has been part of the global strategy for the information society”, says Yuste. “The main purpose of Vivernet is to guarantee that all Extremenians with an idea to start a technological business in the region have the support to make a start. We want to help all ideas related to the technological sector become business realities. [...] Since the beginning we realised that these kind of projects don't need much financing or initial investment in infrastructures, but they need constant support. That's why we created the two incubators, in Cáceres and Badajoz, and created the technical teams that can complement the lacks of entrepreneurs. These teams include business and legal advisers, documentalists and IT experts”.

Extremenians have never stood out because of their entrepreneurial character. But since its beginning, Vivernet has seen the creation of 160 SMEs in IT related areas, and more than 100 are still in business. Besides the support of the advisory teams, the incubators provide “free access to the common areas, a small fully equipped office and all basic services except telephone”. They also provide training in IT, exclusively in free software tools since 2004.

Yuste explains the process by which anyone can access these services: “When an entrepreneur comes with an idea, the first effort of our team is helping him turn the idea into a business plan. Once the plan is ready we evaluate it and decide if he can use one of the offices. [...] We value the innovative character of the plan, its technological aspects, its viability and the profile of the entrepreneur. [...] Those who don't get an office can use the rest of our services anyway”.

The rise of a new market

Vivernet also maintains a special version of gnuLinEx, LinEx PYME, adapted to the necessities of SMEs⁷. “We basically drop the applications we don't need and substitute them for business oriented software”. According to Yuste, free software has much to offer to the Extremenian economy: “It brings a possibility that didn't exist before. A few years ago, our IT companies were just selling licenses for multi-purpose solutions developed outside our region, they didn't even install them or provide support. Often the customer didn't receive a good service, causing mistrust in the market. Now, free software tools are there for all to use, anyone can provide services on them, and when customers buy these services they see the face of the person that is providing them. And that person knows the product and can adapt it to their needs, it is not customers who have to adapt to the tools they sell them”.

As Yuste explains, LinEx PYME has gained users both in traditional business and in new technological SMEs. “On one hand we have the traditional business, specially commerce, that needs technology, specific software for finance and management, and on the other hand we are working with technological companies. We want to establish a relationship between these. We are offering technological SMEs information on business models based on free software, and free software tools over which they can offer services, and we are explaining to traditional businesses which kinds of technology are available in the market and the advantages of each technology. Our aim is to help the Extremenian IT sector grow using a services model based on free software”.

Today between 10 and 15 SMEs provide services and development around free software in Extremadura, and more than 250 Extremenian companies use free software for all their IT needs.

7 <http://www.gnulinux.net>

“This represents around 7% of Extremenian companies. It may not seem much, but 3 years ago there was absolutely nothing. We are doing a big effort to provide free software business tools. In a few months we will release the new LinEx PYME, that will include tools for management, invoicing, inventory control, accounting, payroll management, receipt management, project planning, production control, workplace safety management and information systems. These last three tools have been specially commissioned by the regional government to be included in this release. With all this, together with the communication, development and office tools, we will have the most complete suite in Spain”. Despite these promising results, there are still market niches where free software is not ready to compete, “in companies that use specific tools that still don't have a free software alternative.”

Incubated in Vivernet

Yuste remembers several examples of companies that started in the incubators and have been specially successful. “There are many, but just to mention a few: Bittacora⁸, a web design company that has won several prizes, the Freak short film agency⁹, Numismática Flores¹⁰, an online shop for stamps and coins collectionists, and Sicubo¹¹, a spin-off of the University of Extremadura that works on developing multimedia technologies”.

Another successful company incubated in Vivernet is PuntoDev GNU¹², a consultancy that develops several of the free software tools included in LinEx PYME. Its director, Nicolás López, explains us about their experience in Badajoz's incubator. “We stayed here for less than a year, in 2003. [...] Our experience was very good. In our company 90% of the work is development, so you don't need to invest much at the beginning, only in work hours. It helps a lot, they provide an office, legal and technical advice...”.

His company moved from a proprietary model to one based on free software a few years ago: “We worked with Linux since 1993, and had proprietary applications for Linux. And then when gnuLinEx came out we seized the opportunity. [...] Our FacturaLinux had many downloads in Spain and Latin America, and from there on we started developing other free software tools. [...] Nowadays these tools can adapt to the needs of 90% of the Extremenian companies”. In his experience, the relations with customers have also improved: “they pay for something tangible, for a quality service in the installation, adaptation, customised development, training... they prefer to pay for that instead of just buying a license and having a phone number for support”.

8 Promoting national initiatives

As a final stop before closing this intensive round of conversations, we interviewed Carolina Grau, Managing Director of CENATIC¹³, and Pop Ramsamy, Responsible of Services and Observatory. CENATIC is the newly created Spanish *Reference National Centre for open source based ICT*, a public foundation promoted by the Spanish Ministry of Industry. The headquarters of CENATIC are located in Almendralejo, an Extremenian town, and this fact alone reflects the leading role that Extremadura has had in its creation. “The Extremenian government was the main promoter of the centre, and is a founding member of the Board”, says Grau. “There is a need for a neutral organism that helps coordinate the efforts of the different regional governments”. At the time of writing (October 2007), the Board is composed by the Ministry of Industry, the national organism for ICT Red.es, the autonomic governments of Extremadura, Andalusia and Asturias, and three companies: Bull, Atos Origin and Sun. Grau explains that “we are talking with the rest of autonomous communities to invite them to participate, [...] and also with companies that have a clear strategy on free software”.

8 <http://www.bittacora.com>

9 <http://www.agenciafreak.com>

10 <http://www.numisflores.com>

11 <http://www.sicubo.com>

12 <http://www.puntodev.com>

13 <http://www.cenatic.net>

A neutral point for free software initiatives in Spain

Carolina Grau gives us a quick overview on the main areas where CENATIC will work: “The Communication area will work in raising awareness over free software. [...] The Corporate Development area will support projects in our strategic lines; the Observatory will assess and analyse the status of these technologies in different fields, and the Services area will provide basic legal advice in free software, training and certification”.

Pop Ramsamy goes a bit more in detail on certification, one of the first challenges for the new team in CENATIC. “Many people are afraid of using free software because nothing is standardised. That's why we are studying a standardisation process for professionals, companies, software and hardware. [...] Certifying professionals is not that difficult, there are already things that can be adapted. Hardware is not that hard either. Software and companies are harder to certify. [...] And it is important that we don't harm SMEs and start-ups by requiring certificates that are hard to obtain. [...] It is a complex issue, and we are studying the different options”.

A new push to free software

Grau continues explaining the main activities she envisions for CENATIC: “We will support existing initiatives and promote new ones, detecting necessities and developing strategic and innovative projects. We will help the market of these technologies acquire a broader dimension, for example by facilitating several SMEs to work together and reach bigger markets”. She insists in the fact that “none of our activities will subtract customers from the private sector. Quite on the contrary, we aim to promote this market, and hire private companies to execute part of our budget”.

9 Conclusions

The visit to Extremadura left us with the feeling that something big is going on there. The region, unknown to the outside world 10 years ago, has turned into a showcase for the universal access to information technologies, and specially for the massive deployment of free software by public bodies. As Carlos Castro expressed it in our conversation, they aimed for a last minute jump into the tail-end wagon, and ended taking the lead of the train. During the conversations we had with some of the protagonists of this process, we were able to extract some of the reasons for the success of the Extremenian strategy for the information society.

The whole strategy is built around two pillars, universal access and free software. The first is a consequence of the public origin of the plan, its transforming purpose and its transversal character. It didn't make sense to repeat the errors of the past leaving a part of the population out of the scope of the strategy. The second one, the use of free software, appeared mainly as an economical choice, but soon became a fundamental part of the plan.

Doubtlessly one of the main reasons for the apparent success of the Extremenian strategy is the strong political vision and commitment behind it, coming from the highest ranks of the regional government. Without these it would have been impossible to develop integral strategies in so many areas of the government and public services, and the effects in the Extremenian society would have been much smaller.

It can be argued that Extremadura started from a very low position in the IT area, and that made it easier to deploy free software because no migration processes were needed. That might be true in part of the educational network and some of the New Knowledge Centres, but many other areas, like the public healthcare system, are going through a complex migration of several isolated legacy applications together with end-user desktops. In other places, like in many New Knowledge Centres or in the SME incubators, proprietary software was used first, and later migrated to gnuLinEx.

It must also be taken into account that the first versions of gnuLinEx that were deployed were based on a distribution, Debian, that has never been specially user-friendly, and much less so 5 years ago. The technical effort needed to build a distribution that would fit all the applications needed by users

in an easily installable CD was considerable.

Since the decision of using free software was taken with full support of the government, many steps have been taken to spread its use in Extremenian public bodies. Economic arguments have given place to strategic and ideological ones, and these are slowly but steadily taking root in all areas of the government. This arises from the conviction that governments must have full control over the tools they use to provide their services to citizens and to guard their private data, and that they can't discriminate citizens because of the tools they use or force them to choose a given solution. As a reflect of this conviction, Extremadura has adopted open standards as official archive and exchange formats for its documents, and is deploying free software in all civil servants' posts.

Extremadura has demonstrated that free software is a technically viable alternative to the majority of privative operating systems and applications, and that the use of free software and open standards is a solid solution to help governments better serve their citizens. We will be following closely the future progress of this exciting project that still has a long road ahead.

The authors want to thank the Foundation for the Development of Science and Technology in Extremadura (Fundecyt), and specially Maika Díaz, for their help in the organisation of the visits and interviews.

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