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Palette

Pedagogically sustained Adaptive LEarning Through the exploitation of Tacit and Explicit knowledge

Instrument: Integrated Project

Thematic Priority: Technology-enhanced learning

PALETTE final exploitation plan

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Summary

The deliverable reports on the exploitation plan for the PALETTE Services, it builds upon the first exploitation work described in D.DIS.08.

The first part of the report focusses on clarifying the preliminary work done towards the exploitation of the various PALETTE Services. A second part then presents the different activities realized to further the strategy around the PALETTE results. A third important section describes the work conducted for identifying, specifying and fostering the emergence of a community of users of the PALETTE services. The remainder of the report then describes the preliminary results of these investigations and discussions, and extends the scope to other PALETTE results than software services and user community.

The content of this deliverable is related to deliverable D.MAN.12 Open Source Strategy, that presents some juridical and legal recommendations in terms of licensing for the PALETTE services.

Table of Contents

Index of Tables

Illustration Index

1. Introduction

The present PALETTE final exploitation plan document summarises the activities relating to the definition of the exploitation plan of the PALETTE results. It puts an important focus on the PALETTE user-oriented software services and investigates the fostering of a lively community of interest amongst these.

The consortium of PALETTE has, since the beginning of the project, decided to follow an Open Source licensing strategy for its various software services. This choice opened the floor for many business opportunities that will be discussed in this document, and simultaneously requires a good understanding of the legal/juridical position of each service. These elements and more are detailed in deliverable [D.MAN.12] Open Source Strategy, that presents some juridical and legal recommendations in terms of licensing for the PALETTE services.

WP1 members contributed to this deliverable through their work on the possible creation of a community of interest of users of PALETTE services. This work included an analysis as well as guidelines for the creation of such a community. It is a part of the dissemination process of the PALETTE outcomes as a contribution to their sustainability after the end of the project. The practical outcome of this work took the form of a short report directly integrated in this deliverable.

History – During one year, the exploitation work was first conducted by EPFL, then the CRP-Henri Tudor, along with all partners involved in the WP7, to clarify the stakes of the exploitation activities and improve our shared understanding of the business stakes, including the community of users. Accordingly, two major deliverables have been produced:

- [D.DIS.07], that reports on the draft exploitation plan for the PALETTE Services. This deliverable focuses first on a compact description of the various PALETTE Services. It then presents our initial methodology for establishing the exploitation plan and describes the preliminary results of this investigation.
- the present D.DIS.12 presents the complementary work conducted for understanding the respective business wishes of all Services owners, Services providers, potential community of users, and gives additional relevant material to understand the proposed exploitation scenarios.

PALETTE results – The PALETTE results, detailed in [D.DIS.04] and [D.DIS.07] include a wide range of software-based, user-oriented services, grouped in 3 main categories:

- Collaboration Services: CoPe_it!, eLogbook, Portal PALETTE
- Knowledge Management Services: SweetWiki, BayFac, SemanticFAQ
- Information Services: Amaya, LimSee3, DocReuse

It is important to mention that other software components have been developed during the project but, as they are considered as Services for developers and not end users, they have been excluded from the main exploitation-, dissemination- and training-related efforts. Their respective owners can still easily apply the discussed reasoning and reuse the provided information to exploit these more technical services.

Alongside the software services, significant work was done in the field of supporting CoP by providing their mediators with relevant support, animation and methods.

Exploitation objectives and activities – As stated in the PALETTE IP3, the exploitation work aimed at defining the exploitation plan for the Palette services and tools taking into account the IPR issues addressed in WP0.

A sequential process has been planned and carried out to progressively improve the business and IPR awareness of all project partners, gather the relevant information and ensure the relevance of our work:

1. assess the information relating to the business strategies of all partners that had been collected in [D.DIS.07]
2. support the project partners in understanding & providing missing information
3. from the completed information, draft a series of possible scenarios for the exploitation and sustainability of the PALETTE outcomes.
4. discuss and improve these scenarios with all involved partners during a dedicated workshop, held in September 2008, during the PALETTE SAB meeting [Grégoire, 2008].
5. propose final versions of the selected exploitation and sustainability scenarios in the present deliverable.

PALETTE partners (glossary) - In the rest of this document, we use the vocables *Commercial Partners* to depict both MOS and NISAI, whenever their concerns match; *Academic Partners* to designate all partners pertaining to the academia, including UNIFR, EPFL, ERCIM, INRIA, CSET, UT, ULg and EM-LYON; *Users Partners* to encompass all CoPs and other organisation providing insights in the users of our services (including CSET, ULg, EM-LYON, UNIFR, ePrep and all CoPs) and *Innovation Partners* to designate CRP-HT and CTI, referring to their role of intermediary between the fundamental research and the market.

Document content – The different activities, work methods and results of our exploitation work process are detailed in the remainder of this document:

The section 2 briefly recalls the first inventory of business concerns detailed in [D.DIS.07]. Afterwards, section 3 details the steps 2 to 4 of our work process: chapter 3.1 explains how more guidance has been proposed to the project partners to share business strategic information, 3.2 gives an overview of the answers provided to this additional information step. The collected information is then used in section 3.3 to propose relevant business models, based on sustainable business models for open-source software and relating services. The business models are briefly discussed in the same section for any interested reader. We then summarize some relevant information provided by the IPR analysis (in section 3.4) conducted in WP0 simultaneously to the exploitation work, and described in [D.MAN.12].

Other stakes of the exploitation strategy are then discussed, namely the support of a users' community (in section 4), investigated in the WP1, including a report on the experience of th emergence of CoPs (in 4.1) and hints and stakes to raise and support a community of users of the PALETTE services (in 4.2).

We then give a set of recommendations nurturing the exploitation of the PALETTE outcomes (in section 5), relating to the software services, the organisational resources, the PALETTE website and general communication activities. A quick roadmap summarizes the main recommendations and actions in section 5.5.

A final conclusion draws some recommendations for the ongoing exploitation activities of all project members, both within the PALETTE consortium and outside of it.

2. First strategy inventory

The EPFL conducted in February 2008 a first survey to gather the strategic intents and orientations of the PALETTE services providers, CoPs and commercial partners. The aims, method and results of this survey have been described in [D.DIS.07], we quickly recall below some significant figures and information.

CoP users – With respects to the CoP, the questions aimed at listing the Services every CoP was using, both within the Palette portfolio and out of it, and intended to use in the near future. A quick overview of the results of this section is provided in Table 1, that details the amount of CoPs that were using the PALETTE tools & services in the beginning of 2008, along with their interest for using other ones. These figures do not display the amount of users in the respective CoPs.

CoPs \ tools	SweetWiki	Cope_it!	BayFac	Palette Portal	Amaya	DocReuse	e-Logbook	LimSee3	SemanticFAO
current users	9	4	2	0	3	1	1	1	1
potential additional future users	1	2	1	1	2	2	2	1	0
#	10	6	3	1	5	3	3	2	1

Table 1: CoP interests for the PALETTE services

Services developers – Relating to the services, a few multiple choices questions enquired, for each service, about the ways the service is and would be available, accessible to different type of users intended to use theses service and the expected pricing schemes. Overviews of the results of these questions are provided respectively in Table 2, Table 3 and Table 4 below, out of the 9 services for which answers where gathered, consisting of Amaya, BayFac, Cope-it, Corese, DocReuse, LimSee3, the Palette Portal, Sewese and SweetWiki.

More open questions then covered the expression of a sustainable business plan in terms of general strategy, target customer and business model and a quick risk analysis for which no relevant answer elements had been provided at that time, clearly stating a need for support in the definition of a strategy for each service.

user \ service_accessibility	to PALETTE members	to CoP members	to external users	to guests
for free:	9	8	8	7
for a subscription:	0	0	0	0

Table 2: Services accessibility schemes

services availability
as download: 8
as service: 6

Table 3: Services availability

expecting other incomes
yes: 2
no: 2

Table 4: Services income expectations

Commercial Partners – Pertaining to the commercial partners, the questions of this first survey aimed at identifying the services of the Palette project the partners would plan to integrate in its product/services portfolio, along with the relating decisions factors and a description of the related business plan, again in terms of general strategy, business model (incl. customers) and a quick risk analysis.

Mind On Site, on the one hand, stated its interest in any additional service to integrate in its learning content management system.

Nisai, on the other hand, would integrate in its products or service portfolio any KMS, Authoring tools. These tools need to be web based with no download applications.

3. Strategy development

From the first survey, mentioned in section 2, it was clear no business vision nor exploitation strategy could be easily expressed by most of the PALETTE services providers. Commercial partners, a contra, where quite straightforward in describing the kind of opportunities they were expecting from the PALETTE project.

The WP7 members therefore tried to understand, develop and share their respective strategies. This work has been an interesting experience bringing together various (and often contradictory) stakes, that started with the clarification for every partner of its own stakes. The method and results of this activity is detailed in the remainder of this section.

3.1. provide support in describing a service strategy

a) strategy components that were of interest

The strategic questions investigated around the PALETTE services were the same as in the first strategic survey (see section 2), namely the size of potential user base for a particular service and workable pricing scheme.

This information was nevertheless updated with more recent information due to the latest evolution in the services development and refined (through an open set of answer proposals) to some extent to clarify both the expectations of potential users, the wishes of potential service exploiters, and the plans of service developers.

b) preferably closed questions

For the sake of collecting comparable questions and supporting the respondent public in expressing strategic concepts which (s)he might not have been immensely familiar with, we preferred to ask closed questions (eventually with multiple choices or preferences scales) rather than allowing for open answers. Nevertheless most questions where finally left open with a possible "other" answer, that has actually never been used by the respondents, thereby validating somehow the qualification of our possible answers.

This choice of guided answers was reinforced by the foreseen opportunity to meet with all respondents in the collaborative workshop, thereby providing a place for more free discussions.

c) resulting questionnaire

A first question enabled a declaration of interest (or not) about each service:

Are you interested in any use of this tool?

1. I'm interested in *providing* the tool or related service.
2. I'm interested in *using* the tool.
3. I'm interested in *modifying* the tool (incl. bug fixing)

The questions geared towards the provisioning of services then included:

What kind of service would you be provisioning for this particular tool?

1. software hosting; to enable the download of the software package from my servers.
2. developer support; to support their installing, configuring and administrating the software.
3. online working; to enable using the platform directly from your server (may not apply to this tool)
4. final user support; to support CoP and users in their daily use of the software.
5. Other:

What kind of income do you expect for providing the above services, freely or not?

1. for free; - please give your incentives on the right (audience, brand, code contributed by community...)
2. small price; to cover expenses - please tell us more!
3. market price; to make financial profit - please tell us more!

NB: as can be seen above, open comments could still be provided to closed answers, but this opportunity didn't met great interest.

The potential service users where then asked (in case of a positive answer to the first question):

What kind of service would you like to get with this software?

1. downloadable package; get the software package ready to install
2. admin support; get support in installing, configuring and administrating the tool
3. online working; be able to use the platform directly (no install; may not apply to this tool)
4. user support; get support in using the tool daily (training, helpdesk...)
5. Other:

What kind of price would you be ready to give against the above services, whether money or not?

1. no money; - please give your counter-part on the right (none, feed-back, audience, brand, code contribution,...)
2. small price; to cover expenses - please tell us more!
3. market price; a normal commercial price for that kind of service - please tell us more!

And finally the plans of further service development where inquired, to get a first feeling of the existing community of developers:

What kind of modifications would you like to bring to the tool?

1. to provide continued bug fixing development.
2. enhance; to develop additional features for the intended users.
3. integrate; to integrate the tool in a(nother) suite.
4. customize; to bring (important) changes for your clients/users, cosmetic or functional.
5. Other:

To what extent would your modifications be usable by and provided to the initial author of the software and the rest of the community of users?

1. direct reuse; Your modifications would fit straightforwardly in the main tool and be available.
2. paid reuse; You wish to get compensations to share your modifications, financially or with any other relevant counter-part (please explain).
3. no reuse; Your modifications don't fit well with the initial tool intent, you see it more like another tool or a fork, unless the original tools drops dead and yours doesn't. (please explain)
4. private only; Your modifications will never be distributed. (please explain)
5. Other:

d) ergonomic tool

In order to help the respondent focus on the relevant information, contextually useless questions where hidden from the questionnaire using simple branching logic, such as: show question 2 only if answer to question 1 is “yes”, as illustrated in Illustration 1.

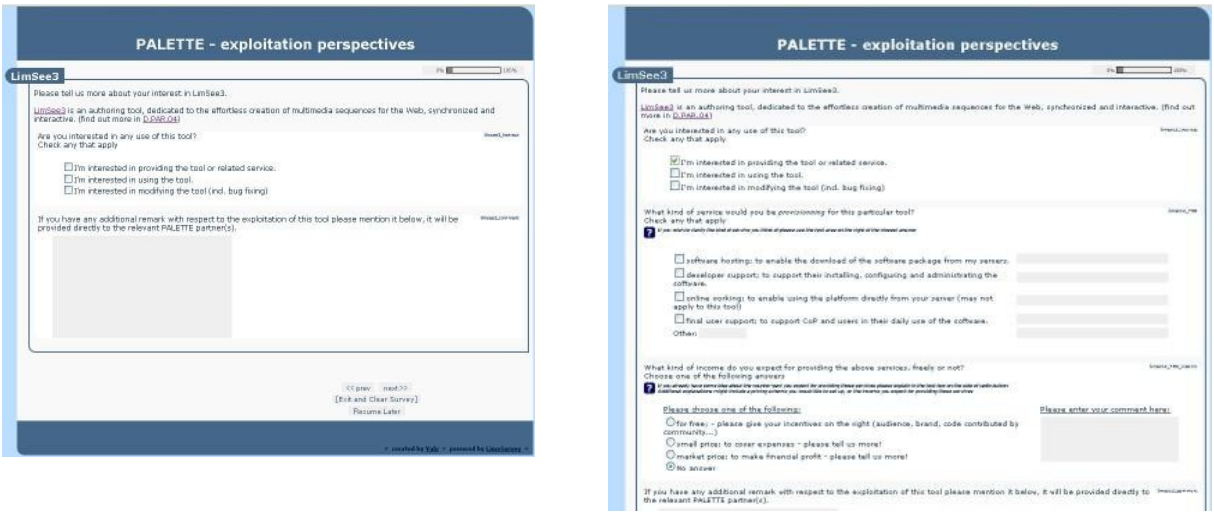

Illustration 1: Branching- logic based question display: before/after

Besides, the whole survey was made available in English and French, being the two main languages spoken in the consortium.

3.2. survey quick results for services

The complementary survey described above has been opened end of October 2008, and finalized in the beginning of December when 22 individual answers had been submitted, covering 71% of the project partners that answered (10 out of 14) and 55% of the CoP (6 out of 11).

A detailed per-service overview of this complementary exploitation survey results is available in appendix 1: exploitation survey results, on page 41, that takes the form illustrated in Illustration 2, as an example using the LimSee3 tool.

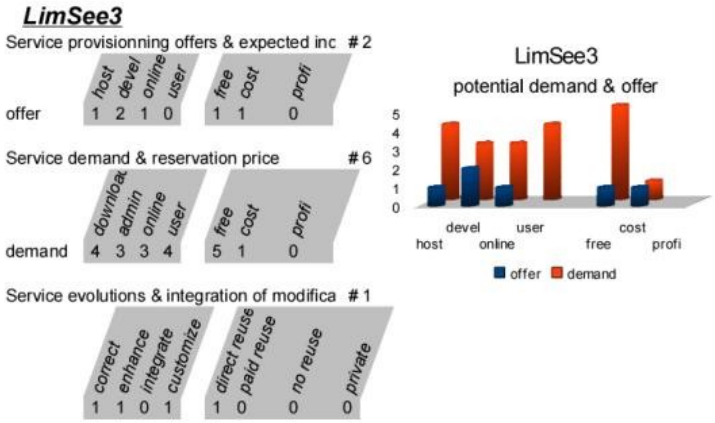

Illustration 2: Potential demand & offer view - LimSee3 sample

3.3. Typical exploitation strategies

The CRP-HT then proposed a few classical exploitation schemes to the partners developing the services during a collaborative workshop [Grégoire, 2008] (sometimes different names, though), held in September 2008, during the PALETTE SAB meeting. They are discussed in the present section.

Improvements and comments where brought to these generic scenarios, leading to their overall adoption or rejection by some project partners. A summary of the selected business models, their main requirements and interest to the respective stakeholders will be given in the section 5.1.

The very practical information regarding the exploitation of the PALETTE services are highlighted in the document by using a different style, for they were often important discussion topics amongst project partners:

The example of highlighting a practical conclusion relating to the exploitation of PALETTE services.

PALETTE partners context – A first strategic element that was discussed during our collaborative work is the need to take into account the (legal) status of each stakeholder. For instance, all academic partners (see definitions in section 1) are forbidden to provide a service in exchange for money and need to set up new collaborations (e.g. funded research) for any (more important) contribution. To that extent, the status of the innovation partners is somewhat more permissive and commercial partners are free to define any commercial agreement, preferably in line with their strategy.

A business challenge behind the exploitation of the PALETTE services is to find adequate models that fits the particular status of each project partner.

a) Typical business models (& related revenues)

Many ways of developing a sustainable business around software and open source software more specifically have been proposed for years, and classified for instance in [Rajala et al., 2001] or [FaberNovel, 2007]. We describe below the most important business models and describe how they can (or cannot) be used to exploit the PALETTE services.

A few business models exploiting open source software have proven their sustainability and profitability over time. These include pure service models, distributing the software with a high added value, dual licensing and shared development.

Services models – The recent highlight on the provisioning of services rather than selling a software product is nothing but the last evolution of the software industry [Cusumano, 2008], as observed by many major software vendors seeing their revenue in services and maintenance exceed that of the product itself.

A vast amount of web-based enterprise software vendors resolutely shifted their pricing model from a (more traditional) up-front license fee to a monthly fee, typical of the so-called *software as a service* (SaaS) model. Some companies also deliver what used to be commodities software (email, basic desktop functionality) in a *free, but not free* model where the advertisers pay a software service provider for its users to watch the advertisements while using the service. For the sake of readability we will include in this *services models* vocable any other indirect pricing scheme where the free distribution of the software aims at extending the community of users, while related services provide revenue.

Services typically proposed include training, technical assistance tests, monitoring and other quality insurance. A services-based business generally evolves either in breadth (increasing the variety of its services and target markets) or depth (specializing in some highly profitable services), depending on its context and strategy.

Most services models however render difficult if not impossible the opportunity of maintenance-related (direct) revenue streams, that accounts nowadays for up to 60 percent of services revenues in the area of software exploitation, and would potentially be interesting to PALETTE partners, whether covering corrective maintenance (debugging) or evolution maintenance (adding features).

Exploiting *training opportunities* is an example of relevant service model to the PALETTE commercial, innovation and users partners, while *software quality insurance related research* could potentially be set up between most academic partners and interested third-parties, a.o.

Paid *maintenance* is generally an important business, revenue-wise, but is hindered by the public status of the academic service providing partners, and current lack of expertise of other stakeholders.

Distribution with a high added-value – Another successful business model based on open source software is the bundling of (pre-existing open source) components in a standardised distribution, whether available on-line, as OEM, or physically provide with some hardware.

The added value to the customer of these distributions typically encompasses an economy of time and less risks in using the distributed software with its added quality insurance, technical support and frequent updates. Numerous documents can be found that describe, for instance, the business model of Red Hat that belongs to this type of business models, packaging, supporting, certifying and distributing Linux-based exploitation systems.

Since no PALETTE partner showed a strong interest in the business model of *distribution with a high added-value*, it won't be discussed in more details in this document.

Dual/multi licensing – The dual licensing model inherently differentiates (commercial) customers and (community) IT-skilled users (or developers). This licensing policy makes the software available under two distinct licenses: on the one hand an open source copy left license that serves the general public with a standard version of the product and enables the company to create a community of developers and enjoy network effects in sharing its software. On the other hand a proprietary commercial license provides the customers with an enhanced version, stripped of the constraints of a copy left.

The interested reader will refer to [Ghosh, 2003] for more information on the legal aspects of the dual (&multi) licensing options, that details the license combination introduced above (copyleft + proprietary), even though other combinations exist relying on more liberal licenses. From a business perspective, the dual licensing model is particularly well suited to a company developing reusable/integratable components, but requires important means to sustain the developers community and develop the market if that company wishes to provide finished products.

Dual licensing shortcomings are obvious from its rationales: contributions from the community require their authors to hand over their copyrights to the software owner to be integrated in the main application. This forced assigning of copyright over to a company is often presented as a problematic factor to attract developers.

The dual licensing business model is only an option in those cases where a single company owns (i.e. has developed) the whole software, or can at least ensure a compatibility of this practice with the licenses of the components it reuses. A thorough analysis of the IPR status of every PALETTE service has therefore be proposed, and is quickly discussed in section 3.4.

From this analysis we *cannot guarantee* that any of the software of the PALETTE project may legally be licensed simultaneously under a copy left open source license and a proprietary commercial one at the time of writing this report. The dual licensing nevertheless remains an option for many partners developing a PALETTE services, provided they clarify their IP rights on the software and ensure the compatibility of the used sub-components licences with this policy.

No other stakeholder other than the software owner is eligible to enter this business model.

A variant of this business models only commercialises additional modules to an open source core application.

Shared development – A final sustainable business model exploiting open source software extends a basic and simple version of a core product by developing on-demand particular modules, in exchange for a payment. The different modules developed for different customers are then integrated in the (shared) core product. This business model is complementary with that of business software integrator, a.o.

Relying on the pooling of similar needs and development costs, this business model is specifically relevant when numerous additional modules can be designed and provided solutions quickly become obsoletes. Its main advantages for the user/customer with respect to the other business models is the possibility to benefit of tailored developments (i.e. a proprietary module) at a very low price.

Similarly to the services models, shared developments cannot easily be contracted by any PALETTE academic partners, for statutory reasons. This business model remains an option for commercial and innovation partners, though.

The pooling of needs and costs seems particularly interesting for services provided to small CoP, with few financial means, that could gather in more important community of users to get sufficient funding to pay for some interesting development.

Forge hosting – An additional business model was discussed ensuring nothing but the sole availability of the software at the end of project, actually required by CE. Such a model enables simultaneously to support development activity provided means are allocated to continuing development and answering questions. It does not support end-users by itself, and has no inherent revenue stream, and requires a clarified OpenSource policy and licenses, as discussed in section 3.4.

All partners agreed to provide forge-like hosting for each PALETTE service, eventually hosted on different forges (due to technical requirements such as different underlying technologies), but accessible from a single place: the developers homepage.

b) Revenues streams summary

The classical revenues induces by the above business models have been described in each of the above section, Table 5 simply recalls that information in a succinct form, where a (**v**) denotes that the relating revenue type is at the heart of the business model, a (**?**) characterises a revenue type that might eventually be exploited, while a (**x**) marks a revenue stream that is fundamentally incompatible with the business model and should probably not be considered at all.

It is typically the user (either the CoP as a whole or the individual users on their own) that pay for the product and services & maintainance, depending on the adopted pricing scheme, while indirect revenues are provided by a third party (generally the advertisers).

revenue streams summary	product sale	related service & maintance	indirect revenues
Services models	x	v	v
Dual licensing	v	v	v
Shared development	x	?	v
Forge hosting	x	x	?

Table 5: Summary of the typical possible revenue streams

c) Typical business success factors

A few key factors are generally mentioned to argue the success of a business based on open source software.:

- a lively *community of users*, that includes early adopters who will further the adoption of the product and lead users who will drive the evolution of the software in a relevant direction
- a good *knowledge of the market*, ideally pre-existing as to clarify the customers needs
- the provisioning of a stable *commercial service,* in order to satisfy the customer and build its trust.

d) Software maturity & development of the PALETTE Services from a business perspective

Before thinking of exploiting the PALETTE software as business services, we need to state how ready they are to be proposed to their respective market.

The Open Business Readiness Rating [OpenBRR, 2005] is one initiative amongst others (see [SQO-OSS, 2008] for others) that proposes a framework for assessing Free/Libre and Open Source Software (Floss) with particular emphasis on attributes interesting to the business.

Therefore, OpenBRR uses a variety of high-level criteria for evaluation, such as functionality, operational software characteristics, support and service and adoption and development process. It then proposes an assessment process involving the definition of a reference application enabling the selection of a set of characteristics (and respective weights) that are desirable in the evaluated applications. The evaluation result is computed by asking different evaluators to score each characteristic and averaging their grades.

While we didn't apply the whole process assessment of OpenBRR to the PALETTE services, for its definition of a reference application was not practically feasible in our context, we nevertheless used its set of characteristics (namely *assessment categories*) of an open source software to get inspiration in the possible strengths of such a software component from a business perspective. The Table 6 recalls the assessment categories description of [OpenBRR, 2005].

Assessment Category	Description
Functionality	How well will the software meet the average user's requirements?
Usability	How good is the UI? How easy to use is the software for end-users? How easy is the software to install, configure, deploy, and maintain?
Quality	Of what quality are the design, the code, and the tests? How complete and error-free are they?
Security	How well does the software handle security issues? How secure is it?
Performance	How well does the software perform?
Scalability	How well does the software scale to a large environment?
Architecture	How well is the software architected? How modular, portable, flexible, extensible, open, and easy to integrate is it?
Support	How well is the software component supported?
Documentation	Of what quality is any documentation for the software?
Adoption	How well is the component adopted by community, market, and industry?
Community	How active and lively is the community for the software?
Professionalism	What is the level of the professionalism of the development process and of the project organization as a whole?

Table 6: OpenBRR software maturity assessment categories

OpenBRR recommends to focus on 7 of these 12 categories at most in any assessment. We arbitrarily selected, out of these 12 categories, the ones that relate the most to the user experience and community support. To abandon the categories closer to the development stakes such as integration ease or design quality was justified by the fact the developer-oriented PALETTE services have been less targeted by the early dissemination and exploitation work. This puts forward the main business priorities as

- Functionality
- Usability
- Performance
- Support
- Documentation
- Adoption
- Community

They were proposed at the PALETTE partners for further development during the remainder of the project at the last plenary meeting [Grégoire, 2008].

Some of these business stakes, such as improving documentation and adoption, have been tackled both individually by the services developers and in collective PALETTE tasks such as Task 1.8 (see section 4 below), that discusses the feasibility study for a PALETTE services users' community or both the Online Training modules of Task 8.3 and [D.PAR.04] that recently provided an harmonised and coherent description and user-focused documentation of the PALETTE tools and services.

Further improvements can always be brought to any of these stakes, accordingly to every partner's priorities, means and opportunities.

3.4. juridical security

The legal validity and juridical security of business assets often comes second to the mind of the software developer, but is crucial as an enabler or blocking factors when it turns to going to market.

Actually, small businesses rarely get troubled for IP infringement, but when the business evolves and becomes more profitable more attention is to be paid to those aspects, as the competitors probably will. We recommend fixing these issues upfront, as delaying them rarely eases their correction.

Regarding open source licenses schemes, that have been chosen by the PALETTE consortium at the very beginning of the project, some less known issues arise when integrating components distributed under different (but not always compatible) licences, or when a business relies on restricted features of the licences (such as the dual licensing business model introduced in section 3.3).

The report [D.MAN.12], and the related IP awarenesses work amongst the PALETTE partners have highlighted a few issues, stakes and best practices to be taken into account as soon as possible to lower the legal risk of developing and exploiting PALETTE services.

4. Users' community

The task 8 of WP1 gathered useful information, shared and built in PALETTE, about the emergence of a new CoP and the conditions of this emergence.

This information is used for proposing a general framework for the creation and development of a community of PALETTE services users. In particular, the design of the framework is based on the analysis of the process of emergence and development of the ePrep CoP, a CoP created in collaboration with PALETTE, and on the data collected with other emerging CoPs.

A thorough reflection has been conducted in WP1 about the possible creation of PALETTE services users' community. It investigates the idea of transferability of the PALETTE Services, Generic Scenarios and uses of Services. It also investigates the question of the sustainability of the PALETTE outcomes.

The present section presents the results of this analysis, as well as guidelines for the creation of such a community. It is a part of the dissemination process of the PALETTE outcomes as a contribution to their sustainability after the end of the project. After describing the emergence and development of two CoPs, some specifications are proposed for a community of PALETTE users to emerge after the end of the project.

4.1. Emergence of CoPs

In this section, we present two CoPs from the point of view of their emergence and development. These CoPs emerged in two different domains: teaching in Higher Education (ePrep CoP) and elearning in large companies (InCorPorate). We also present a reflection led at the PALETTE Summer School organised in Ohrid in June 2008 about the creation of a PhD students' community in the domain of Technology-Enhanced Learning (TEL). On the basis of the description of the three CoPs and collective reflection, we identify some common conditions for CoPs to emerge.

According to [Wenger, 1998], CoPs emerge in any situation of life because people need to negotiate their ways to consider and experience life. In professional contexts, such discussions have to be structured and framed by specific processes. Even if many CoPs emerge "naturally", it is however possible to create and cultivate them [Wenger et al., 2002]. These authors for example suggest to plan and launch new CoPs through different actions such as determining the primary intent of the community, defining its domain, identifying engaging issues, identifying potential coordinators leaders, contacting potential members, connecting community members, etc. In the short monographs we provide below, we highlight the conditions in which CoPs emerge or intent to emerge.

a) ePrep CoP

We present here the genesis and development of the CoP ePrep CoP. Through the five stages of a CoP life [Wenger et al., 2002], we aim at showing how the ePrep association developed the concept of CoP and in which conditions this community emerged throughout years. In

order to present its emergence, we interviewed the coordinator Nathalie Van de Wiele, and circulated a questionnaire to 6 members of the ePrep CoP.

ePrep – ePrep is a French association. Its purpose is "to define and lead non-profitmaking actions to contribute to the development and influence of the 'classes préparatoires aux grandes écoles' (CPGE), through the use of Information and Communication Technologies (ICT), in France and at an international level" (excerpt from the declaration in the French Official Journal). Created as an association in 2001, ePrep became a real community of interest in 2006. Currently, its more active members form a developing Community of Practice. In addition, from May 2006, ePrep could count on the help of two committees: the Steering Committee and the Development Committee. These committees have been formed in order to reinforce the orientation and development of the ePrep actions and its community in line with what has been initiated in 2001.

Stage 1: Potential – The development of a community generally begins on the basis of an existing social network that shares a common interest [Wenger et al., 2002]. The ePrep case is specific as the association has not initially been formed as a CoP. Its genesis originates from a personal website developed by Nathalie Van de Wiele in 2000. When the content of her courses has been published online, teachers, students, as well as professors of 'classes préparatoires' in France and abroad expressed their interest in the site and pedagogical issues that it tackled. A virtual network was born based on the same geographical disparities than today.

The enthusiasm and search for valorisation of the professional identity of the professors of 'classes préparatoires' related to the ICT domain lead Nathalie Van de Wiele to organise a first international conference in May 2002. The purpose of this conference was to share the experiences and ideas of the professors. ICT become more and more important in all professional activity and ePrep implicitly tries to develop this new reality and culture of sharing among the professors through the organisation of activities, projects, conferences, workshops, etc.

The ePrep community of interest is currently composed of more than 1000 members, 150-200 of whom frequently participate in the activities and 30-40 are active members of the ePrep CoP. Regarding the diversity of the CoP members, Nathalie Van de Wiele suggests that they are divided into three categories: the professors of CPGE, the teachers-researchers in Grandes Ecoles or Universities, and representatives of institutional partners of ePrep (for example CNED[1], INRIA[2], French Ministry of National Education, etc.). This association of individuals coming from a personal social network of the coordinator, and representatives of the institutions allows ePrep having got a specific configuration. It is through Nathalie Van de Wiele and the support of partners (European Commission, French Ministry of Education, Conference of Grandes Ecoles, Le Monde de l'Education, learned societies, etc.) that those persons coming from different contexts and who did not necessarily know each other before met, wanted to collaborate, and currently form a community.

Stage 2: Coalescing – The willingness to collaborate is also related to the sense of belonging mentioned by the participants. Indeed the interviewed members told us how they feel

[1] Centre National d'Enseignement à Distance (France)

[2] Institut National de Recherche en Informatique et en Automatique (France)

involved in this community because they are directly concerned and easily find their place. In general, they committed in the community for very concrete and personal reasons and interests. They mainly felt concerned by the opportunity to share their professional experiences in order to benefit from new tools to be implemented in their daily practice, and lead projects for the CoP. Of course these projects subsequently allow each participating professor to learn and develop his/her professional practices.

Nathalie Van de Wiele, as the coordinator, leads the community by supporting it from the operational and organisational (conferences, workshops, etc.) points of view, fostering communication and collaboration (e.g. through teams-projects), and ensuring the coordination of new members (she plays a facilitation role through the organisation of meetings focused on learning and professional development).

The birth of the CoP can be understood as a maturation step throughout which ePrep appropriates tools in order to develop projects: Wikiprepas, Francophone platform, pedagogical innovation project, international cooperation between schools. At the end of the 2006 ePrep International Workshop, Christine Vanoirbeek suggested to Nathalie Van de Wiele to create a CoP within ePrep. This workshop has been revealing; three important decisions have been made: the organisation of annual ePrep thematic seminars, the creation of the ePrep Steering Committee and Development Committee, and the creation of a CoP in order to form a core group of members to develop new projects. From the requests of participants in the workshop to share precise projects and following the proposal of the coordinators of PALETTE and ePrep, the CoP has been formed during the first thematic seminar at the end of 2006.

Stage 3: Maturing – At the beginning, ePrep intended to focus on the tools developed by PALETTE. This has been done tool by tool associating projects with specific tools. But at the moment, the CoP begins to use interoperable tools: for example a platform with Amaya, Amaya with Limsee3, etc.. All the activities have been easily implemented on the basis of the participation and interests of the members.

In order to face the possible difficulties that the members could meet with ICT, Nathalie Van de Wiele defines ePrep as based on two ”legs”: one leg is related to research developing innovative practices (the CoP composed of specialists) and one leg related to the dissemination of the practices (the ePrep workshops).

Stage 4: Stewardship – After the stage of maturing, the community can go through cycles of high or low activity level. The thematic seminars are an important way for allowing the members to know each other, share issues, present various projects, and mainly experience what being a member of a community is. For example, at the second ePrep thematic seminar (INSA Lyon on the 5th and 6th of November 2007), the participants had the opportunity to meet in order to take stock of the progress of the projects lead during the last year with PALETTE.

Despite the opportunities to share, the feeling of mutual recognition is weak because of the little number of active participants and relatively rare face-to-face meetings. Even if the participants do not meet outside the ePrep meetings, the projects develop anyway in a harmonious climate. The good relations are thus essential because their discussions lead the emergence of the projects and choices of tools.

Through the ePrep activities, the participants (a.o. the professors of CPGE) can explore new practices and cooperative tools as well as integrating them into their practice. The participants do not only acquire knowledge but they also participate in the CoP projects, lead activities, and experiment new practices.

Following [Wenger et al., 2002], learning leads practice and practice is the memory of learning. In this connection, Nathalie Van de Wiele thinks that inside the CoP, the activities allow changing participants practice by fostering reflections about possible pedagogical practices integrating innovative tools and experiencing activities and projects in which these new tools are implemented.

Stage 5: Transformation – A first transformation related to the members' training, the autonomy of the teams-projects and the development of a consortium "Digital space of classes préparatoires" is currently in process from several months in order to develop the ePrep CoP.

Conclusion and perspectives – Through the five stages of development of a CoP, we could situate the ePrep CoP between the stages "Maturing" and "Stewardship" while having strong basis for the next stage "Transformation". It looks sufficiently strong and structured to continue but have not yet the energy and potential visibility that it could develop. Following the coordinator: "In the future, if we can keep the same dynamics with a bit more professors of CPGE involved in the CoP, it would be excellent. At the moment the CoP is composed of only 18 professors of CPGE out of 38 members. The other members are there for sharing their expertise and learning from them".

b) InCorPorate

The presentation of InCorPorate is partly based on a paper presented at CSCW08 conference [El Helou et al., 2008].

> On May 15, 2008, a group of e-Learning experts from large enterprises and academic research institutes organized a meeting in Rolle, Switzerland, in order to discuss their experiences with the use of e-Learning in training employees. The meeting involved participants from Nestlé, Sanofi Aventis, France Télécom, MindOnSite, the University of Fribourg as well as the Swiss Federal Institute of Technology (EPFL). The meeting was a first step in enabling e-Learning experts to establish communication across their enterprise boundaries, and discuss good e-Learning practices and suitable platforms for coaching employees. Participants agreed that forming a CoP (community of practice) would constitute the best way for experts belonging to different corporations, but facing the same challenges, to collaborate with each other, reify their knowledge and improve their practices. This is how the InCorPorate CoP was created.
>
> As a very young CoP, InCorPorate and its members have specific needs:
>
> - to identify objectives and short activities in order to define its 'raison d'être';
> - to create a feeling of belonging and make the members aware of the presence of other participants interested in common issues;

- to set up interactions between the members in order to introduce themselves and their personal objectives and competences;
- to share interesting documents and members' practices regarding the CoP domain of interest [El Helou et al., 2008].

Two meetings have been organised with InCorPorate and PALETTE members: the first one in May 2008 and the second one in October 2008. The first one was organised with trainers from different companies and was dedicated to sharing practices about various key issues in elearning. The second meeting was organised only with PALETTE members and the coordinator and was dedicated to the elaboration of a strategy for developing the CoP. Then a third meeting by videoconference has been organised in November 2008 aiming at planning a programme of activities.

In order to address the specific needs identified here above, several reflections and actions have been discussed with the coordinator:

- First of all, the domain has been precisely defined: InCorPorate is about the use of elearning in vocational and continuing education in companies for prerequisite testing, complementary training before training course, etc. It is about sharing 'good' practices in this domain. The target audience has also been precised: trainers in companies.
- The question of the tools has been discussed but at the very beginning of the CoP, the question of how to reach potential new members and recruit them. This has been discussed as the most important question. A strategy in two steps has been set up:
  1. To create the CoP and its main assets: a coordinator, a group of core-members (the participants in the first meeting), a platform, a set of interesting documents about the domain, a programme of activities (workshops based on sharing practices about different key issues), a clear definition of the domain, and traces of the first meeting.
  2. To contact key persons in the top management of the companies in order to 'sell' the CoP and be supported for advertising into the companies. New members could then be interested and the CoP could grow.
- The question of the platform and the tools has been discussed afterwards. It appeared in the discussion that a platform gives an identity to the CoP, a common bond to the members, a location where people meet. As customers of MindOnSite (MoS), they agreed to use the MoS platform.
- At the third virtual meeting, several actions have been decided:
  - To set up a space for InCorPorate in the MoS platform with different tools: blog, glossary, etc.
  - To organise concrete short activities with a little group of members. These activities will be based on the Learning and Organisational Resources (see D.PAR.06) developed by PALETTE.

In conclusion, the CoP is just emerging. It is interested in a simple question: "Shall we begin? And how?". For answering this question, it will begin with little activities with members who well know and trust each other and. They do not take too much risk at the beginning in order to present a little but strong CoP to the top managers of their companies who will then support the CoP and foster the engagement of new members.

c) Towards a CoP of PhD students in TEL?

At the PROLEARN Summer School organised in Ohrid in June 2008[3], we (Liliane Esnault and Amaury Daele) organised a workshop about the conditions of emergence of CoPs. We proposed a reflective exercise to the ten PhD students who attended. After having presented the theoretical background of the concept of CoPs in a plenary session, we went further with a little group of students in order to answer one general question: why and how to launch a CoP of PhD students in Technology-Enhanced Learning (TEL) domain? For this purpose, we presented the potential issues the group could try to take up from a PhD student's point of view:

- Why could it be interesting to collaborate for enhancing one's practice?
- How to identify and formalize professional practice?
- To what extent does sharing support practice improvement?
- What kind of collaborative activities could be interesting for PhD students in TEL?
- What kind of tools could support these activities?

In order to question these issues, we organised a face-to-face group discussion aiming at elaborating a scenario of activities to organise after the Summer School in order to share "PhD students practices" and support each other. This scenario could be supported by uses of tools. In order to frame the discussion, we proposed five main questions:

1. What are the typical issues that a PhD student in TEL faces every day (scientific, administrative, communication with supervisors, etc.)?
2. What are the different ways to cope with these issues?
3. How to write/depict/formalize an experience in dealing with an issue to make it sharable and reusable by others? Which techniques of KM could enable practice sharing?
4. Which (web-based) tools could support such sharing and reusing?
5. How to organise a distributed CoP to share practices in a sustainable way?

We here summarize the answers of the group to these questions.

For the questions 1 and 2, we present the answers in the table below. The first column lists specific issues and practices of PhD students. The second column lists possible ways to deal with the issues, with recourse to (web-based) tools or not.

Typical issues faced by PhD students	**Ways to cope with these issues (with tools or not)**
Scientific issues	
Literature reviews Questions about what should a good literature review be	Do a literature map, draw a concept map (with MOT, Bubbl.us, etc.)
Find references	Subscribe to specialized blogs

[3] http://www.prolearn-academy.org/Events/summer-school-2008

Other references to find: technology, people, etc.	
Writing papers Try to write joint papers	Getting feed back from others Define a strategy for publishing in Journals, Conferences, On line journals, Book chapters, etc.
Taking notes	Find question of research that are already written by others
Communication issues	
With peers	It is useful to present to someone else and discuss Use every opportunity to find a few “good links”
With supervisor With other professors, experts	Review paper we are working together By email or video conference Role of a Summer school : to try to establish European standards for a PhD in TEL so that it gives argument to students to discuss with their supervisors Think you must have something "nice" before presenting it Need to schedule the meetings (with common agenda for example)
How to share tips with other colleagues	Have a “common” environment
Efficiency	
When to stop? How long should it be?	Focus the curiosity Define what is the scope of the PhD
Personal management	
How to manage my time and my workplan	Make a list of all tasks Find out how long should each last Necessity of organization in order to anticipate
Socio emotional support	Sharing with peers

For the questions 3 and 4, participants proposed different ways to go further after the Summer School by using some tools already used by most of them:

- Have some on line seminars to develop skills related to the different issues mentioned here above (tools: Flashmeeting, Podcasts, a platform to promote outside, etc.).
- Have a visibility outside the community. Already existing communities generally have only one place to be. The problem is about the multiplicity of environments (tools: ask for PROLEARN to help. The PROLEARN academy already exists; they have different tools; it can be used as a start). Participants did not want to have another system, just to use the tools they daily use.
- Take care about the design: plan activities, see who is going to be the moderator, etc. otherwise it will not last. The tool is not enough.
- Make a connection beforehand by sharing information. "We need interaction, not only aggregation" (tools: common platform with dedicated modules).

Regarding the question 5, the participants proposed to follow three steps:

1. To define the purposes of the community;
2. To launch short activities and a schedule;
3. To list possible tools to use and choose one that is well known by everybody.

d) CoPs Emergence synthesis: common conditions for emergence

As a synthesis, we highlight several common conditions met in the three described cases. These conditions, from the members' point of view, seem to be important for the CoP to emerge and the members to feel to belong to the group. It is not surprising to notice that these conditions are in line with the literature about the emergence of CoPs [CEFRIO, 2005]; [Lesser et al., 2000]; [Wenger et al., 2002] and learning networks [Bottino, 2007].

1. First, the CoPs have precisely defined their **purpose and domain**. They know what they are about and what the concrete objectives of their members are. In the ePrep CoP, in order to propose activities that are in close relation with the members' objectives, a dedicated committee has been created. In InCorPorate, it was the first question that has been asked: what do we want to do together and for what purpose? And the first proposed step for developing a PhD students' community has been "identifying and defining the community's purposes".
2. Second, the first **activities are short**, i.e. with objectives, scenario and scope that the coordinator can easily control. The activities also lead to concrete outcomes that are directly related to daily practices of members. In the ePrep CoP, course contents have been shared through online platforms. In InCorPorate, short discussions on concrete elearning issues have been organised and then formalised. For the PhD students, one of the first activities should be the organisation of online seminars in order to develop the skills identified in the discussion.
3. Third, tools seem to be secondary. In the three observed communities, the **tools only serve concrete objectives and activities**. In other words, they are chosen once the objectives have been defined. The members take care to choose tools that are either already used by most of them or easy to integrate in their usual technical environment. In addition, their use is directly integrated into activities, i.e. appropriated by the members in order to support tasks. In a sense, the members like to not care about the tools; a good tool could be viewed as an "invisible" tool.

4. Fourth, the roles of the **coordinators are crucial** for launching the first activities and make the community growing: they synthesize discussions, propose objectives and activities, test different tools, communicate with external environment and partners, make connection between the members, foster participation, etc. The lack of coordination is probably the cause of the lack of communication and collaboration within the group of PhD students after the Summer School, even if personal durable collaborations sprang up.

In a sense, we here come across the generic scenarios again (see D.IMP.08 and D.PAR.08). At its very beginning, a CoP needs to '*Debate & Decide*' about its purpose and domain through negotiation and '*Reification*' of concrete outcomes. This contributes to the definition and development of the '*Identity of the CoP*'. In addition, short activities and appropriation of tools could be supported by the Learning and Organisational Resources developed elsewhere in PALETTE (see D.PAR.06).

4.2. A community of users of PALETTE services: some specifications

This section is dedicated to the presentation of some specifications for a community of PALETTE users to emerge after the end of the project. These specifications are based on the synthesis provided above and on the specific conditions of the partnership after PALETTE.

First of all, it is difficult to present such a community as a real CoP. As we found out through our analysis of emergent CoPs, organisation of activities fostering participation, moderation, common use of tools and services, process of reification, etc. are important for supporting the emergence of a CoP. However, after the end of the project we will not have resources for supporting such a group of interested people. Following the terminology of [Henri et al., 2003], the community that could be created after PALETTE would rather be a 'community of interest':

> A community of interest is a gathering of people assembled around a topic of common interest. Its members take part in the community to exchange information, to obtain answers to personal questions or problems, to improve their understanding of a subject, to share common passions or to play [Henri et al., 2003, p. 478].

In this section, we argue this point of view and suggest some guidelines in order to inform the creation of a community of PALETTE services users. As [Bos-Ciussi et al., 2008] state "communities are not mushrooms" and need favourable conditions to emerge. The proposals we list here below are conditions for a possible creation and "cultivation" of a community of interest of PALETTE services users.

a) Domain and objectives

The specific domain of this community would be the use of (Web) tools and services by CoPs, especially the PALETTE ones.

The three objectives of this community could be:

1. To provide resources about the PALETTE services and other outcomes of the project (scenarios, Learning and Organisational Resources – LOR, training resources, etc.).
2. To provide regular information about the further development of the PALETTE services and tools.
3. To be a location in which users could ask questions and be answered by other users or developers.

As in the communities analysed in this report, a central and common virtual location should be provided to this community. The PALETTE website seems to be an appropriate tool.

b) Target audience and members' profile

We maybe should not talk about "members" as this term is related to notions such as "participation", "belonging to a group", etc. We could probably rather speak about "users" of a community of interest. As [Henri et al., 2003, p. 478] explain:

> Since the activity of a community of interest does not correspond to a collective endeavour, the members do not systematically expect each other to share their individually appropriated knowledge and do not feel responsible for sharing how they individually use this knowledge.

The target audience could then be composed of various users interested in CoPs and their tools:

- Users of PALETTE services or other outcomes: CoP members or coordinators, KM managers in organisations, trainers of professionals, etc.
- Developers interested in the functionalities and interoperability of the open source services.
- Persons interested in CoPs and looking for appropriate tools and activities for developing groups of professionals in a wide sense.

At the beginning, the target audience will be composed of people who already know PALETTE and its outcomes. Little by little, through the dissemination of the outcomes, other interested people could be reached. The PALETTE website will play an important role as a window of the services and other outcomes of the project.

c) Activities at the beginning

In the CoPs observed in the previous section, the first activities are short and well defined. By "activities", we do not necessarily think to "organised activities" with specific tasks that members should complete. We rather follow [Henri et al., 2003, p. 478] who note that:

> In order to keep functioning and, consequently, to exist, the community of interest must find a balance in the participation/reification ratio. Thus the need to formalise the knowledge resulting from the interactions is often detected within a community of interest. This need can express itself, for example, by the production of a 'frequently asked questions' (FAQ) document which is used as both a group memory and a marker of community identity.

By following the advices of different authors [Bottino, 2007], [CEFRIO, 2005]; [Wenger et al., 2002] and considering some of the activities organised in the CoPs we have observed, we can suggest some actions to carry out for supporting the emergence of our community of interest. However, as it will be not really possible to count on a coordinator, we propose actions that would not need too much time and effort:

- Evaluating the PALETTE services: it is already possible to add stars and opinions to the services presented in the Service Gallery of the PALETTE website. This would increase the visibility of the services. However, this system could be extended to all the other outcomes of the project: LORs, training resources, etc.
- Information sharing through a blog about the further development of the services, interesting events related to the domain of CoPs, links towards interesting documents, etc.
- Allowing visitors of the site to ask questions to the developers about the services and their use with CoPs.
- Allowing users of PALETTE services to share their experience through the publication of short accounts.
- Connecting with other similar European projects through blogs and/or repositories of resources.

These first ideas could easily be implemented in the PALETTE website by a little committee, and are summarised in the conclusion of this report.

d) Moderation and coordination

As mentioned earlier, it will be difficult in the future to dedicate resources to the management of the website and activities for a community of interest. As most as possible, the activities related to this management should be entrusted to persons who already do such activities. These activities should also be integrated in the daily activity of these persons. ERCIM and the authors of the services would be the appropriate persons and their tasks could simply be:

- To publish information about the evolution of the services, related documents and events, etc.
- To answer possible questions asked by users.
- To manage the website.

In a first stage, the Editorial Board could play a leading role towards the emergence of the community.

In order to make these tasks as less time consuming as possible, several tools could – at least partially – automatically take in charge some of them.

e) Tools

Several authors propose design principles in order to develop effective learning and collaborative environments for distributed communities [Boettcher, 2007]; [Hoadley et al., 2005]. In particular, [Hewitt et al., 1998] propose 6 principles for informing the processes of knowledge building at a distance: supporting effective peer interactions, allowing different forms of discourse and participation, focusing on communal problems, promoting awareness, building on each other's work, and emphasizing community's work. We reflected on these principles in order to propose tools and uses that could support the emergence of a community of interest.

The main tool used for the purpose of the community would be the PALETTE website which is already the window of the project. In order to make the website more dynamic, several proposals could be examined:

- Writing regularly blog notes take time, and even if the writing is entrusted to an editorial committee, it is not sure that there will be sufficient number of topics and information to post regularly. However, a blog does not necessarily consist in notes writing. It can be used for sharing simple links towards other resources. That is why the use of a service such as FriendFeed[4] could be interesting. By automatically embedding notes from different blogs (developers of the services, other European projects, etc.) into one page that is itself embeddable in the PALETTE website, the PALETTE blog would be fed with interesting contents. The Did@cTIC community already use such a tool on its website: http://www.unifr.ch/didactic/fr/veille.
- A forum could be dedicated to the questions of the users and answers of the developers and other users.

In addition, two PALETTE tools spaces could be linked to the PALETTE website for specific purposes:

- SweetWiki: to allow users to propose accounts of their uses of PALETTE services, and developers to compose a FAQ with the main questions asked about the services. This FAQ would be a synthesis of the questions asked in the forum.
- BayFac: all the PALETTE documents (images, reports, presentations, URLs, etc.) could be shared through a BayFac space

[4] http://friendfeed.com/

5. Exploitation actions and recommendations

Interpreting the information described in the former section into practical exploitation activities and recommendations is the purpose of this section. It details the most relevant actions and recommendations towards the exploitation of the outcomes of the PALETTE project.

Three **types of recommendations** will actually be discussed, that depict respectively

1. actions the PALETTE consortium has already completed, is currently able to undertake, or has verifiable plans to undertake on the basis of the PALETTE experience. We highlight these ***verifiable exploitative activities*** accordingly.
2. the second is a type of recommendation which concerns actions that we would like to undertake if we had further resources or capacity. Some partners will individually try to implement some of these *additional exploitation recommendations*.
3. the third type of recommendations concerns generic or specific learning points on the basis of the PALETTE experience that we offer to the wider community to act as a resource for their own planning or design decisions in supporting learning within CoPs. In other words we refer to these as open exploitation recommendations.

These different recommendations, highlighted with the above convention, will be organised in three successive sections tackling respectively those pertaining to the exploitation of the software services; the methods, guidelines and other documents; the palette website; and the communication and advertisement policy. A final chapter will then draw a summary of the main recommendations into a general exploitation roadmap.

5.1. Services exploitation scenarios

Interpreting the data of our 2 surveys (see section 3), the outcomes of the Open Source strategy discussions (in [D.MAN.12]) and the other informal discussions that occurred during the project relating to the exploitation perspectives, we propose in Table 7 a summary of the exploitation scenarios options for each PALETTE service.

Opportunities – This table identifies exploitation opportunities with different practicability levels, such as a *near-to-certain exploitation*, currently planned by some partner (**v**), or an interesting option (**o**) for which no partner nowadays engaged but that should definitely be taken into account for developing a business with this service. The ***forge hosting*** scenario is seen as a minimum requirement for the continuing availability of the services and will therefore be ensured for all software services.

Some options are definitely ruled out, generally due to IP or organisational requirements (**x**), and some are not feasible for business reasons unless important changes are brought to the current state (**?**), we recommend not to investigate such less feasible business exploitation options.

exploitation model \ service	CoPe_it!	eLogbook	SweetWiki	BayFac	Amaya	LimSee3	DocReuse	Palette Portal	Semantic FAQ
Services models	v	v	v	o	o	v	v	o	o
Dual licensing	?	x	x	?	x	x	x	?	?
Shared development	o	?	x	o	?	?	?	o	?
Forge hosting	v	v	v	v	v	v	v	v	v
other information									
demand nature	n	y	y	Y	y	y	y	n	Y
declared contributors	1	1	2	1	2	1	0	2	0

Table 7: Exploitation scenarios options summary

Potential customer – Other information is provided in the scenarios summary to identify quickly the services were potential customer exist and no corresponding service provisioning has ever been proposed. Both BayFac and SemanticFAQ are highlighted with a (**Y**) claiming that non satisfied demand exists expressed by important groups of users. A similar lower case demand nature (y) states that some non satisfied demand exist but in smaller proportions. the (n) result characterise services for which demand *has been expressed*, but for which a partner has already declared himself able and interested in providing the demanded service. There is thus no remaining demand to serve. The exact figures are available in appendix 1, starting at page 41.

Community of developers – The final piece of information this summary provides support the identification of a start of a community of developers. Even though some PALETTE software gather developers outside of the consortium (such as Amaya), Table 7 shows that all three of Amaya, SweetWiki and the Palette Portal have more than one contributing partner that would like to pursue the service development after the end of the project. To identify the kind of development involved, once again kindly refer to appendix 1.

a) scenarios exploitation requirements

The sole observation of a business opportunity is not enough to exploit a service, and, as has been mentioned and discussed during our workshop [Grégoire, 2008], each of these business models has a few needs, we s*ee as th*e minimal requirements to enable their set up:

- all of them require a ***clear open source policy and licenses***, as explained in section 3.4, without such a preliminary defensive effort many risks are encountered when developing a business.
- most of the them require important efforts in *community building and support*[5] to be alive and interesting, including good documentation, already mentioned in section 3.3.

Besides these more general requirements, the more commercial business opportunities (namely Services models and shared development) clearly require

- a good market understanding.
- the (IT and human) capabilities to provide a reliable commercial service.

[5] The styling convention for highlighting recommendations has been explained in section 5, on page 32.

Agreements – In any case, ***agreements*** must be established on a per-case basis between the service developer and the service provider (when they differ) to clarify

- terms sharing between commercial and research partner (hosting, maintainance, helpdesk & support, training,...)
- price & conditions for CoP

5.2. Organisational resources and other documentations

Besides the PALETTE software services, other relevant results have been produced, that include amongst others:

- the official deliverables
- CoP managing content: participative design method, scenarios, services analysis, LORs
- user content: services user guides, trainings
- developer content: integration framework, services description
- online training
- online catalogue & teasers
- services showroom

Quick assessment – A quick assessment of the interest of the partners in accessing/using these outcomes after the end of the project has been conducted simultaneously to the business strategy questionnaire described in section 3.

A single question has been asked to every respondent to clarify their intent to use the (other) outcomes of the PALETTE project after its conclusion by either not accessing it, downloading it once, needing to find it online any time or use extensively for further modification.

The answers provided to this question are summarised and graphed in Illustration 3.

Interest in other results	no interest	download	online access	modify
online catalogue & teaser	2	0	8	0
CoP managing content	1	1	8	0
official deliverables	1	2	7	0
developer content	5	0	5	0
user content	1	0	9	0
services showroom	2	0	6	2
online training	2	0	7	1

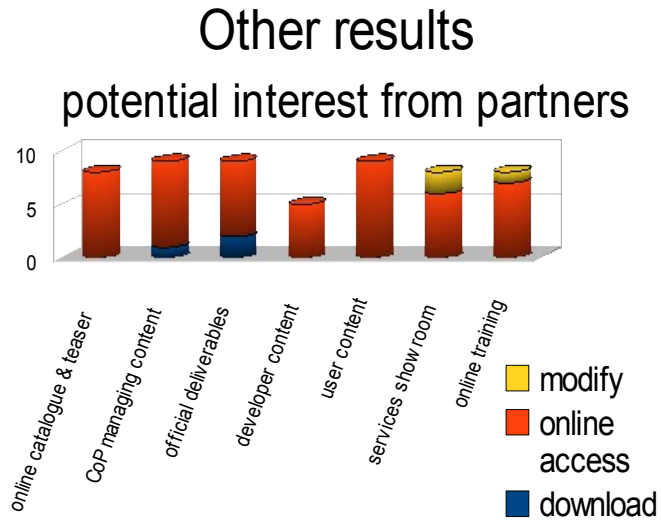

Illustration 3: Interest in other PALETTE results

Simultaneously, a ***long term hosting solution*** has been found for most of these content, including services gallery, learning platform, trainings and others, that will be provided by current project partners.

Other relevant material that where not specifically addressed in the above quick assessment include for instance the PALETTE website, or the working material hosted on the project BSCW document management system.

user and service related outcomes – Some of the aforementioned content, that relates to a single PALETTE service, can be re-used directly in the service provisioning, such as the training material, the online catalogue, teasers, user documentation (guides,...) and services analysis.

CoP management material – An impressive work has been conducted during the PALETTE project to support the animation of CoPs, such as the definition of a participative design method, of generic scenarios, of LORs and more.

This content can be used on its own for supporting either consulting provisioning (including the support for setting up a community of users of the PALETTE services, as described in section 4), further research or specialized advertisements over the PALETTE results.

It should be noted, nevertheless, that the aims of *selling consultancy services based on these methods* might require some protection of the content (IP protection) that might hinder the aim of advertisement. These purposes are anyway not antagonistic in all channels: academic publishing for instance generally permits the exploitation of the same content in consultancy missions.

We therefore suggest to clearly ***establish a shared policy for reusing the project material***, including the former confidential material and public documents, completing the PALETTE DOW that stated the minimal requirements of the Knowledge Management policy.

Partners interested in providing consultancy or support relating to the set up or growth of CoPs should make related commercial information available.

communication infrastructure – The PALETTE communication tools nowadays consist of the PALETTE website, the (internal) BSCW document management system, some mail aliases, and a few efficient communication channels, such as the ERCIM newsletter.

We propose to formalise a means to allow PALETTE related communications to be relayed on these channels, that is discussed in more details in the next sections.

5.3. The PALETTE website

A central and common virtual location should be provided to the community of PALETTE services users, to ***support its raise and activities***. The PALETTE website seems to be an appropriate tool. As explained in 4.2, the initial target audience will be composed of people who already know PALETTE and its outcomes (current CoPs and developers). It should then extend through the dissemination of the outcomes and increase of services user base.

The PALETTE website will play an important role as a first central window of the services and other outcomes of the project.

differentiate end user and developers – We suggest to ***distinguish clearly between the community of users***, and its relating information, that would be centralized on the PALETTE website ***and the community of developers*** of each service, that should rather feed their respective collaborative environments not to overwhelm the end-users with technical information or requests.

Following that idea, the ***PALETTE showroom*** might be redesigned towards end users, providing the teasers and other marketing material, while a *user-friendly web space would provide the relevant additional material, eventually powered by BayFac*.

Simultaneously, ***Developers' page*** would provide links to the various forge hosting all services development efforts and information, and *relevant developers documentation and integration means and feed-back would be supported by a collaborative web environment, such as SweetWiki*.

Many small and time-cheap actions were proposed on page 29 to launch and support the community of interest, such as *enabling a rating on the services and outcomes*, *setting up a blog* and *other community-driven communication means*

5.4. Advertisement and communication

To advertise over our results (methods, cases, services, guides, networks,....) is a major success factor to increase our user base.

Therefore partners have suggested to *publish appealing information on some specialized channels*, such as the European Association of Technology-Enhanced Learning (EATEL, http://www.ea-tel.eu/), that aims at promoting education and continuing education in the area "Technology-Enhanced Learning" (TEL) and to support science and research in this area.

The PROLEARN initiative is another relevant key place as it is an IST 'Network of Excellence' funded by the European Commission, bringing together the most important research groups in the area of professional learning and training, as well as other key organisations and industrial partners. Moreover at http://www.prolearn-project.org/.

More actively connecting with other similar European projects through blogs and/or repositories of resources has been proposed in section 4.

5.5. General exploitation roadmap

Merging the most relevant exploitation scenarios for each PALETTE services (detailed in section 5.1) and the exploitation opportunities for other PALETTE results we propose the following roadmap that recalls the main possible actions proposed throughout this document. Other options and actions were discussed and this list is not meant to be exhaustive.

For the sake of readability we loose here the styling convention for highlighting recommendations introduced in section 5, as the status of each of these recommendations has been discussed before.

- Shift the palette website and other communication tools in a form suiting the community of interest stakes. Related suggestions include the use of a blog and an important initial role devoted to the current editorial board.
- Clarify the documents and work sharing/reuse policy and make the documents publicly accessible accordingly. Related suggestions include the use of BayFac as a document management tool and providing commercial information about related support and consultancy availability by interested partners and 3rd parties.
- Homogenize and publish the services for the developers on their respective forges. Related suggestions include (a.o.) to create a Developers' homepage that would give a quick access to relevant information and infrastructures for all PALETTE services, and to use SweetWiki to that extent.
- Foster a community of interest amongst all palette results. Related suggestions made in this report include the relevant target audience, coordination and support means indications.
- Negotiate, set up and publish commercial proposals based on the PALETTE software services by interested partners and 3rd parties. Related suggestions have proposed relevant business models for each service, their requirements and strengths.
- Disseminate, publish, advertise and communicate in any way over the PALETTE available outcomes.

6. Conclusion

This document described the work relating to the definition of a plan to exploit the PALETTE outcomes, with a strong focus on the user-oriented software services.

It detailed the method we used and results we had in refining a general business strategy that could be adopted by some project partners in order to ensure the continuity of the service provisioning to the existing user base, and to hopefully grow a lively community of users of PALETTE services.

In this document, we issued a few recommendations and proposals for the PALETTE services exploitation, and insisted upon the business requirements that had to be met by any partner willing to turn a (software) service into a business service, including the need to clarify its IPR position.

Other recommendations were given as to foster a community of user of the PALETTE services, including really practical website evolution needs to make it more appealing, dynamic and less time consuming. Tool adoption proposals went in the same direction, by suggesting to share the current PALETTE documents through a BayFac space.

A general exploitation roadmap summed up the main actions that could be taken by the PALETTE consortium to advance towards a sustainable exploitation of the project outcomes.

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8. Appendix 1: exploitation survey results

The complete results of the additional exploitation survey can be found online at https://bscw.ercim.org/bscw/bscw.cgi/d564137/exploitation_survey_palette__views-only.pdf

The data tables and graphs are copied below.

Results: online survey PALETTE services exploitation

last update: 3. déc.. 2008

Participation

partners that answered:	71%	10/14
cops that answered:	55%	6/11
individual answers:		22

Details per service

LimSee3

Service provisionning offers & expected inco #2

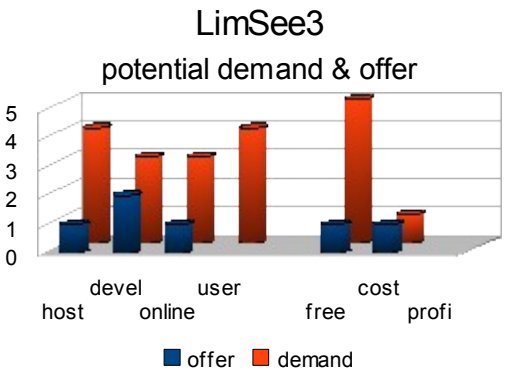
	host	devel	online	user	free	cost	profi
offer	1	2	1	0	1	1	0

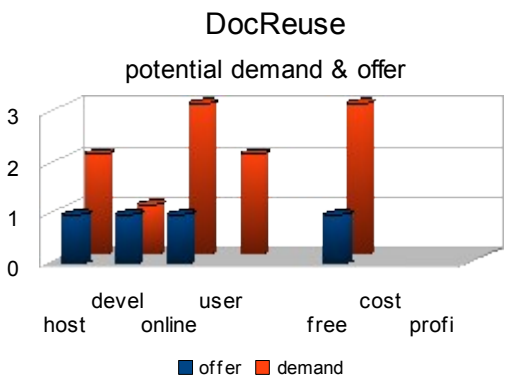
Service demand & reservation price #6

	download	admin	online	user	free	cost	profi
demand	4	3	3	4	5	1	0

Service evolutions & integration of modificati #1

	correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
	1	1	0	1	1	0	0	0





Amaya

Service provisionning offers & expected inco #2

	host	devel	online	user	free	cost	profi
offer	2	1	0	1	2	0	0

Service demand & reservation price #5

	download	admin	online	user	free	cost	profi
demand	3	2	1	2	3	1	0

Service evolutions & integration of modificati #2

	correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
	1	1	0	1	1	0	0	0

BayFac

Service provisionning offers & expected inco #0

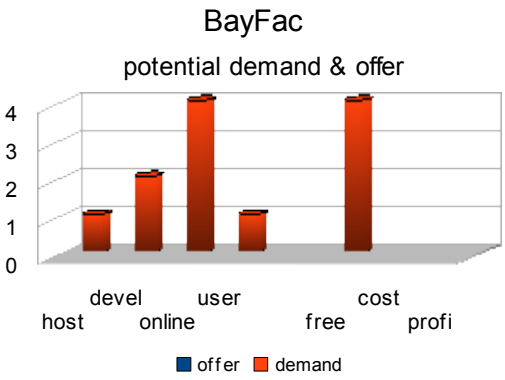
	host	devel	online	user	free	cost	profi
offer	0	0	0	0	0	0	0

Service demand & reservation price #4

	download	admin	online	user	free	cost	profi
demand	1	2	4	1	4	0	0

Service evolutions & integration of modificati #1

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
1	1	0	0	1	0	0	0



SweetWiki

Service provisionning offers & expected inco #2

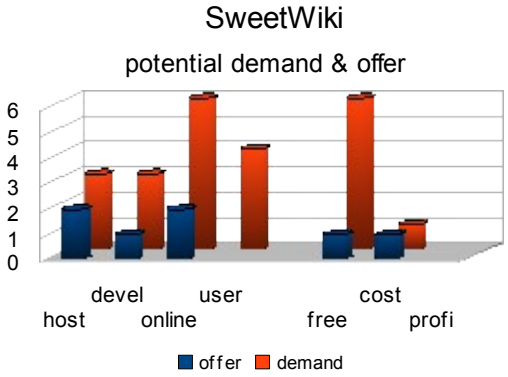
	host	devel	online	user	free	cost	profi
offer	2	1	2	0	1	1	0

Service demand & reservation price #7

	download	admin	online	user	free	cost	profi
demand	3	3	6	4	6	1	0

Service evolutions & integration of modificati #2

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
1	1	0	1	1	1	0	0



CoPe_it!

Service provisionning offers & expected inco #2

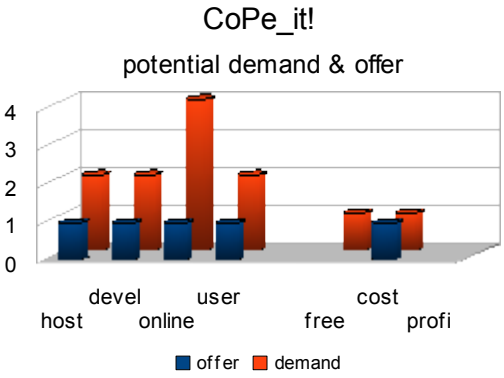
	host	devel	online	user	free	cost	profi
offer	1	1	1	1	0	1	0

Service demand & reservation price #4

	download	admin	online	user	free	cost	profi
demand	2	2	4	2	1	1	0

Service evolutions & integration of modificati #1

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
1	1	1	1	1	0	0	0



eLogBook

Service provisionning offers & expected inco #2

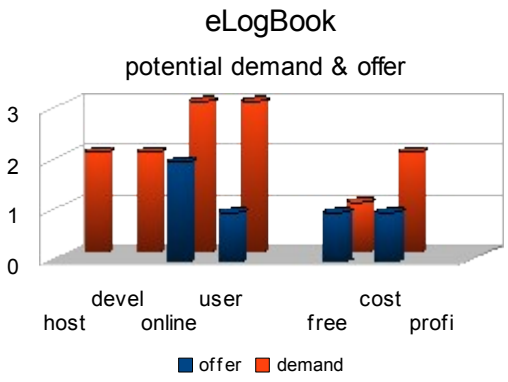
	host	devel	online	user	free	cost	profi
offer	0	0	2	1	1	1	0

Service demand & reservation price #4

	download	admin	online	user	free	cost	profi
demand	2	2	3	3	1	2	0

Service evolutions & integration of modificati #1

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
1	1	0	1	1	0	0	0



PALETTE Portal

Service provisionning offers & expected inco #2

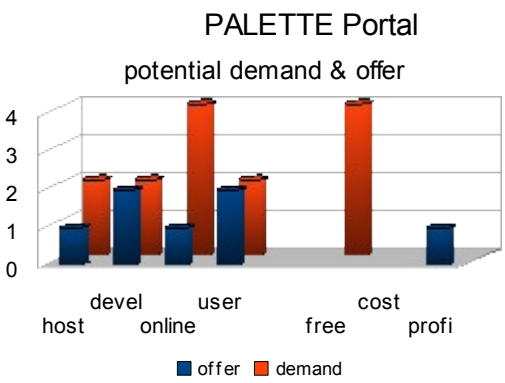
	host	devel	online	user	free	cost	profi
offer	1	2	1	2	0	0	1

Service demand & reservation price #4

	download	admin	online	user	free	cost	profi
demand	2	2	4	2	4	0	0

Service evolutions & integration of modificati #2

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
2	2	1	0	1	1	0	0



SemanticFAQ

Service provisionning offers & expected inco #0

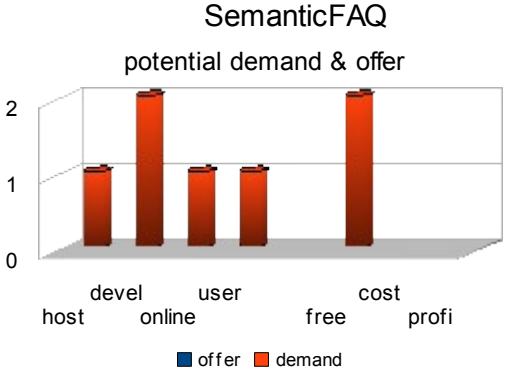
	host	devel	online	user	free	cost	profi
offer	0	0	0	0	0	0	0

Service demand & reservation price #2

	download	admin	online	user	free	cost	profi
demand	1	2	1	1	2	0	0

Service evolutions & integration of modificati #0

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
0	0	0	0	0	0	0	0



SeWeSe

Service provisionning offers & expected inco #1

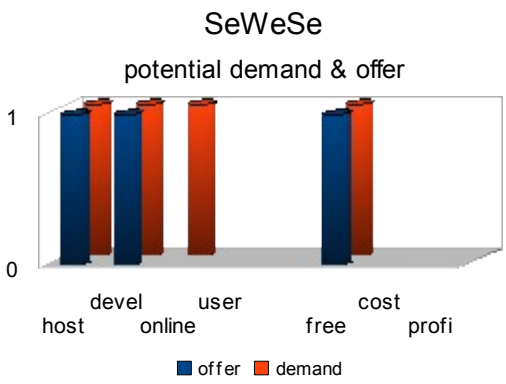
	host	devel	online	user	free	cost	profi
offer	1	1	0	0	1	0	0

Service demand & reservation price #1

	downloa	admin	online	user	free	cost	profi
demand	1	1	1	0	1	0	0

Service evolutions & integration of modificati #0

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
0	0	0	0	0	0	0	0



Corese

Service provisionning offers & expected inco #1

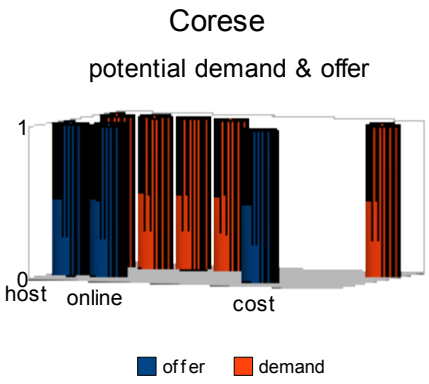
	host	devel	online	user	free	cost	profi
offer	1	1	0	0	1	0	0

Service demand & reservation price #1

	downloa	admin	online	user	free	cost	profi
demand	1	1	1	1	0	0	1

Service evolutions & integration of modificati #0

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
0	0	0	0	0	0	0	0



Generis

Service provisionning offers & expected inco #0

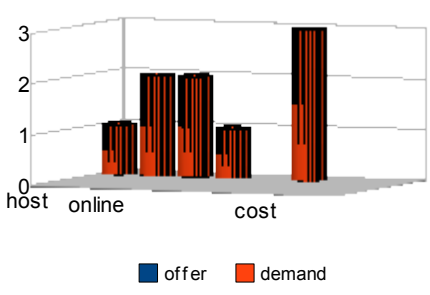
	host	devel	online	user	free	cost	profi
offer	0	0	0	0	0	0	0

Service demand & reservation price #3

	downloa	admin	online	user	free	cost	profi
demand	1	2	2	1	3	0	0

Service evolutions & integration of modificati #0

correct	enhance	integrate	customize	direct reuse	paid reuse	no reuse	private
0	0	0	0	0	0	0	0



Interest in other results	no interest	download	online access	modify	host
online catalogue & teaser	2	0	8	0	TRUE
CoP managing content	1	1	8	0	FALSE
official deliverables	1	2	7	0	TRUE
developer content	5	0	5	0	TRUE
user content	1	0	9	0	TRUE
services showroom	2	0	6	2	TRUE
online training	2	0	7	1	TRUE