

1. Annex III: Studying and surveying the existing infrastructural problems: the Analysis



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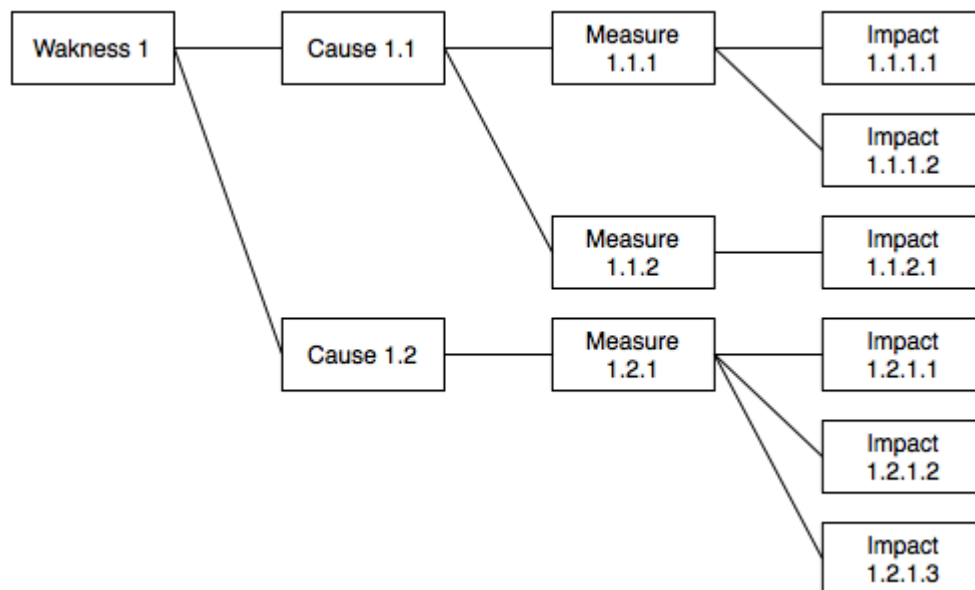
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2. Scope

This document describes the results of the analysis on the infrastructural weaknesses, by using the methodology as described in interim Deliverable 18.2, Annex II.

3. Methodology

The survey was conducted in order to gather information about the weaknesses of the F/OSS solutions that are perceived by the experts in the IT throughout EU. In each survey, first a *weakness* needed to be identified. Then, for each identified weakness, a *cause* and for a cause a *measure* for the weakness are identified. Last, the *impact* explores the size of the effects of the weaknesses. Each weakness may hold several causes, and each cause may be measured from different point of view. Schema of the survey is shown on Drawing 1.



Drawing 1: Survey Schema

A set of answers containing weakness, cause, measure and impact is regarded as one answer from the interviewee. The experts gave 183 answers, identifying 42 different weaknesses and 100 causes for these weaknesses.

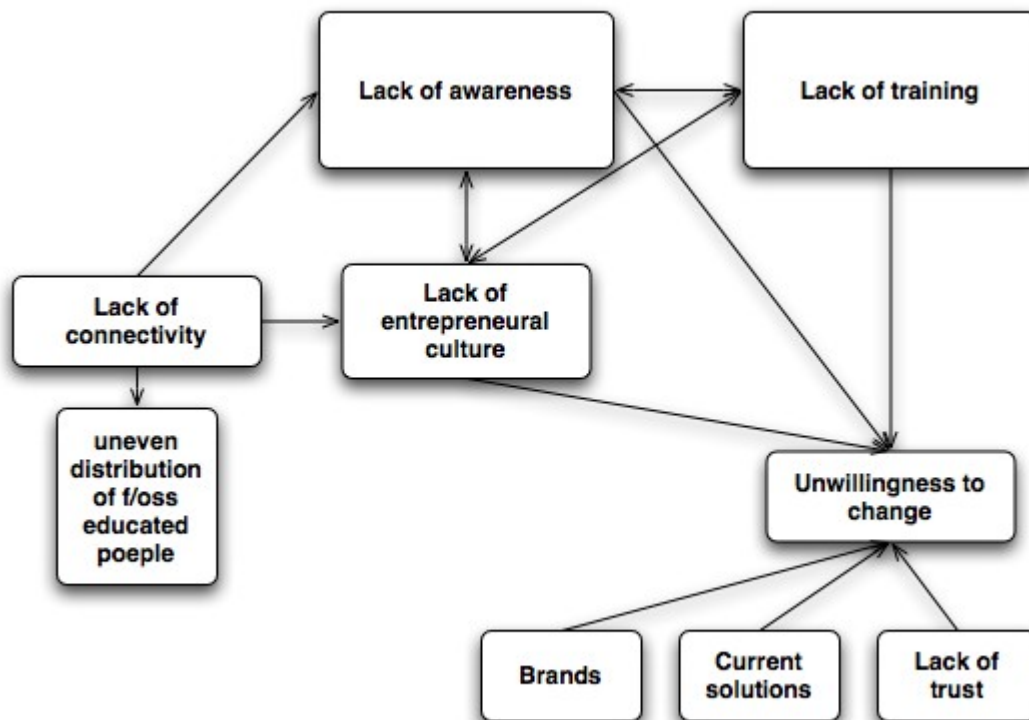
4. Analysis

The analysis took all the answers and all categories in consideration. Automatic data-mining techniques could not be applied to the results, due to high correlation of answers between different categories. Also, different descriptions were used for the same “meaning” as participants came from different countries all over Europe.

In order to analyze the answers, we took a manual approach. We “simulated” the hierarchical clustering method while taking into the account the semantics of the answers and correlation between categories. A few very clear clusters emerged. Those clusters are (in order of importance):

- Lack of awareness
- Lack of training
- Lack of entrepreneurial culture
- Unwillingness to change
- Lack of connectivity

The clusters are shown on the figure Drawing 2. The figure shows the correlations between the clusters. For each cluster, we have also extracted reasons about the consequences of the weakness it represents and the proposed solutions in order to eliminate the weakness. These two categories were derived from the answers given from the experts in the survey.



Drawing 2: Correlations between clusters.

Let us now describe our results presented on Drawing 2. As noted, five major clusters have emerged.

5. Cluster description

Lack of awareness cluster is composed by answers which have identified problems in public knowledge about F/OSS solutions. Some of the categories of answers that are included into this cluster are: “public is uninformed about OSS solutions”, “no public interest and no marketing”, “low penetration of IST and Open Source in SMEs in the region”, etc. The solutions, proposed by the experts, can also be categorized, ranging from “awareness campaigns about social and economical benefits” and “using mass media for advertising (by large F/OSS based companies)”, to addressing the younger generation, for example “involve schools and universities to promote F/OSS solutions”. Some of the experts have found the result in a passive way, with “generation-shift”.

Lack of training is highly correlated and interdependent with the lack of awareness cluster. The answers that are included into this cluster are: “lack of experienced F/OSS administrators and users”, “lack of competent educators, therefore low attention to the F/OSS education”, “lack of knowledge”, “users find F/OSS too complex”, etc. The solutions for these weaknesses are ranging from national wide propositions like “more training centers have been established in order to meet skillful staff requirements” or “installation of competence centers” to change of current software distributions, “specialized and easy-to-install distributions”.

The experts have identified the reasons for the Lack of entrepreneurial culture cluster are primarily in lack of national directives, lack of specific programs for SMEs and lack of business interest in OSS. The consequences of this lack of culture are, for example, “less demand for F/OSS based IT projects”, “most of service providers are directed to business software”, “public administration and schools use proprietary solutions”, etc. Proposed solutions again range from national scale to change or introduction of new specialized distributions.

Lack of connectivity and Uneven distribution of F/OSS educated people comes from the fact that large access providers are not interested in providing connectivity, and there is also lack of access points in rural and small village areas. Some of the experts have addressed the problem of using outdated technologies and expensive telecommunication providers. Proposed solution are, for example, “development of a intranet by the regional government” or “deregulation and opening of the telecommunications market”, and even “moving seminars throughout the country”. These “moving” seminars have been tried-out in Turkey by Linux Users Group Association and have proven to be very successful.

Unwillingness to change (with brands, current solutions, lack of trust) cluster is based on people habits and perception. Reasons behind the unwillingness to change go from “mistrust for the F/OSS solutions” and “no owner can be identified”, to “people prefer known and pricey solutions due to their more recognized public image”. The problems represented by such orientation results

in low adoption of F/OSS solutions. Some of the consequences are “no acceptance of non-commercial software”, “lock-in mechanisms, customers and suppliers are accustomed to proprietary formats” and “low attention to the FOSS education”. Some of the solutions to overcome these barriers are “introduction of quality standards (ISO9000)”, “branding of OSS software, dedicated marketing” or “raise political awareness about FOSS social and economic benefits”.

6. Conclusion

Considering attributes (reason, solution) derived from the answers as elements of the cluster, we were able to find correlations and interdependency between these clusters. The clusters on the top of the figure are the most important, while the clusters towards the bottom of the figure can be reasoned as consequences of the reasons for the clusters above. With this layout notation, we can see that the clusters *Lack of awareness* and *Lack of training* are interdependent and can be seen as a consequence for the enumeration of all weaknesses that have formed other clusters. *Lack of entrepreneurial culture* is also interdependent with both root clusters, meaning that the increase in the public awareness and the increase in available training could raise the level of entrepreneurial culture, while at the same time, the higher presence of entrepreneurial culture could also reduce the problems identified by the awareness and training clusters.

From the answers, we can conclude, that the reasons for the cluster representing *Lack of connectivity* are correlated with the reasons and consequences of the lack of awareness and lack of entrepreneurial culture. Since F/OSS world and communities rely heavily on the Internet, we believe, that investments into faster networks and wider coverage of such infrastructure throughout the country, could improve the level of awareness and raise the level of the entrepreneurial culture. Different degrees of connectivity also predetermines another small group of answers identified by the *Uneven distribution of F/OSS educated people* cluster.

The last group of clusters has more psychological than technological reasons and is dominated by the group of answers represented by the *Unwillingness to change* cluster. This cluster is influenced heavily by consequences identified in the clusters showing lack of awareness, lack of entrepreneurial culture and lack of training. It is also influenced by another group of clusters, like the influence of the *brands, lack of trust for F/OSS*, and unwillingness to try something different from their *current solution*.

Unlike popular notion among the F/OSS community that their software is well known and has gained high level of recognition, our results show, that the experts working with the public disagree. They have identified a problem of awareness of existing F/OSS solutions. The lack of training materials, teachers and proper F/OSS courses represents a big barrier for wide adoption into the entrepreneurial culture and public administration. The proposed solutions for identified weaknesses range from national scale policy adoption to using mass-media and branding of most prominent F/OSS products.

7. Responses

In the following section, we enumerate the answers from which we have concluded and identified the clusters. For each cluster, a list of consequences of the cluster is presented and a list of solutions. If it was possible to deduce the reason for the emergence of the cluster, we provide such list of reasons as well.

1. Lack of Awareness

Consequences

- Low penetration of IST and Open Source in SMEs in the region.
- Usage of known, proprietary solutions, lacking confidence in solutions.
- Lack of experienced F/OSS administrators and users.
- No public interest and no marketing.
- All organization's and customers' systems are based on proprietary OS and software.
- Public is uninformed about OSS solutions.

Proposed Solutions

- Development of awareness activities in IST and Open Source, awareness campaigns.
- Generation-shift, advertising by word-of-mouth.
- Training centers, books and magazines.
- Free computer literacy courses.
- Raise political awareness about FOSS social and economic benefits.
- Persuade resellers to offer also FOSS solutions.

Categorization of Solutions

- Involve schools and universities to promote F/OSS solutions.
- Using mass media for advertising (by large F/OSS based companies).
- Awareness campaigns (social & economical benefits).
- Generation-shift.

2. Lack of Training

Consequences

- Low penetration of IST and Open Source in SMEs in the region.
- Lack of experienced F/OSS administrators and users.
- Lack of competent educators, therefore low attention to the F/OSS education.
- Lack of knowledge
- users find F/OSS too complex

Proposed Solutions

- Development of specific training programs and awareness activities in IST and Open Source.
- More training centers have been established in order to meet skillful staff requirements.
- National Education Center is established and more than 300 public administrator is trained.
- The number of university and college courses about FOSS.
- Installation of competence centers.
- Passive: generation shift.
- Specialized and easy-to-install distributions.

3. Lack of Entrepreneurial Culture

Reasons

- No national directives.
- Lack of specific programs for SMEs.
- Lack of awareness and business interest in OSS.

Consequences

- Low penetration of IST and Open Source in SMEs in the region.
- Public administration and schools use proprietary solutions.
- Less demand for F/OSS based IT projects.
- Insufficient number of trained, qualified and skillful F/OSS administrators.
- Low acceptance of non-commercial software.
- Missing federal directives, policies.
- Lack of workforce and companies skilled in FOSS.
- Many companies do not know the FOSS business model.
- most of service providers are directed to business software.

Proposed Solutions

- Development of LINEX Empresa, accounting and invoice management program.
- Creation of an IST incubator (VIVERNET).
- Creation of entrepreneurial orientation access points.
- Awareness creation and training of entrepreneurship with a special focus on IST and Open Source.
- Some international companies (i.e. IBM and Oracle) have taken actions favoring F/OSS and Linux usage.
- Special distributions (BSI, SuSE, ...).
- Organize cross-region events, for exchanging experience and information.
- Let government and industry organize cross-region projects.

4. Unwillingness to Change

Reasons

- Mistrust for the F/OSS solutions.
- Missing standardization (ISO, etc).
- Existing deals with SW providers (with large discounts).
- Better public image by using "known" and "pricey" solutions.
- No owner can be identified.

Consequences

- Must use "known" solutions to get certified.
- Distrust in F/OSS solutions.
- Low attention to the FOSS education.
- No acceptance of non-commercial software.
- Lock-in mechanisms, customers and suppliers are accustomed to proprietary formats.
- Sellers propose branded OS and software.

Proposed Solutions

- Distributors take over the role (customization, support).
- Public market places for providers and customers (e.g. BerliOS).
- Specialized distributions.
- Branding of OSS software, dedicated marketing (e.g. Firefox).
- Introduction of quality standards (e.g. ISO9000).
- Evaluation frameworks for computing TCO of software.
- Raise political awareness about FOSS social and economic benefits.
- Key organizations (in particular public bodies) exchange data only using open standards.
- Persuade sellers to offer also FOSS solutions.

5. Lack of Connectivity

Reasons

- Dispersed and uneven distribution of the population.
- Large access providers not interested in providing connectivity.
- Lack of enough access points in rural and small village areas.
- Outdated technology, expensive telecommunication providers.

Consequences

- Low adoption.
- Problem of public awareness.
- Uneven distribution of F/OSS educated people.

Proposed Solutions

- Development of a intranet by the regional government.
- Program on the expansion of high broadband width.
- "Moving" seminars throughout Turkey by Linux Users Group Association.
- Satellite connections in some rural areas.
- Deregulation and opening of the telecommunications market.

8. Results per country

Estonia	Low trust to the IT solutions	Security infrastructure is on development phase	The usage of ID card in IT solutions	The usage of personalized security solutions arise the trust to the IT solutions
		The lack of proper knowlwdge		
	Critical mass is not achieved	The lack of knowlwdge of FOSS	Th number of university and college courses about FOSS	When the knowledge about FOSS usage arises the spread of FOSS arises also
	Lack of competencies	Low attention to the FOSS education	The number of university and college courses about FOSS	Then more knowlwdge we have then more spread the idea will be
	National standards and laws are in development phase	The life cycle of laws and standards development is long	Reduce the time for the standards and laws development and adaption	The speed of national standards and laws development can be very important factor of success
		Security infrastructure is on development phase		

Austria	Lack of awariness of Free Software in public mind	No creation of awareness in general education	Launching the Open Source Initiative Voralberg in 2004	No Impact measurable
		Less marketing activities for Free Software	Launching the Open Source Initiative Voralberg in 2004	raise awareness for SMEs, politicians and public
			classes in higher education	More Serviceproviders for Free Software
		General habits of public - bank on already existing Software	Offering new services in Free Software (CMS Systems, Browser,...)	
			Launching the Open Source Initiative Voralberg in 2004	draw a picture of the meanings and advantages of Free Software
	No willingness to change from proprietary to Free Software	Migration process takes too long, not affordable	No Measures have taken - seems to be no benefit because employes are used to proprietary software	
		SMEs Problem of filesharing between proprietary and Free Software	No Measures have taken	
		Used to proprietary software	WIFI offers retraining possibilities	less growing acceptance
	Developers and Communities are to less networked	specialists work for their own or in their community	OSIV organised sprint events (developing week)	network creation and new developing sprints every half year
	Lack of awariness of Free Software in public mind			

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Area	Weakness	Cause	Measure	Impact	
Extremadura	Lack of IST based companies in the region	Lack of entrepreneurial culture in the region	Awareness creation and training of entrepreneurship with a special focus on IST and Open Source	7033 registered users of of the incubator since 2000	
				3586 participants in training activities since 2000	
				4569 hours of training provided since 2000	
			Creation of an IST incubator (VIVERNET)	104 companies created within the framework of the incubator	
				26% of companies created in 2004 operate with business models based purely on Open Source	
			Creation of entrepreneurial orientation access points	400 points for entrepreneurial orientation offering assessment and support	
		Lack of importance of the industrial sector in the region	Programmes for technological development of the primary sector, introducing new technologies	50% of internet access, corporate web site ownership of 40% of the companies in the sector	
		Lack of large IST players settled in the region	Increased regional identity and branding of the region as innovative	National Technological Centre for Linux based in the region	
				Presence of INDRA in the region with their business unit based on Open Source	
				Creation of the software factory in the university in collaboration with IBM	
			Using LINEX to become national and international reference region for Open Source	National Technological Centre for Linux based in the region	
				Presence of INDRA in the region with their business unit based on Open Source	
				Creation of the software factory in the university in collaboration with IBM	
		Low penetration of IST and Open Source in SMEs in the region	Lack of awareness and training	Development of specific training programmes and awareness activities in IST and Open Source	3586 participants in training activities since 2000, and 4569 hours of training
			Lack of specific programmes in Open Source for micro-SMEs	Development of LINEX Empresa, accounting and invoice management programme	13.567 downloads in 1 year of application for invoice management
				27.000 CD-ROMs with the application distributed	
				8006 downloads in 1 year of application for basic accounting	
	Difficulty of access to the new technologies and the acquisition of related skills	Lack of personal economic resources	Creation of new knowledge centers offering awareness and training using LINEX	90.000 persons participating in technological literacy activities	
				33 knowledge centres	
		Aged population		90.000 persons participating in technological literacy activities	
				33 knowledge centres	
		Lack of knowledge on the utility of new technologies		90.000 persons participating in technological literacy activities	
				33 knowledge centres	
		Low level of general level of culture and education		90.000 persons participating in technological literacy activities	
				33 knowledge centres	
	Lack of connectivity points in the region	Dispersed and uneven distribution of the population			
		Large access providers not interested in providing connectivity (lack of potential for profit)	Development of a intranet by the regional government	Providing connectivity to 1400 points with access to internet	
				383 villages and towns connected to the intranet	
			Programme on the expansion of high broadband width	42509 ADSL connections installed	
				Agreement with Telefonica for 100% coverage of ADSL in Extremadura	
		Large area in combination with low number of total population			
	Lack of economic resources to upfront license costs for 1 computer per 2 students	Objective 1 region with low GDP			
		Lack of existing infrastructures created the need for large investment	Development of an operating system for education based on Linux: LINEX	Increased future sustainability of the system	
				Reorientation of the investment from licenses to hardware and training	
				Increased regional identity and branding of the region as innovative	
				Increased adaptability of the system and solution	
		Need to prepare young people for the new technologies	Integrate computers in the daily teaching methodology and learning methods	60,000 computers bought, 1 computer per 2 students in secondary education and 1 computer per 5 students in primary education	
				Access to complete technological literacy for all students starting at 6 years	

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Slovenia	Brands, standards, public image	Better public image when using pricy solutions	Generation shift	Improved public image of F/OSS	
			Self-promotion of good F/OSS solutions	Improved public image of F/OSS	
		Must use "known" solutions to get certified	Generation shift	Improved public image of F/OSS	
			Mind-shift	Improved public image of F/OSS	
		Some solutions have become "standards"	Improved functionality of F/OSS solutions	Improved public image of F/OSS	
		Distrust in F/OSS solutions	Generation shift	Improved public image of F/OSS	
		Lack of awareness	Public is uninformed about OSS solutions	Word of mouth	Adoption of F/OSS
				Increased connectivity	Adoption of F/OSS
			Lack of marketing, advertising	Generation shift	Adoption of F/OSS
				Word of mouth	Adoption of F/OSS
			Unwillingness to change current solutions	Increased security of some F/OSS solutions	Adoption of F/OSS
		Public administration and schools use proprietary solutions	Unwillingness to use OO.Org documents or PDFs		
			Unwillingness to learn something new	Ease of use	Adoption of F/OSS
				Increased security	Adoption of F/OSS
			Required proprietary document formats	Better support of OSS software for proprietary formats	Adoption of F/OSS
			Complete implementation of functionality of proprietary software	Adoption of F/OSS	

Turkey	Less demand for F/OSS education	Lack of experienced F/OSS administrators and users	More training centers have been established in order to meet skillfull staff requirements	While there are quite a log of Linux administrators on the market today, there's still a continuing demand.	
		Uneven distribution of F/OSS educated people	"Moving" seminars throughout Turkey by Linux Users Group Association (more than 25 seminars given focusing undeveloped regions between 2003-2005)	F/OSS awareness is observed among the seminar participants for the following years	
		Lack of F/OSS related books and magazines for training purposes	There has been some tendencies towards producing more books	Compared to other IT fields, the quality and quantity of press media related to training purposes is still insufficient.	
		Insufficient number of trained, qualified and skillful F/OSS administrators	Discontinuation of F/OSS based projects due to lack of IT staff	National Education Center is established and more than 300 public administrator is trained.	Adoption of F/OSS among public administrations in Ankara is increased
			Less demand for F/OSS based IT projects	Some international companies (i.e IBM and Oracle) have taken actions favoring F/OSS and Linux usage.	With these companies pushing middleware, database and web based products, more enterprise companies have switched to Linux
			Less interest of using F/OSS components for inclusion in IT projects	Three Linux magazines and more than 20 books published for the last 4 years	This has yielded a considerable amount of F/OSS document throughout Turkey, helping to form a F/OSS skills network.

Bulgaria	People do not trust to the information technologies	Old habits like cash payments and doing something by yourself are still very strong and considered more secure	Banks and employers obligatory issue to the employees debit cards to transfer salaries, if they do not have such	People are forced to use ATMs or non cash payments and start changing their view on the technologies.	
			More services by the private sector and governments are offered online	People start slowly to get used to doing something over the internet.	
			Awareness campaigns		
			Preferences if payments are made online	E-commerce is slowly growing	
		Small number of companies that offer user support on FOSS	Lack of FOSS campains and small FOSS usage in the smaller cities and villages	Projects to popularize FOSS	More than 130 NGOs in the country migrated to open source; more than 10 municipalities using open source. Increased need to have support companies
				Awareness campaigns	
		Low percentage of computer literate population	People do not have money to go to a training course or buy a computer	Free computer literacy courses	People become more familiar with IT and respectively have more trust in the technologies
				Cheap offers for computers	Mainly students are stimulated to buy computers
			People that do not work in IT do not understand why they need a computer	Information campaigns.	Raised understanding that people can have better jobs if they can work with IT.
	Low percentage of overall internet connectivity	Lack of enough access points in rural and small village areas	Satellite connections in some rural areas	Increased, but not significantly the number of connected people to the internet	

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Germany	Low Internet penetration	Outdated technology	Fiberoptic networks (ISDN, mainly east Germany)	Exclusion from DSL hampers high speed access
			WLAN access points (hot spots)	Being online at airports, hotels, railway stations ... improves business communications
			Modernization of the network	8.41 million broadband connections in Germany
		Expensive telecommunication provider(s)	Deregulation and opening of the telecommunications market	Change in habit: "living online"
				Much lower cost through market competition
				Many new providers and resellers
				New products and services (e.g. video on demand)
	Acceptance of non-commercial software	No owner can be identified	Distributors take over the role (customization, support)	Increased trust (vendors now have somebody to blame in case ...)
				Business opportunities for SMEs, start-ups, freelancers
		"Makers are just hobbyists, hackers" (low reputation)	Public market places for providers and customers (e.g. BerliOS)	Providers can be identified
				Increased trust
				Increased business for freelancers and SMEs
		Frequent updates	Special distributions (BSI, SuSE, ...)	Trust in software caused by the label of distributor
				Many thousands of standard installations
	Lack of acceptance	Plethora of separate software available	Specialized distributions (BSI, SuSE, OS-CD, ...) with selected software	Popular software becomes widely accepted ("they use it as well", herd instinct)
				Branding of OSS products ("Firefox") increased trust
				Standard installations with best-of-breed software
		Lack of trust	Political direction statement towards OSS in public administration (2003)	Cost savings in public administration
				Increase of trust
				Shift towards open standards in document exchange ...
				Increased national and international awareness (e.g. Munich going OS)
			Branding of OSS software, dedicated marketing (e.g. Firefox)	Increased market share (support, ...)
				Increased knowledge and acceptance ("all do it, so do I")
		Lack of knowledge	Passive: generation shift	OSS is popular among students which will eventually become administrators/decision makers
			Installation of competence centers	Support in German available (esp. in public admin. English language skills are not common)
				Increasing awareness and knowledge among decision makers
	Plethora of standards and systems and procedures	Lack of quality standards	Introduction of quality standards (e.g. ISO9000)	Increased awareness for quality: requirements, procedures, processes
				Fulfillment of task becomes more important than vendor of the tool
	Monolithic, proprietary Standard software has been used	Shift towards modular systems		
	Systems and procedures used are not compatible	Directive towards standardisation in public administration		
	Federal structure	Regional and national competence centers	Can provide guidance	
		Standardisation (e.g. open document formats)	Used software becomes less important as long as data can be exchanged	
			Improved data exchange among institutions (e.g. tax information between employers and tax office)	
	Federal structure			

Sweden	Administrations are dependent on old OS	Everything in administration is based on old OS	Develop a way to make OpenOffice communicate with "old" data	Administrations can change to OpenOffice without any problems
	Low public knowledge concerning OSS	No public interest and no marketing	Dissemination	A new large group of OSS customers

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Norway	even though general acceptance of OSS is good, implemented solutions is still at a low level	Even though lots of very good OSS software exists, there is still a lack of local/vertical providers of specific solutions	General marketing for creating a demand for OSS, which will spark interest by providers	Increased interest from solution providers
			Show solutions providers the business opportunities of OSS	increased solution offers
		Lack of interest to make changes among IT people in public and private sector	Marketing about the added value of OSS	increased marked demand for OSS
			having professional solution providers	increased solution offers
		Lack of knowledge about OSS among decision makers	Getting out articles and information into channels they read with a message that get their attention	Attention of added value of OSS among decision makers
		Large framecontracts at a higher level with proprietary vendors	Governmental attention to OSS in entering such contracts	Government contracts requiring OSS
		lack of knowledge in OSS among IT people in public and private sector	General education about OSS	better awareness of OSS

Ukraine	A low trust to free software	A little information about free software in mass media	Classes in higher education	Creating more mass media resources for Free Software
	Small number of companies that offer user support on FOSS	most of service providers are directed to business software	Awareness campaigns	Creating more Service providers for Free Software
	Public administration and schools use proprietary solutions	Most computers saled with OEM proprietary software	Comparing implementation of functionality of proprietary software and F/OSS	Creating free centres of distribution for FOSS. Adoption of F/OSS

Malta	No policy, framework or initiatives on OSS have been as yet undertaken in Malta by government	Microsoft enterprise agreement is in place	Political championing is necessary and proper policy	Reduced costs and less dependency on imported technology and skills
		Lack of awareness and business interest in OSS	Increased public awareness and use of OSS across the Public Sector	Reduced costs
	Lack of uptake in broadband connectivity and computer skills	Lack of knowledge on the utility of new technologies	myWeb for the industry: using ict's to become more productive. myWeb is an extremely flexible educational programme which can be offered through a number of delivery channels to reach different audiences in different settings to ensure that a larger portion of the working population becomes digitally literate, multi-skilled and with lifelong learning as second nature to them.	
	Lack of human resources specialised in OSS	No market demand		
		Use and public awareness related to OSS remains low	No measures have been noted as yet.	
		Lack of government use and endorsement of OSS	Trials of OSS and its viability conducted by the Central Information Management Unit. A Microsoft Enterprise agreement was eventually signed.	
		Academic education does not use or teach about OSS	Discounted prices offered on educational proprietary software to all 70,000 students who are eligible to software sold as low as 5% of its retail price.	Positive effect on general ICT skills but to the detriment of OSS
		Government's persistence in promoting proprietary software exclusively within schools, and their teachers/students	Worldwide partners were engaged to offer software needed to make your computer work. Proprietary educational packages such that your computer becomes your most important research tool both off and on line were provided.	Positive effect on general ICT skills but to the detriment of OSS
	Low penetration of Open Source in SMEs in the region	Lack of awareness and training	A couple of private training centres have started offering OSS product training and certification	Moderate effect
		Lack of OSS government use	No measures have been noted as yet.	Lack of interest in OSS
		Lack of specific programmes in Open Source for micro-SMEs		

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Italy	Lack of acceptance	Plethora of separate software available (especially Linux distributions)	Specialized and easy-to-install distributions	Non-technical users are able to install and update FOSS products
			Increase technical knowledge about FOSS	More users are able to choose, install and customize properly the system which best fits their needs
		Better public image when using pricy/branded solutions	Marketing efforts	More users are able to choose, install and use properly the system which best fits their needs
				FOSS is perceived as more secure and of higher quality
				FOSS is perceived as more ethical and socially useful
				FOSS is perceived as younger and trendy
		Low reputation of FOSS (written by hackers, no identified responsible firm)	Distributors/consulting firms take charge of FOSS	Managers and developers willing to use FOSS are able to overcome legal objections
			Increase awareness that FOSS is in fact of superior quality	FOSS becomes more trusted
	Lock-in mechanisms	Customers and suppliers are accustomed to proprietary formats	Key organizations (in particular public bodies) exchange data only using open standards	More and more vendors will support also open formats
			Raise political awareness about the importance of open standards	Open standards are mandated in software and Internet systems for public bodies
		Unwillingness/laziness to change current solutions	Evaluation frameworks for computing TCO of software	Users can correctly evaluate costs and benefits of FOSS, and decide thereof
			Marketing efforts	Users are more prone to change
		All organization's and customers' systems are based on proprietary OS and software	Increase awareness and knowledge of FOSS in schools	More end users, technical personnel, managers aware of FOSS advantages
			Develop frameworks and process to perform and control migration	Users can trust that a migration can be performed minimizing risk
			Raise political awareness about FOSS social and economic benefits	Grants for developing innovative, FOSS-based solutions
				Guidelines favouring software able to reduce costs and lock-ins
	Lack of workforce and companies skilled in FOSS	FOSS not taught enough in schools	Raise political awareness of advantages of including FOSS in curricula and courses	More schools teach FOSS and, consequently, more people knows about FOSS
				Increase awareness of advantages of using and teaching FOSS among high school teachers
		Lack of documentation and courses	Open content initiatives (with Wikipedia approach) to produce online documentation about learning FOSS systems	More people will learn FOSS
			FOSS vendors launch a coordinate effort to produce documentation and books about learning FOSS systems	More people will learn FOSS, and more schools will teach FOSS
		Many companies do not know the FOSS business model	Increase awareness about FOSS business models	More software companies will adopt FOSS business model
	Public is uninformed about OSS solutions	FOSS is not used nor even mentioned in schools and universities	Obtain commitment from government and regional authorities	As the number of public schools is very high, the FOSS market expands
			Launch a campaign aimed to increase awareness among teachers and students	A growing wave of knowledgeable people, asking for FOSS products
		Sellers propose branded OS and software	Persuade sellers to offer also FOSS solutions	Customers will be presented with branded and OS alternatives, and will be able to choose
		Lack of marketing, advertising	Word of mouth	Public awareness will increase
			Big FOSS players should invest in marketing OS solutions	Public awareness will increase