

**towards Open Source Software adoption and dissemination
tOSSad**

Contract No 015981

F/OSS Usability Workshop

D4

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1. Scope

The usability work package of tOSSad aims at tackling the main usability obstacles in F/OSS and leading to a breakthrough of usability in F/OSS by assuring that usability will be paid more attention in F/OSS in the future. Following up on this objective a usability workshop with participation of the usability experts within the project was initialised. For the preparation of the workshop a short survey among the participants was conducted. The main reason for performing this survey was to ascertain the relevance and the level of sophistication of F/OSS and the experiences of the tOSSad WP 3 participants.

Based on the survey results the agenda for the workshop was set up. So within the workshop the market relevance of F/OSS was ranked, usability improvement potentials of F/OSS office applications were revealed and prioritised and finally first potential measures to overcome the usability barriers were worked out.

Within this deliverable the results of the workshop preparation phase and the workshop results are documented.

2. Preparation Phase

Within the workshop preparation phase a short survey was conducted. A questionnaire was set up and structured in three thematic areas. The questions asked and the results of the survey of these three areas, relevance of F/OSS, level of sophistication and F/OSS experiences will be presented in the following chapters. The questionnaire was answered by all 7 experts of the usability WP3.

Relevance of F/OSS

Using a 5 point Likert scale from 1 “not important” to 5 “very important” the tOSSad usability experts were asked “How important are the following software categories for your company/organisation and how important do you think are they in general?”. This question was supposed to be answered for different F/OSS application areas and with respect to the global relevance and the relevance for the representing organisation. Knowing that tOSSad will not have the capability to address usability obstacles of all F/OSS applications areas, this question was asked in order to make sure that tOSSad will at least focus on the most relevant F/OSS applications areas. The table which was filled out by the usability experts is shown in figure 1.

1.1.1 How important are the following software categories for your company/organisation and how important do you think are they in general? (please rank from very important to not important)					
	Relevance				
	very important	important	medium	less important	not important
Application Service Providing – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application Service Providing – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating System – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating System – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content Management Systems – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content Management Systems – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database Systems – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database Systems – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enterprise Resource Planning Software – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enterprise Resource Planning Software – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupware – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupware – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Products – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Products – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scientific – technical Software – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scientific – technical Software – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application server / Portal Software – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application server / Portal software – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer / Supplier Relationship Management – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer / Supplier Relationship Management – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development Systems – regarding your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development Systems – in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 1: Relevance of F/OSS application areas

For the analysis of these questions the mean and standard deviation was used. Regarding the organisation internal relevance of the above mentioned F/OSS application areas the following (see figure 2) depicted relevance was found.

Relevance internal											
	ASP – internal	Operating System – internal	CMS – internal	Database Systems – internal	ERP – internal	Groupware – internal	Office Products – internal	Scien.–technical SW – internal	Appl. server/portal SW – internal	CRM / SRM – internal	Development Systems – internal
Mean	3,29	3,86	3,29	3,71	2,00	3,57	4,43	2,86	3,71	2,57	4,00

Figure 2: Relevance of F/OSS application areas within the experts’ organisations

It could be revealed that the tOSSad usability experts use F/OSS in particular for office tasks and developments followed by the use of F/OSS operating systems. F/OSS ERP (Enterprise Resource Planning) solutions on the other side are not of high relevance in the experts’ organisations.

The results of the internal relevance correspond to a high extent with the results of the general relevance of different F/OSS application areas as shown in figure 3.

Relevance in general											
	ASP – in general	Operating System – in general	CMS – in general	Database Systems – in general	ERP – in general	Groupware – in general	Office Products – in general	Scien.–technical SW – in general	Appl. server/portal SW – in general	CRM / SRM – in general	Development Systems – in general
Mean	3,71	4,29	4,00	4,21	4,21	3,57	4,57	2,86	4,00	3,57	4,33

Figure 3: General relevance of F/OSS application areas

Similar to the internal relevance, the experts ranked F/OSS office applications with a mean of 4.57, the most important F/OSS. In accordance to the internal relevance the office applications are followed by F/OSS developments systems and operating systems. An interesting point is that the experts tend to rank the general relevance of F/OSS application areas significantly higher than their internal relevance. For instance the F/OSS ERP general relevance is ranked with a mean of 4,21 and therefore 2,21 points higher than the internal relevance. However the analysis has shown that F/OSS office applications attain an extraordinary standing.

Again using a Likert scale from 1 “not sophisticated” to 5 “very sophisticated” the tOSSad usability experts were asked “How would you rank the reached degree of developments of the following open source software in terms of functionality and usability as far as you are familiar with it?”. This question was asked in order to reveal the F/OSS application areas with the highest improvement potentials in terms of functionality and usability. Figure 4 depicts the questions answered by the usability experts.

1 How would you rank the reached degree of developments of the following open source software in terms of functionality and usability as far as you are familiar with it? (please rank from very sophisticated to not sophisticated)	Level of sophistication				
	Very sophistic.	Sophistic.	Medium	less sophistic.	Not sophistic.
Operating System – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating System – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content Management Systems – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content Management Systems – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database Systems – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Database Systems – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enterprise Resource Planning – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enterprise Resource Planning – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupware – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupware – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Products – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Office Products – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application server / Portal Software – regarding functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application Server / Portal Software – regarding usability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4: Level of sophistication of F/OSS application areas

Again, for the analysis of this question the mean and standard deviation were used. The experts were asked to expose their opinion only for the application areas they are familiar with it. So if there is no data in different cells in the following figure 5, this means that an expert was not familiar with this specific application area (The two bottom lines of the table are reflecting the mean and the standard deviation. The standard deviation is marked in grey).

Level of Sophistication													
Operating System – functional	Operating Systems – usability	CMS – functional	CMS – usability	Database Systems – functional	Database Systems – usability	ERP – functional	ERP – usability	Groupware – functional	Groupware – usability	Office Products – functional	Office Products – usability	Appl. server/portal SW – functional	Appl. server/portal SW – usability
4	3	3	2	3	3	2	2	2	2	4	3	2	2
4	3	3	3	3	4				3	4	4	3	3
5	3	4	4	5	5				4	2	5	5	4
3	4	4	4	4	4	3	3	2	2	5	4	4	3
4	4	2	2	3	3	1	1	1	1	3	3	1	1
5	4	5	5	4	4	3	3	3	3	4	4	5	5
5	3	3	4	3	4				3	4	4	3	3
4.29	3.43	3.43	3.43	3.57	3.86	2.25	2.25	2.57	2.43	4.14	3.71	3.14	2.86
0.76	0.53	0.98	1.13	0.79	0.69	0.96	0.96	0.98	0.98	0.69	0.76	1.35	1.21

Figure 5: Results: Level of sophistication of F/OSS application areas

Having rated the functionality and usability of each given F/OSS application area, the results have shown that the bigger the gap between the rating of the functionality and the usability, the higher the improvement potential of the usability area is. We can conclude that an application having well defined and integrated functionality but has not found the market break through that could be due to the poor usability.

Experiences with F/OSS and qualification to be usability tested

To get insights about the experiences of the usability work package participants, they were asked to mark, not on an application area but on a product level, F/OSS they have experiences with. In addition they were invited to state their opinion, which of the F/OSS “products” they belief are suitable for usability testing.

In the following chapter an excerpt of the experts’ questionnaire and the respective experts' results are listed, due to the previous used F/OSS application area structure. This was done to give an overview of popular F/OSS products on the one hand and to demonstrate the expertise of the participants on the other hand. Following this a summary of the results is given.

F/OSS - Operating Systems

Operating systems	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source operating systems		
Linux		
OpenBSD		
FreeBSD		
Other:		

Figure 5: Expert Questionnaire: Operating Systems

Open Source operating systems							
Linux	OpenBSD	FreeBSD	Other:	Linux RE	OpenBSD RE	FreeBSD RE	Other RE
1							
1	1	1		1			
1				1			
1		1		1		1	
1				1			
1				1	1	1	
1				1			
7	1	2		6	1	2	
Experiences				Recommendation			

Figure 6: Operating Systems: Expert Experiences and Usability Test Recommendation

F/OSS - Office Products

Office products	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source office products		
OpenOffice.org		
KOffice		
Gnome Office		
Other:		

Figure 7: Expert Questionnaire: Office Products

Open Source office products							
OpenOffice.org	Koffice	Gnome Office	Other:	OpenOffice.org RE	KOffice RE	Gnome Office RE	Other RE
1				1			
1	1	1		1			
1	1	1		1	1		1
1	1			1	1		1
1		1		1			1
1				1			
1	1			1			
6	4	3		6	2		3

Experiences Recommendation

Figure 8: Office Products: Expert Experiences and Usability Test Recommendation

F/OSS - Groupware

Groupware	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source groupware		
OpenGroupware.org		
PHPGroupware		
Ximian Evolution		
Other:		

Figure 9: Expert Questionnaire: Groupware

Open Source groupware							
OpenGroupware.org	PHPGroupware	Ximian Evolution	Other:	OpenGroupware.org RE	PHPGroupware RE	Ximian Evolution RE	Other RE
1							
1	1	1					1
1	1			1	1		
	1				1		
		1		1	1		1
	1	1					1
3	4	3		2	3		3

Experiences Recommendation

Figure 10: Groupware: Expert Experiences and Usability Test Recommendation

F/OSS – Content Management Systems

Content Management Systems	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source Content Management Systems		
Typo3		
Zope		
OpenCMS		
Other:		

Figure 11: Expert Questionnaire: Content Management System

Open Source Content Management Systems							
Typo3	Zope	OpenCMS	Other:	Typo3 RE	Zope RE	OpenCMS RE	Other RE
	1	1					
	1						
		1				1	1
	1					1	1
				1	1	1	
0	3	2		1	2	3	

Experiences Recommendation

Figure 12: Content Management Systems: Expert Experiences and Usability Test Recommendation

F/OSS – Graphic and Video Software

Graphic and video software	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source graphic and video software		
The GIMP		
XFig		
PoVRay		
Other:		

Figure 13: Expert Questionnaire: Graphic and Video Software

Open Source graphic and video software							
The GIMP	XFig	PoVRay	Other:	The GIMP RE	XFig RE	PoVRay RE	Other RE
1							
1	1	1		1			
1				1			
1		1		1			
1	1	1	Inkscape	1			Inkscape
1				1			
6	2	3		5	0	0	

Experiences Recommendation

Figure 14: Graphic and Video Software: Expert Experiences and Usability Test Recommendation

F/OSS – Enterprise Resource Planning

Enterprise resource planning systems	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source enterprise resource planning systems		
Compiere		
Other		

Figure 15: Expert Questionnaire: Enterprise Resource Planning

Open Source ERP systems			
Compiere	Other	Compiere RE	Other RE
		1	
		1	
0		2	

Experiences Recommendation

Figure 16: Enterprise Resource Planning: Expert Experiences and Usability Test Recommendation

F/OSS – Web Browser

Web browser	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source web browser		
Mozilla / Firefox		
Konqueror		
Other:		

Figure 17: Expert Questionnaire: Web Browser

Open Source web browser					
Mozilla / Firefox	Konqueror	Other:	Mozilla / Firefox RE	Konqueror RE	Other RE
1			1		
1	1		1	1	
1	1		1	1	1
1	1		1	1	
1			1		
1		1 epiphany	1	1	1 epiphany
1		1 epiphany	1	1	1 epiphany
7	5		7	5	

Experiences Recommendation

Figure 18: Web Browser: Expert Experiences and Usability Test Recommendation

F/OSS – Customer Relationship Management

Customer relationship software	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source customer relationship management		
Compiere		
OpenCRX		
Other:		

Figure 19: Expert Questionnaire: Customer Relationship Management

Open Source customer relationship management					
Compiere	OpenCRX	Other:	Compiere RE	OpenCRX RE	Other RE
			1	1	
			1		
0	0		2	1	

Experiences Recommendation

Figure 20: Customer Relationship Management: Expert Experiences and Usability Test Recommendation

F/OSS – Scientific and Technical Software

Scientific – technical software	Marking	
	experiences	Recommendation for Tossad usability testing
Open Source scientific – technical software		
IT++		
SNNS		
GNU Plot		
SciLab		
Other:		

Figure 21: Expert Questionnaire: Scientific and Technical Software

Open Source scientific – technical software									
IT++	SNNS	GNU Plot	SciLab	Other:	IT++ RE	SNNS RE	GNU Plot RE	SciLab RE	Other RE
			1						
								1	
		1							
		1	1					1	1
0	0	3	1		0	0	2	1	

Experiences Recommendation

Figure 22: Scientific and Technical Software: Expert Experiences and Usability Test Recommendation

Summary of the Experiences and Recommendation

For the expert workshop and in particular for the further proceeding of the usability work package both the experience of the participants and their opinion which F/OSS products are adequate to be usability tested are of high relevance. Therefore, the experience and the recommendations of the different partners are summarised. The following figure depicts the top 4 F/OSS products the partners are experienced with.

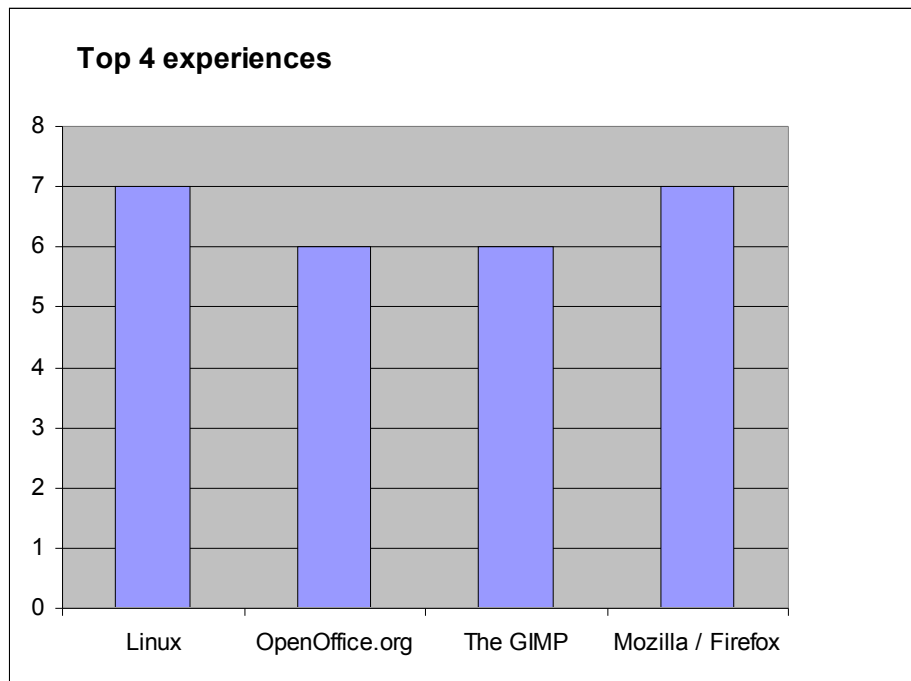


Figure 23: Top 4 F/OSS due to partner experiences

Figure 23 shows that all partners have experiences with Linux and Mozilla / Firefox as well as almost all are experienced with OpenOffice.org and The GIMP. So we are convinced that we have a powerful expert team within the project that is able to make substantiated statements to topics like general usability problems, market trends, improvement potentials and measures, etc., regarding these F/OSS products, as was required to do in the expert workshop. The top 4 chart of the F/OSS recommendation for usability testing looks rather similar to the top 4 chart due to partner experiences.

This means that Linux, Mozilla / Firefox and OpenOffice.org will be usability tested within Task 3.6 and 3.7 of the tOSSad project.

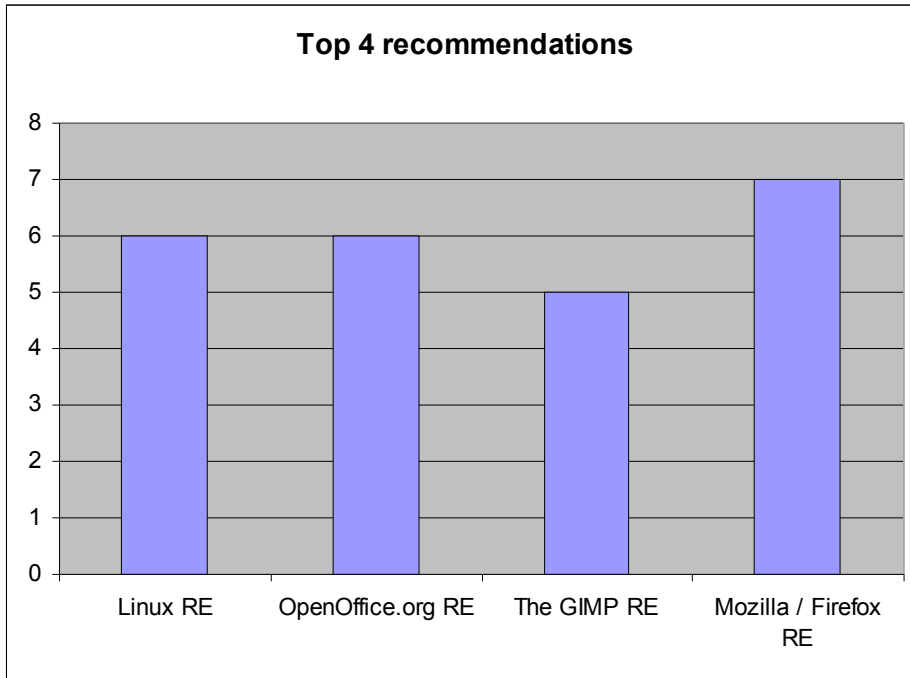


Figure 24: Top 4 Recommendation for Usability Testing

3. Usability Expert Workshop

Structure

Based on the experiences of the partners, which have been revealed within the survey, the expert workshop was set up. As a result, the following three different working areas were distinguished:

- Part A: Assumption of the development of the market share compared to a main competitor
- Part B: Finding of general office applications and usability problems, followed by a prioritisation and creation of sufficient measures to overcome those with the highest priority
- Part C: Revealing of the 3 years' trend of the different F/OSS application areas and business potentials

In order to achieve this in an efficient way, different moderation tools were used during the workshop. So for the prediction of the market share barometer, for the second issue a brainstorming using cards and for the market trend two dimensional graphs were applied.

The results of the workshop are shown within the following sections.

Results

Part A: Barometer F/OSS Market Share

As depicted in figure 25, the usability experts were asked to rank, how they expect the market share to be within 5 years from now of F/OSS compared to MS products.

Workshop Part A - Barometer

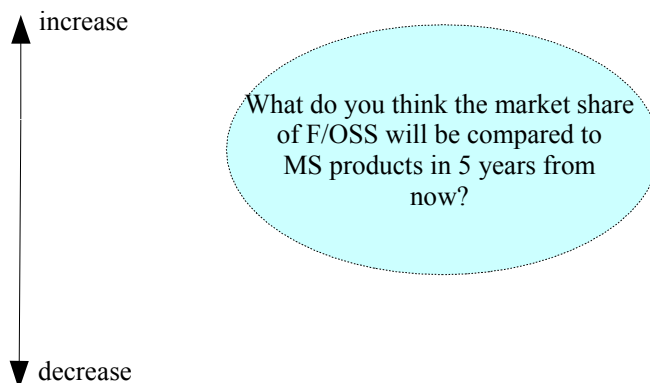


Figure 25: Market Share Barometer Question

Thereby the task was not only to place a point along the increase-decrease line but also to explain why the point was placed exactly there. The different opinions of the partners are presented in figure 26.

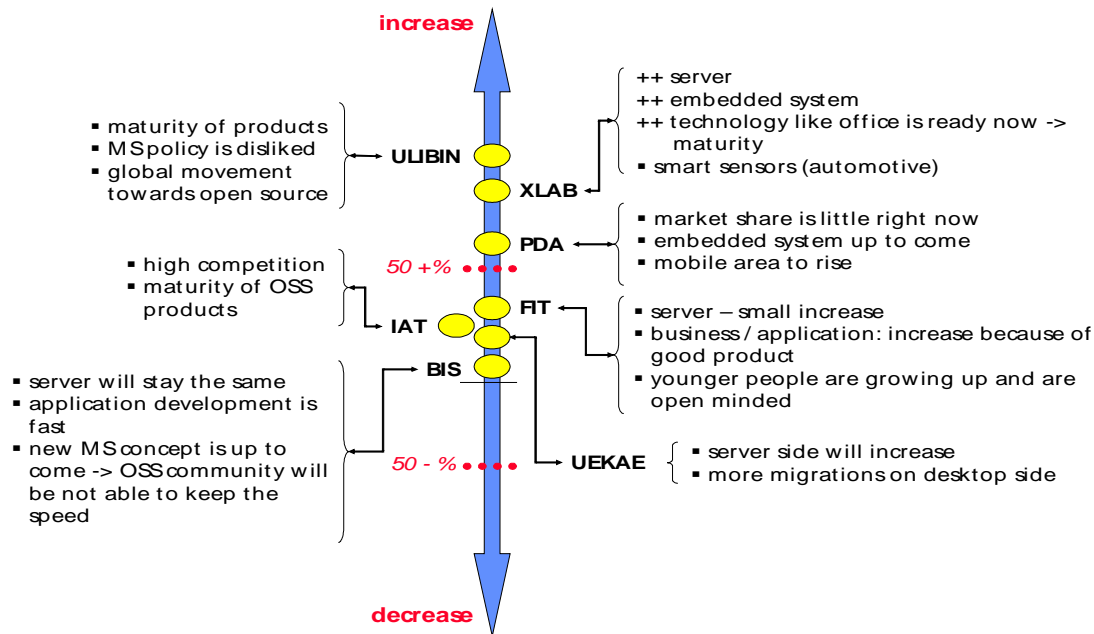


Figure 26: Market Share Barometer Expert Results

All experts agreed that the market share of F/OSS will increase within the next 5 years compared to MS products. However, there is disunity about the extent of the increase. Whereas some of the partners expect an increase of about 5-15%, others expect an increase of the market share of about 100%. These different appraisals may result in the fact that the experts are from different countries (Turkey, Italy, Slovenia, Ukraine, Bulgaria, and Germany) which face different initial situations regarding open source and Microsoft products.

The most mentioned pro-argument for F/OSS is that meanwhile F/OSS reached a high level of maturity and therefore is competitive from a functional point of view. With some additional improvements regarding the usability of the products and associated marketing measures an increase of the market share should be reached. In addition, as the market share nowadays is quite small, the potential for a market increase is high. Furthermore it was mentioned that open source initiatives will focus on new application areas, respectively improve this areas like smart sensors and/or mobile applications. Finally some strategic decisions from countries, communities or companies towards open source and changing minds of in particular younger people do have the potential to lead to an increase of the market share of F/OSS.

As a major criterion that in a way hinders F/OSS to increase, the fact was mentioned that MS will not sleep, has powerful developers and promising new concepts to come, so that F/OSS initiatives will have serious problems to keep up the speed.

Part B: Usability Improvement Potential

Part B of the workshop was dedicated to a brainstorming session using cards. Thereby as a result of the preparatory survey (see section 2.1 Relevance of F/OSS) and in order to specify the scope, F/OSS office applications were chosen to be the focus. So, regarding the usability issues, the experts were asked to write down insufficiencies of F/OSS office applications. In doing so the usability experts were briefed to write only one argument on a card with not more than three lines.

Workshop Part 2 – Metaplan card query

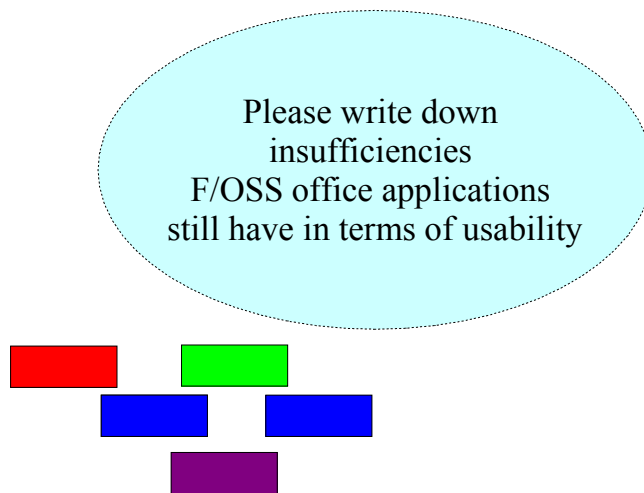


Figure 27: Brainstorming Question

After the card preparation phase of the experts the cards were gathered, mixed and separately introduced. The expert, who wrote the argument on the card, was asked to explain the point. In parallel to the discussion a clustering of the cards due to different thematic areas was conducted. After the clustering process the clusters were named and prioritised. For the prioritisation every expert got 5 points and the instruction to put the points on the clusters the expert thinks are the most critical ones. Thereby it was allowed to cumulate two points but not more than two. The results of the clustered and prioritised arguments of the brainstorming session are depicted in Figure 28.

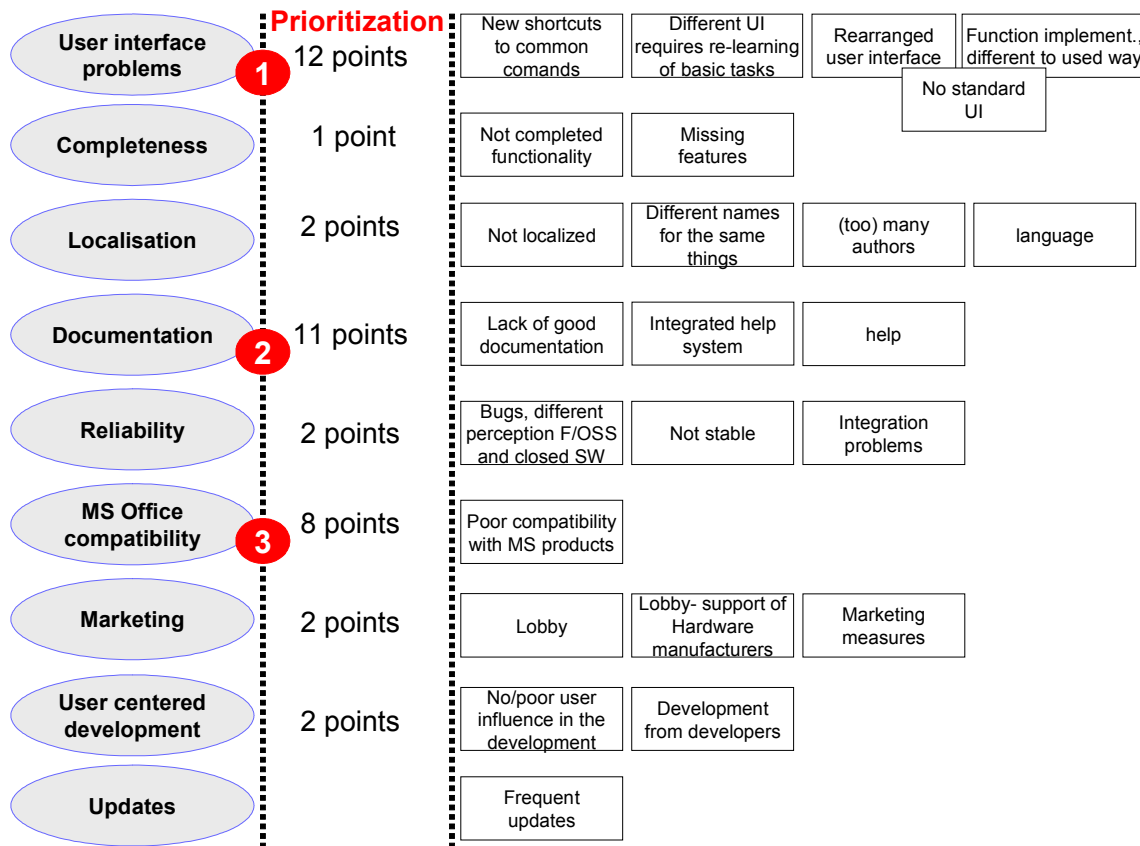


Figure 28: Results of the Brainstorming Session

As shown in figure 28, nine clusters of insufficiencies of F/OSS office products were identified within part B of the expert workshop. Whereas all areas are of importance the three clusters User Interface Problems, Documentation and MS Office Compatibility were ranked to be of particular relevance. It seems that F/OSS office applications meanwhile reached a high level of maturity but are still lacking behind closed office applications in the area of user interfaces.

In this respect missing standards have come up as main problems. User interfaces change from application to application (like word processing applications and spreadsheet applications) what makes it even more problematic from version to version. So there is always a kind of re-learning necessary in order to be able to work with the product efficiently. This is understandably leading to acceptance problems. At the second place documentation problems were ranked. The sometimes poor overall documentation was an issue as well as the integration of a help feature. Some of the documentation problems are also related to the localisation cluster.

So all three cases

- missing documentation,

- poor or even wrong documentation and
 - bad or not translated documentation
- are identified with the help of usability experts' opinions.

Thirdly, the MS Office Compatibility cluster was ranked. Referring to the wide market share of MS office products, there is almost no way to communicate or share information without being compatible to these. So for the market acceptance this is a major restraint.

Besides the discussion of the F/OSS usability insufficiencies, it was also aspired to find appropriate measures and ideas how to overcome the three major problems. The results of this workshop task are presented in figure 29.

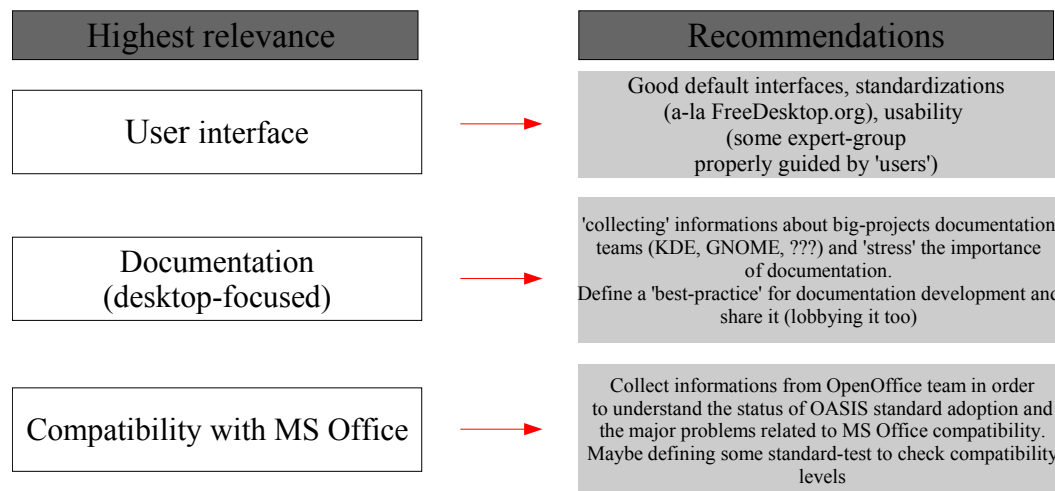


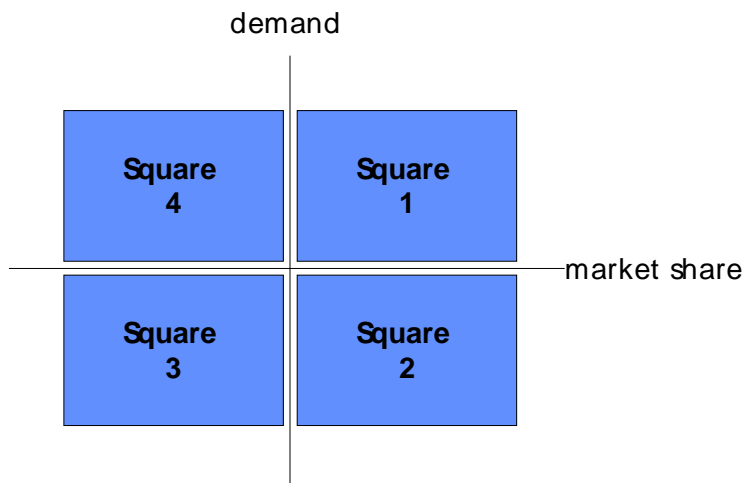
Figure 29: Recommendation on how to overcome main F/OSS usability insufficiencies

In summary, strong initiatives seem to be mandatory to overcome F/OSS (office) usability problems. Otherwise there will not be any standardisation. In addition, it is very important that effort will be combined and that it follows up on the same or at least similar objectives. Only that way it seems possible for F/OSS to reach a competitive position.

Part C: F/OSS Trends

The last part of the expert workshop dealt with gathering information about market trends and developments of the different F/OSS application areas. So the experts were asked to place points in a two dimensional chart and express their opinion on the market development of the different F/OSS areas within the next three years. One dimension is representing the overall market demand, the other dimension the market share. The development or trend can be positive or negative for both dimensions.

So the following four squares can be distinguished:



- Square 1 means that the overall market demand for products in that area is rising within the next three years and in addition the market share of F/OSS applications in this area will also grow. Within this growing market F/OSS applications are growing above average.
- Square 2 implies that the overall market demand is shrinking. Nevertheless F/OSS applications in that area are not shrinking or not that fast as the competition/closed source products. So the market share of F/OSS applications in that area is rising.
- Square 3 is the negative square. Products in that area normally do not have a promising future at least within the considered three years' period. Product areas that are placed in that area are facing a shrinking overall demand as well as an upcoming reduction of the market share.
- Square 4 means that F/OSS application areas are losing their market share against competitors/closed source products whereas the overall demand for products in this area is rising.

In addition, as shown in figure 30, the workshop participants were also asked to express their opinion, if they expect one application area to have a high business potential for F/OSS. The workshop participants were asked to only express their opinion on the application areas they are aware of.

Workshop Part 3 – Market Potential

To be placed in a 2 dimensional chart: **market share - demand**

In addition to be marked like Mickey Mouse if they have high business potential

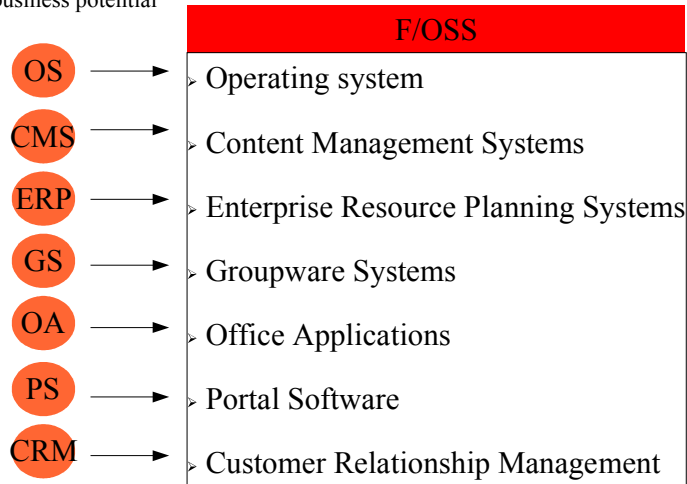


Figure 30: Task Formulation Market Potential

Based on the above mentioned task the experts placed their F/OSS application area points in the two dimensional charts. The results of the placements are depicted within the following chapter.

Operating System OS

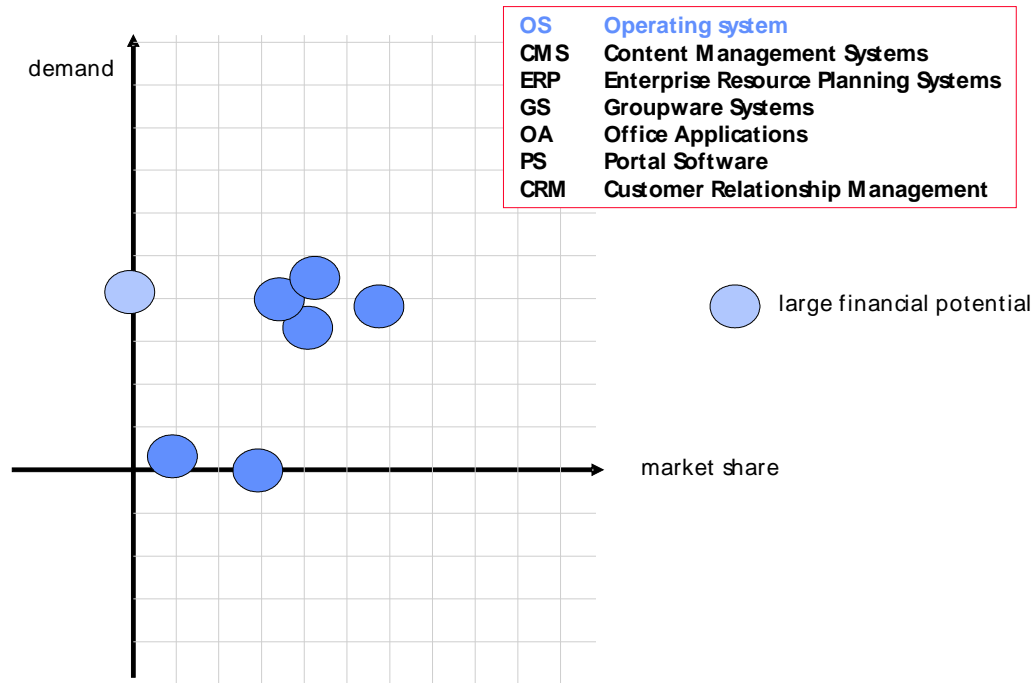


Figure 31: Operating system

Also, there already is a high diffusion of operating systems, in average the experts still expect an increase of the overall demand of operating systems. Two of the experts are of the opinion that the overall demand will stagnate. However, the market share of F/OSS operating systems will increase according to the experts. High business potential for F/OSS in that area is only expected by one expert.

Content Management System CMS

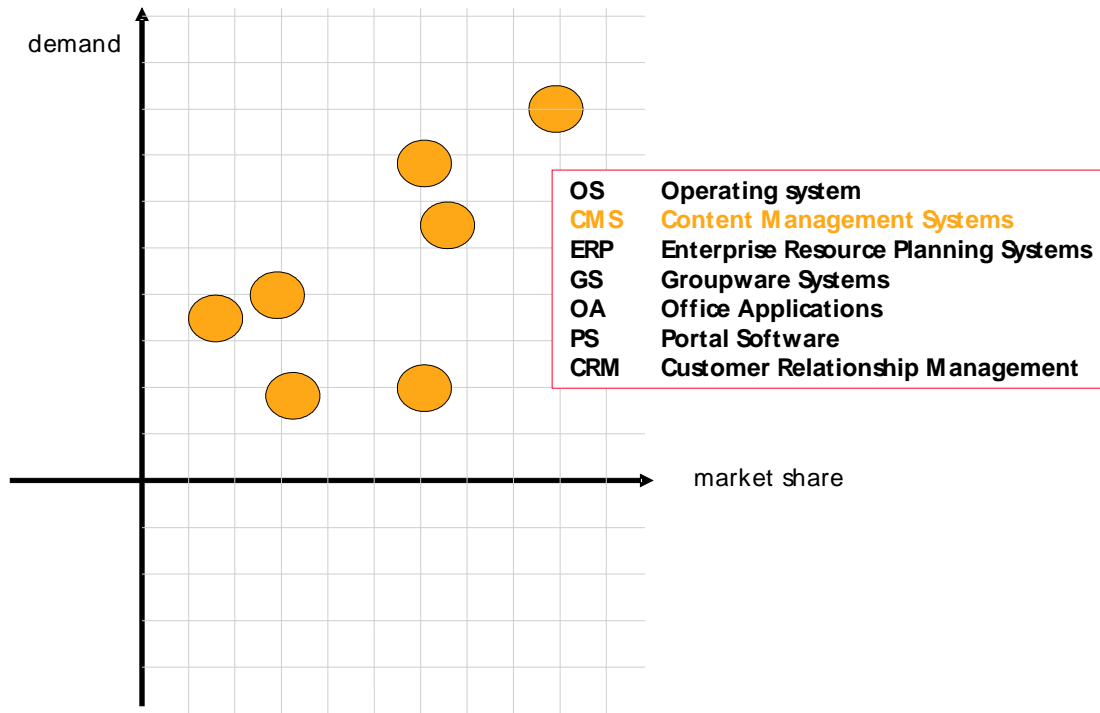


Figure 32: Content Management System

All experts placed their points for content managements systems in square 1. So they expect the demand for F/OSS content management systems to increase within the next three years. The interesting point is that none of the experts expect high F/OSS business potentials in that area. So it looks like the higher market share will be caused by persons, companies and/or organisations who are not willing to pay for content management issues.

Disunity among the experts can be constituted regarding the extent the overall demand, as well as the market share, will rise. Whereas some experts expect almost a boom in this area, others are predicting a more moderate grow.

Enterprise Resource Planning System ERP

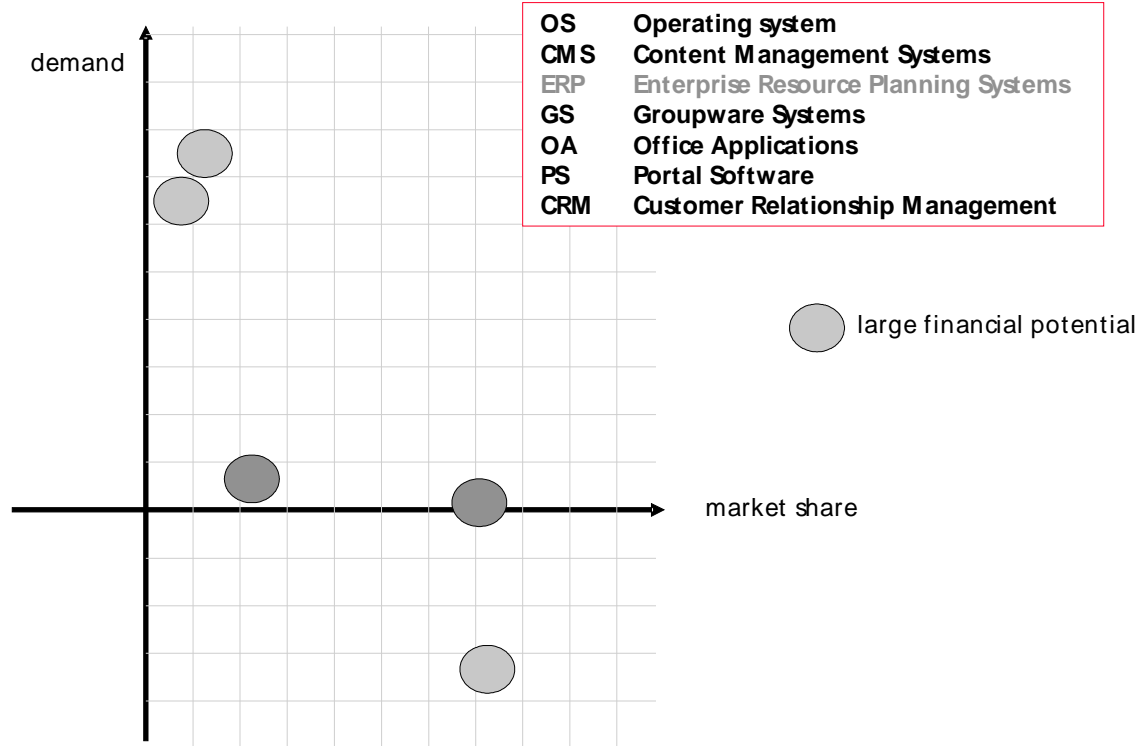


Figure 33: Content Management System

Within the area of Enterprise Resource Planning (ERP) Systems the participants bore rather different opinions. While two of them expect the ERP market to get quite saturated, one even expects the market will shrink within the next three years. On the other side two workshop participants ranked this market as a high growing market.

The majority of the respondents expressed that there is a high business potential for F/OSS in the ERP area. As ERP systems are normally having a high need of explanation and being the core system of many companies and/or organisations, reliability is a major issue for products. If F/OSS applications will assure both reliability and a guaranteed future then there is good business perspective in that area.

Groupware Systems GS

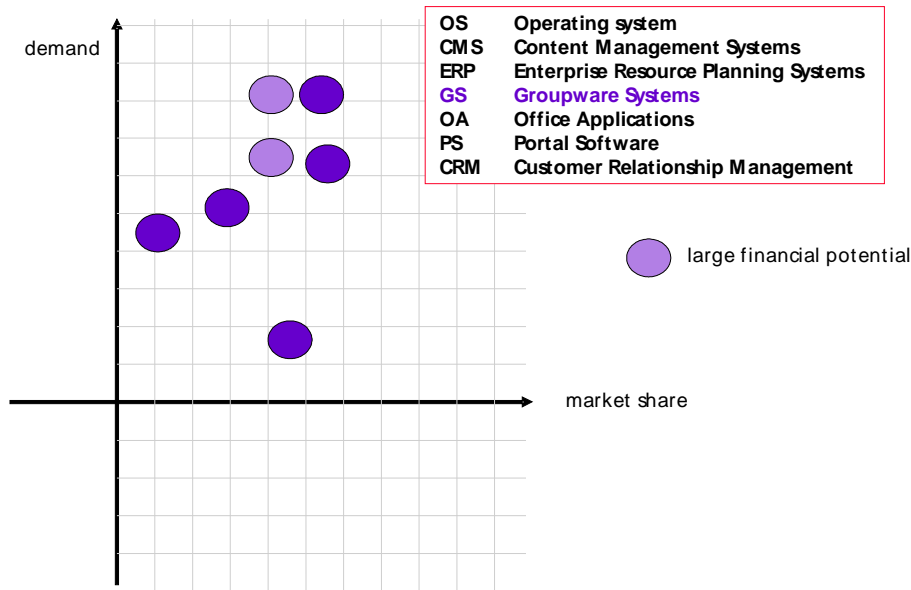


Figure 34: Groupware System

All groupware application points were put in square 1 by the workshop participants. In average, the groupware system area is ranked most positive compared to the other application areas. In the meanwhile, groupware functionality is also available for several years and the overall marked demand is expected to rise. In addition the market share of F/OSS applications will grow and two participants anticipate large business potentials in this area.

Office Applications OA

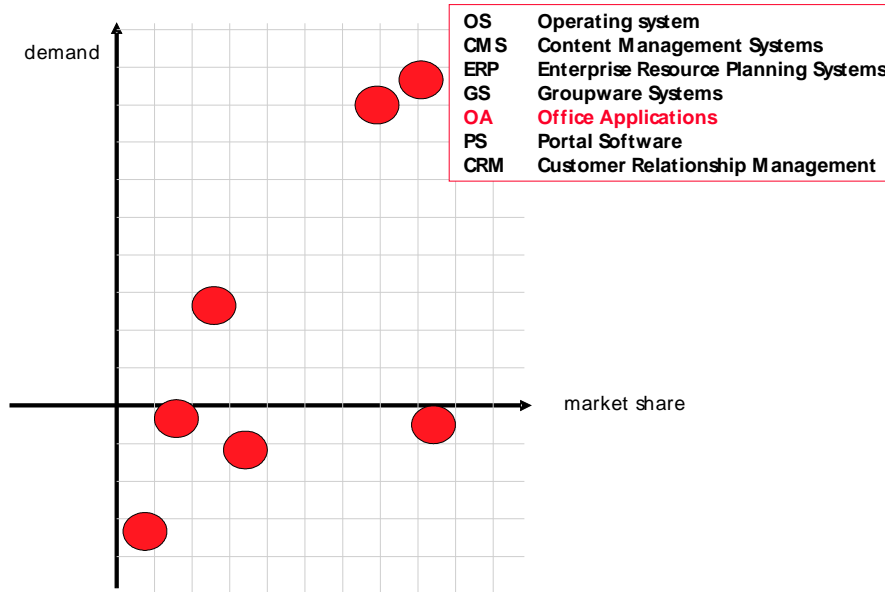


Figure 35: Office Applications

In particular with respect to the overall demand the workshop participants are of different opinions. Nowadays office applications are widespread in most countries and among different age levels. So the overall market demand is expected to shrink in the opinion of most of the workshop participants. Nevertheless two of them assume a rather high increase of the market demand within the next three years. We face a growing number of potentials in areas like mobile devices, and equipment of schools, companies and household.

The high maturity of already existing F/OSS offices applications is at least one reason for the agreed opinion that the market share will rise, but also a reason why nobody sees high business perspectives in that area.

Portal Software PS

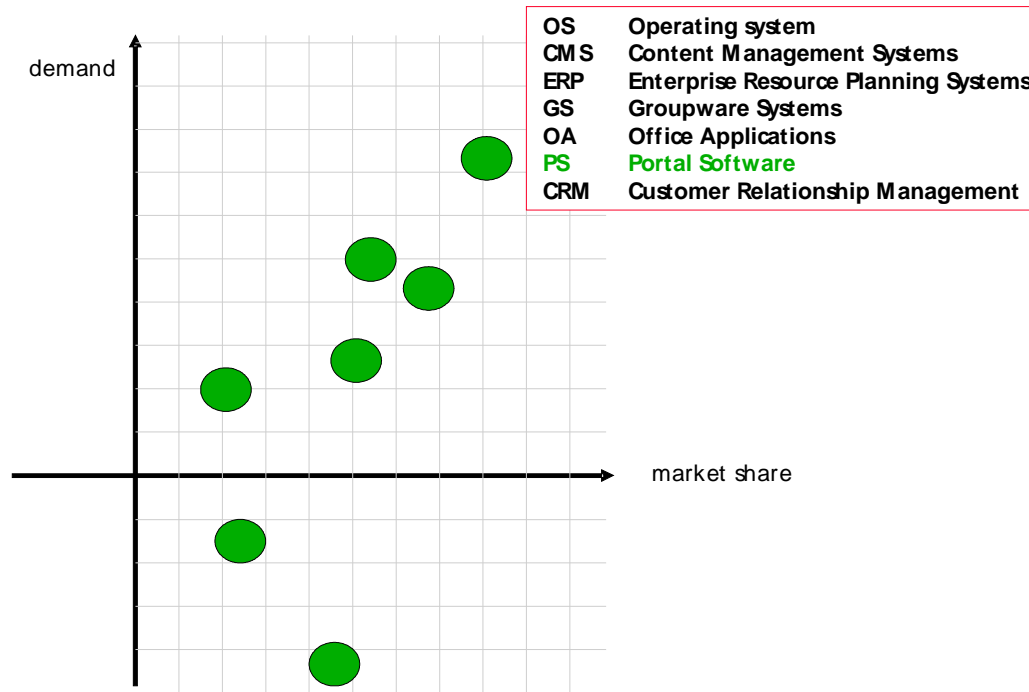


Figure 36: Portal Software PS

Similar to the office applications the future development of the market demand of portal software seems to be very difficult to predict. The range lasts from a quite high increase to a noticeable decrease within the next three years. In average a moderate increase of the overall market demand can be assumed. On the other side the market share of F/OSS portal software is agreed to increase compared to closed source software.

Customer Relationship Management Systems CRM

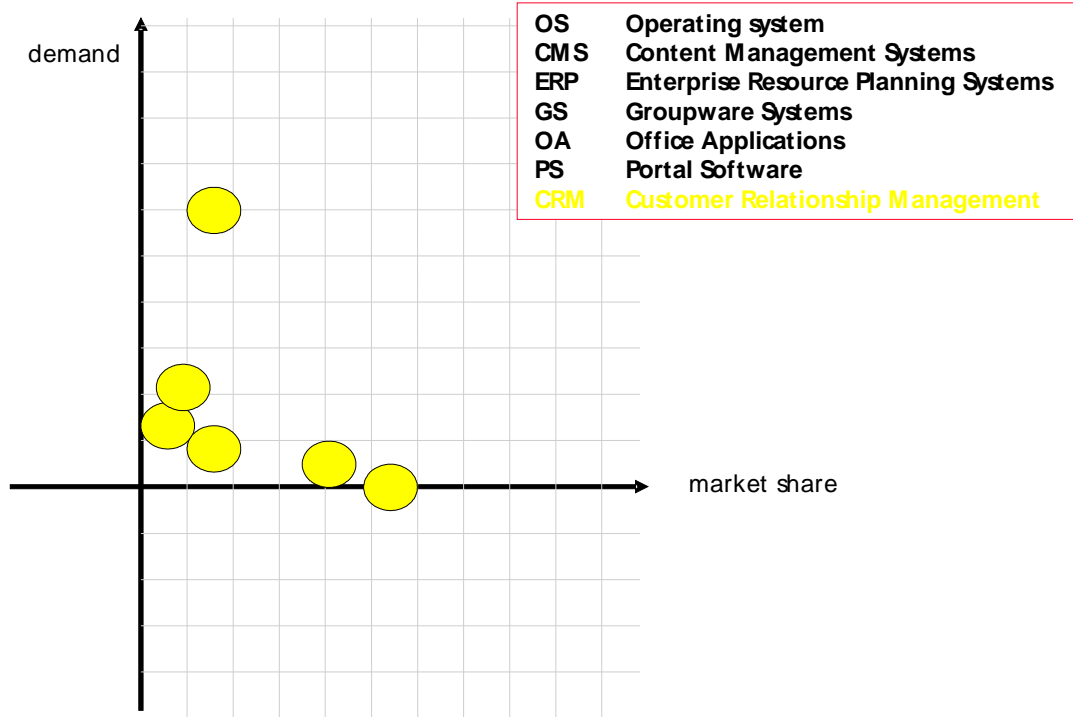


Figure 37: Customer Relationship Management

Finally the workshop participants were asked to express their opinion and share their knowledge regarding Customer Relationship Management (CRM) systems. Within the next three years the participants expect only a slight increase of the overall market demand for CRM systems. Quite similarly, the market share of F/OSS in that area, which, so far, is only marginal, will also increase slightly.