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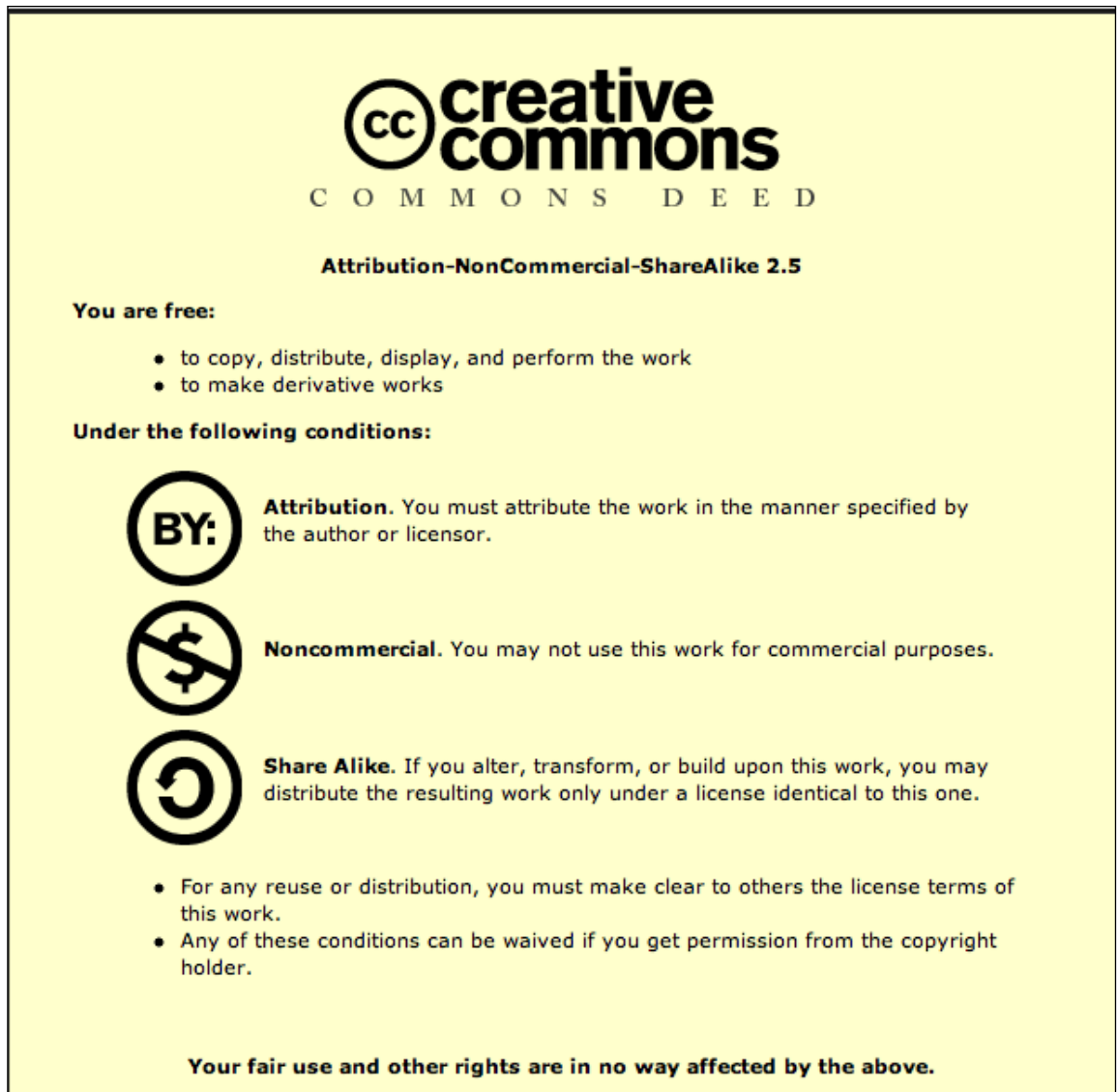


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Executive Summary

This report provides the details of training delivered during Phase 2 of the training programme. The purpose of the report is to account for the training and two-way knowledge transfer effort of the partners with SMEs towards the achievement of the objectives of the work package. It includes sections by the regional catalysts and other partners associated with this activity.

The report is organised into sections which summarise the work conducted by the respective partners. Each has considered the work and results that was envisaged in earlier plans such as D28.11; their achievements of planned goals; experiences and learning from this phase of our work; and plans for the next phase. We have chosen this structure because it reflects our roles as regional catalysts and enables us to evaluate shared and coordinated achievements.

The training delivery has taken into account the feedback received from the regional stakeholders during the Phases 1 and 2. Some of the inputs in this phase have been in the form of SWOT analysis and reports. Code camps have been particularly very productive as a learning approach among software developers and this has also helped in developing networking opportunities between the software developers and DBE project partners.

The presence at regional events of science, computing and business partners has assisted integration and providing feedback between architects and SME drivers. SME Drivers have supported the delivery of training to SME Implementers. Integration across regions has been effective in coordinating plans, e.g. for calls for interest, workshop design, and in exchanging experiences amongst European SMEs that will shape further training and development within the DBE.

Rich regional experiences have been gained in the area of training delivery. This experience has helped in surfacing the gaps in the architecture and some of the concerns related to technology and usage. These have been:

- Non availability of security and identity frameworks
- Reliability and availability of the DBE elements
- Capability for service composition
- Difficulties with BML and Ontologies
- Non availability of automated service development and deployment capabilities

Training delivery during Phase 3 will follow a similar approach to Phase 2 but will also foster enlargement of the regional engagement and to support closer inter-regional interactions. Each of the regional catalysts will also differentiate their training delivery based on their regional opportunities as these opportunities are likely to drive the formation of large groups of SMEs participating in the DBE.

1. Introduction

This is the second report providing details of training delivered to SMEs and others. It concentrates on the training actions delivered at all levels as specified in Deliverable D28.11 during the phase 2 training plan.

The training plan for phase 2 has been a continuation of the training plan for phase 1 in order to support the build up of a small community of early adopters. However in this phase most of the elements of the DBE architecture were rolled out and have been available for testing and usage by the SME community. During this phase the engagement with the SME Implementers have commenced making a larger involvement for development of services. Due to this being a major focus, the training delivery was aligned to meet the rollout requirements and due to this nature of alignment the training programme was highly technical.

The three regional catalysts and the training project partners have made individual training implementations to support the engagement of the SMEs in the regions. Also different training delivery mechanisms were adopted based on the regional needs and expertise.

The report is structured to provide a brief overview of the training plan proposed in D28.11 and subsequently provides a description of the actions performed for each of the three regional catalysts and the training project partners.

2. Partner Reports

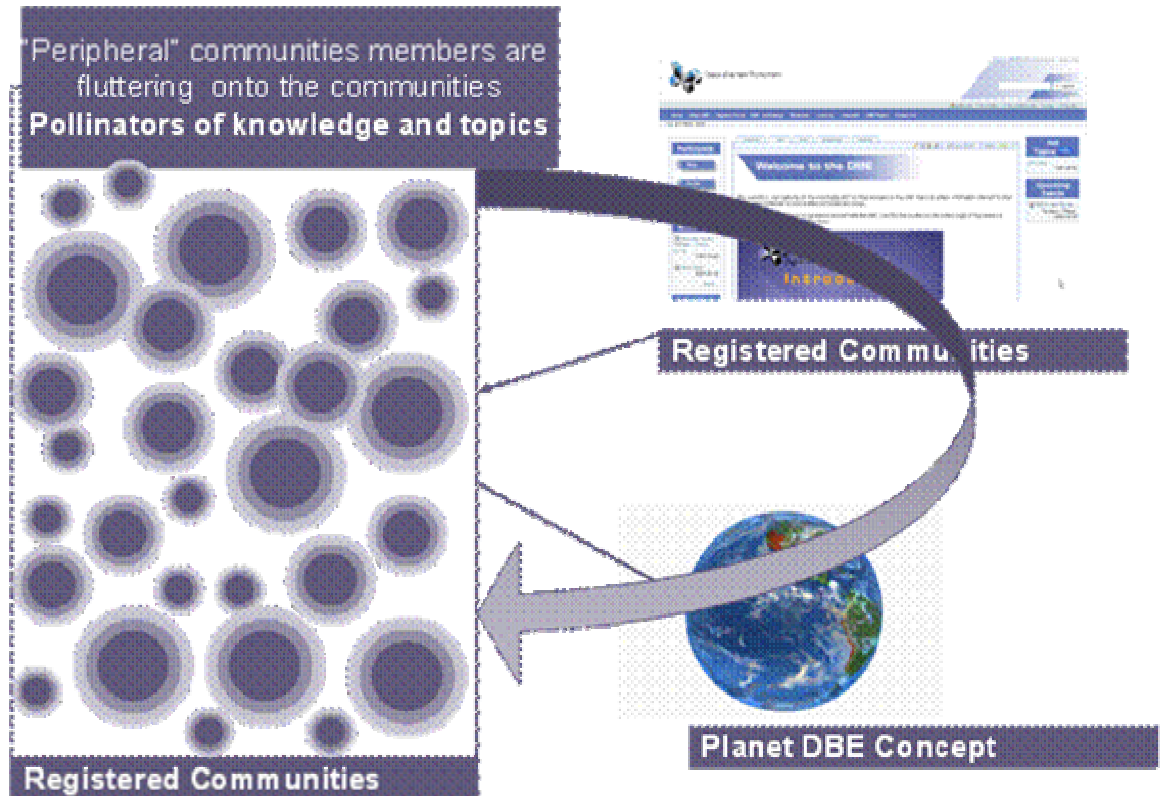
Intel

Introduction

Intel is in charge of the overall dissemination and the delivery of the knowledge platform that supports the management and delivery of learning material. By combining these two activities, we are aiming to capture both tacit and explicit knowledge. The tacit knowledge creation will be the outcome produced by the communities of practice.

The DBE website is the primary access point for anybody who wants to find information, but also who wants to learn, experience and participate. To this purpose, the site hosts information, movies, how-to guides, but also all the tools to register communities and browse in the outcome (knowledge) created within these communities.

The main aim is to aggregate all the latest posts, forums, news and events from these communities, and provide all this wealth of information and knowledge to the users.



Completed Work

The work done to-date is:

- creation of the website
- creation of the tools to support the communities of practice
- creation of dissemination material
 - Full set of movies
 - Micro economy (SME benefits)
 - Macro economy (Policy makers and regional development)
 - Technology platform
 - Evolutionary environment
 - Wallpaper
 - Screensaver
 - One page to explain the
- creation of the regional engagement section of the website
- availability of the knowledge platform
- availability of the learning objects and knowledge platform

Next Steps

The next steps are:

- publication of the learning content (explicit knowledge) used by the regional catalysts to train the SMEs, developers and policy makers
- Creation of an induction CD with all the learning assets
- Piloting of the community tools (registration, access and RSS)
- Regional engagement

TCH

Training Planned

As presented in D28.11, the Tampere training activities in phase 2 were divided into three categories:

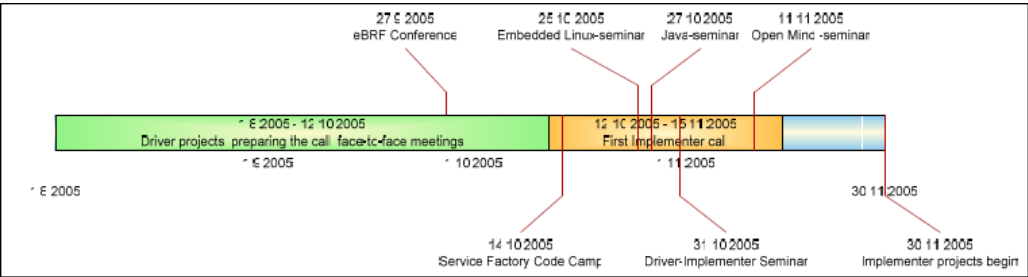
1. Engaging the Implementer SMEs with the help of driver SMEs (workshops and one-to-one meetings between the RC/drivers and implementers)
2. Providing the drivers and implementers the tools for engaging their clients in the DBE (content provision, seminars, one-to-one meetings)
3. Training in DBE-related technologies and emphasizing the link between DBE and existing technologies (seminars)

The main target group for the regional engagement activities were the implementer SMEs. Also the extension of the engagement of the driver SMEs was equally important. The main reason for this was the fact that the drivers are used as a tool in convincing the implementers of the technical capacities and business opportunities of the DBE. This was initiated at events in which the drivers present their own DBE integration projects to potential implementers. The drivers were also starting to integrate the software components of Tampere SMEs together and provide training for the implementers in their efforts to integrate new services into the DBE and taking part of the DBE community.

As the DBE technologies had been delivered for the SMEs to use in their business, they can create services that are attractive to their customers, i.e. users of the DBE. The engagement of user SMEs will be conducted through the driver and implementer SMEs. This process, then, will be supported by the training activities in Tampere region. This mission must also be reflected in the content creation that will be provided for the developer SMEs.

The acceptance of the developer SMEs, user SMEs and other collaborative partners is driven further by arranging events focusing on the technologies and approaches used in DBE, e.g. open source development and business models in general, open standards, service oriented architecture, java and model driven architectures. These are already rather well known by most software developers, but the link between these technologies and DBE as a way of creating business opportunities with them needs further elaboration.

The timeline for different training activities were planned as follows:



Training Delivered

There were some differences between training planned and training delivered. The driver projects went according to plans. Service factory code camp was held in the end of driver projects and even if it was too late to include services factory dimension in the driver projects, it provided the drivers with an excellent platform to plan their future DBE activities.

From the planned public conferences the Embedded Linux –seminar and Java-seminar were cancelled by the organiser. As DBE did not have a major role in those, it was not a great loss in the sense of training delivery. Open Mind –a seminar organised by COSS- was a huge success, however and open source was widely present in the eBRF conference as well.

The approach chosen in engaging the implementers were to let the drivers present the work they had done and act as examples of successful DBE implementations. Because of delays in technology releases the call for implementers was postponed for one month from planned to October 31st – December 5th. During the call two Driver-Implementer seminars were arranged, one in Tampere, one in Helsinki. To these seminars all potential implementer SMEs were invited and the total number of participants was about 30. In these seminars the Drives SMEs presented their projects and future visions they had for DBE. TCH also presented the call procedure and financing opportunities for the SMEs in the implementer phase.

The call was closed on December 5th and only four proposals were received. Even though all proposals were very good, the small number was disappointing and new plans need to be made in the final implementer engagement phase to improve from this.

Our Experiences and Key Learning

From our perspective the approach of letting the potential implementers hear from drivers their experiences about the DBE is good. The problem is that the DBE technologies are not very mature and as the Drivers naturally have recognised that and express it in their presentations, it is not very appealing to

new SMEs. However, the Drivers were requested to also think and tell about the positive issues they have encountered and recommendations to DBE usage in different situations. Thus the Driver-Implementer seminars were not negative but rather positive to DBE. Anyway, in Finland it is very important to be straightforward with the SMEs and improving the truth was not possible. In this sense our training approach was the only possible one even if it didn't yield very good results.

Our dilemma is that even though our task is to pilot the DBE technology with the support of 50% funding to SME's, we still need to convince the SMEs about the business prospects of DBE. 50% funding is not enough for SME to participate in R&D activities that are not directly related to their customer projects and in Finland we have had no other funding available. Being still rather immature, the DBE technology has not been very well suited in business use yet.

On key learning from driver-implementer training is the fact that the implementers need to be approached more individually. We had approached them through one-to-one meeting with them in which DBE was briefly presented. The potential applications to be implemented should be paid attention and encouraged for participation in DBE. This will be paid attention in the next phase.

Changes made to the plan and rationale

The plan was followed very well except for the fact that implementer call was postponed. As mentioned earlier, two seminars had been cancelled and two Driver-Implementer seminars were held instead of one. Because the driver projects were ending and the implementer projects had not yet begun, the actual training events with the SMEs were rather few.

A proposal for Phase 3

We have recruited a technology expert who will provide assistance in assessing the suitability of different applications and services to DBE. We will conduct a roadshow where as many potential implementers as possible will be paid a visit and encouraged to participate in DBE with concrete proposals. Also, we will arrange a series of "Application Interoperability Clinics" in which the interoperability of proposed applications will be assessed by drivers, implementers and TCH team. The purpose of these training events is to support the participation of potential implementers in DBE and also create and strengthen the tie between the SMEs from the beginning as they will form the DBE community in the future.

ITA

Proposed Plan in D28.11 and Actual Delivery

As it has normally been done in D28.11 and other training related deliverables, it has been described the specific plans for the different agents in the region in order to present a clear breaking down of activities.

In this section, it is showed the original planned for the phase 2 and the actual delivery. If there is a mismatch, then it is explained in the next section.

DRIVERS. We planned to make a concrete Work Plan for Driver SMEs in order to check and guarantee as much as possible their work progress, and we did it.

In order to guarantee interoperability among the different applications of the different Drivers, we decided to work all together and define the scenarios to be integrated all together. It has been done it in that way, and it has required a higher effort from all, but in that way we have been able to create a feeling of network around the DBE which will be very positive in the future, for example for some sustainability activities as the creation of new projects by the regional SMEs presented to regional or national funding research programs based on the DBE Technology.

Three of the Drivers have focused their work in integrating their applications through the ExE according to the Work Plan described in www.ita.es/dbe in the section “Drivers >> Work Plan”.

We have had meetings every 2 weeks with Drivers as planned in order to check and plan the work progress.

Then, on one hand we have had contact with the technical project coordinator of the DBE in order to be updated of the new releases and contents of the releases, and on the other hand we have been generating contents to transfer that knowledge to Drivers and we have had several training days to do so. The 3 main ExE training days (27th December 2005, 25th January 2006, 15th February 2006) in this second phase may be seen in www.ita.es/dbe in the section “ITA Training >> Workshops”. The DBE Technical coordinator attended the training day in December 2005 and solved many questions. The main DBE Studio training day was done in October 2005. It may also be seen there the agenda and the contents explained in those training sessions.

In order to facilitate the communication, we have created a common mailing list AragonDrivers@ita.es which includes to all regional Drivers and to ITA people involved in the DBE project and which has been used intensively.

We have also created a regional blog (“Regional Community >> Blog” section) where all the drivers may contribute and we all share our experiences about the DBE, the training days, and other subjects.

Lastly, we have also created a CVS (Concurrent Versions System) following the Open Source Philosophy in “Regional Community >> CVS Repository” section. In that way, Drivers put there the code they have developed for the DBE (the connector, not the back-end legacy system which may be open source or not) and it may be shared and checked by the others. We will also follow this initiative for the Implementers.

At the moment this deliverable is written Drivers have finished the developments of the connectors and they are doing the testing integration work. Then, they are finishing WP4 and it must finish on 28th March, 2006, since we have a meeting with other DE (Digital Ecosystem) cluster projects (Envision and Seamless) to show them the DBE in detail using this service example.

The last Driver has focused its work in the usage of the DBE Studio and he has provided very good feedback to the DBE Studio team in many aspects: installation procedure and secure implications, clearness in the interfaces and usability issues, understanding of what's next in the tool and what should be modelled, understanding of concepts such as Semantic description, Organization, Process, Event, Location and Motivation. Its work has been quite hard since the robustness of this tool has not been the same as the ExE, but it is reasonable, since they deploy these tools later.

Drivers have been used to gather information of many types, from legal and contract aspects to information to be used for developing SVBR examples and BML models and many different social and science studies.

IMPLEMENTERS. The specific goal was to engage 20-25 Developer SMEs in the 2 phases of the call tender, 10-12 SMEs in the first phase of the call in October 2006, and 10-12 SMEs in the second phase of the call in January 2006.

At the beginning of this phase 2, it was concluded by all the regions that have the engagement of Drivers was achieved by creating a trust-relationship with them. This relationship was obtained by arranging one-to-one meetings with the potential driver-SMEs, but in the second phase the number of potential Implementer SMEs is so high that this approach is not possible for the regional catalyst. For that reason the driver SMEs were planned to be used as a vehicle of gaining the trust of the potential implementers.

The first personal contacts with potential Implementer SMEs were done in the workshops held in Zaragoza and Huesca in May 2005 which were attended by more than 50 people from more than 30 SMEs.

From that point on, we held several one-to-one meetings with the potential SME Implementer candidates where, mainly to the six which presented a proposal even before the official Call Tender, in the Call for interest.

The publication of the Official Call Tender was done in October 2005 as planned. From that date till the close of the call on December, 5th, it was held several Meetings in small groups (3-5) with potential SME Implementer candidates (6), one of them in the WALQA Technological Park in Huesca and a

media of 2 one-to-one meetings with every potential SME Implementer candidates (22*2). In the first meeting we explained them the main concepts of the DBE, a brief description of their participation and activities, and in the second one the SMEs proposed us the applications they would like to integrate and we discuss with them if the proposal was good and how to do it at a high level.

The Phase I Call Tender was closed on December 5th, 2005 as planned and 17 proposals were received.

The Evaluation and the reports were prepared in December and presented and accepted by the PMEB in January.

It was planned that these 8 SMEs would have started their work in February but it has been delayed because of the suspension of the project till the suspension is cancelled. A deeper explanation is provided in the next section. The Kick off meeting was done on April, 4th. One ExE code camp has been done on April, 19th and one DBEStudio has been done on May, 4th (<http://www.ita.es/dbe/?ID=230>). The list of Implementers Phase I SMEs may be found in <http://www.ita.es/dbe/?ID=212> and its detailed work plan may be found in <http://www.ita.es/dbe/?ID=229>.

With regards of the Call tender Phase 2, we agreed with the Government of Aragon that they would fund this call. In order to do so, we have had to prepare the documentation according to their format. Since we are aware about the timing of the internal procedures of this call, we presented all the documentation to the Government in December and it has been published in the BOA in April (Official Bulletin from Aragon), which meant the open of the Call Tender Phase II. The Call tender Phase 2 was closed in May, 13 proposals have been received for 12 vacancies.

We have to go on making contacts with new potential candidates in the same way we did in the Phase I, but with updated information about the platform.

USERS. As it has been explained in other deliverables, Users are brought to the project through the Developer SMEs. This strategic change was already done before it was perceived that Users needs to use products much nearer to the market. It has been very important the feedback provided by Barrabes (Aragon Driver) regarding the DBE Studio, in order to manage the expectation of users since the beginning. Once the Developer SMEs have created the adaptor from the DBE to the application that Users are working with, they will install this new SW version in those real users that will use it. Drivers currently working in the project will bring 2-3 Users each one in WP6 “Deployment in real Users” in the middle of December 2005.

Users have already been selected by Drivers. Due to the delay in the development of the connectors already explained, then their participation has already been delayed in the same timeframe.

INFLUENCERS. In the first phase of the project, when we integrated the DBE into the strategy of the IST Government Department, they “reserved” 100K Euros for 2005 and 100K Euros for 2006. However, the funding of 2005 has been moved to 2006 since it was agreed that the DGTSI department of the Government of Aragon would fund the Call Tender Phase II. The new structure is due to the fact that the Government of Aragon provides budgets per year. It means that if a program is open in a specific year, then it has to be justified and paid within that year. It was not possible to open a Call Tender for a program at the end of one year and justify the work at the beginning of the next one.

The Government of Aragon is totally aware of the project and they even make “informal dissemination” activities in the nation, talking to other regions about the project, when they have meetings about other topics. Then, we go on informing the Government about the project. If SMEs provide also a positive feedback to the Government, then it will be very positive to the project.

The contacts have been also due to the fact that they are funding the Call Tender for Implementer SMEs and they needed detailed information. The complete sets of documents were provided in December 2005 and it is expected they will publish the call in the BOA in April which fits the expected timing.

OTHER ACTIVITIES.

In order to have a wider diffusion audience, and to disseminate the DBE as much as possible, we have already contacted with ESI (European SW Institute) and we have made them aware of the project. They are finishing now another IP of the VI Frame Work Program called Athena, and we thought it could be interesting to inform them and keep them updated of the project for possible going on projects.

We have also contacted with other Digital Ecosystem Cluster projects (SEAMLESS and ENVISION) in order to show them the DBE at a low-code level and show them the examples we have developed and even the applications integrated by Drivers. Miguel Vidal as the technical coordinator, and personnel from Techideas will attend the meeting too.

We are planning to integrate DBE and JBoss initiatives in some way. JBoss is a very important Open Source Application Server and we could gain a great number of Open source SW developers if we are able to integrate JBoss or some parts of it in the DBE. We are thinking of a first technical approach or an event where they can share their experience about sustainability and governance as an OS organization. We are working some kind of collaborations with one of the two Spanish companies certified by Jboss, namely, Neodoo

We have contacted with one of the masters of the UZA so that they can use the BML tool for Ontology definition in one of their courses. No agreement has been reached yet, but we are going on working in that line too.

Changes made to the plan and rationale

DRIVERS. The only change with respect to the original plan is the date when Drivers finish the integration. It has been delayed till May. At the moment this deliverable is written, they have finished the development and they are performing the integration testing. The reasons for the delay are mainly two, on one hand, they planned to have some identity, secure and contract features which are not available, so they have worked and agreed in a contingency plan, then, even some feature, as the discovering one, have not been available till recently. On the other hand, they have needed more time than expected in creating a common interface for all the scenarios they have developed. We wanted to make the simplest scenario possible, however we also wanted to produce something useful from a business perspective, so it had to be totally complete.

IMPLEMENTERS. The main change in the planning with SME Implementers has been the delay of almost 2 months in their activities. The reason is the suspension of the project just after the review in Tampere in January 2006. The partner who has to make the contracts and pays to the Implementer SMEs is UZA (University of Zaragoza). Once the project was suspended ITA was obliged to explain them the consequences of a possible definite suspension and they decided to stop the contracts until the suspension were cancelled. As soon as the suspension is cancelled, then the work of Implementers Phase I will start. The new kick-off meeting is planned for March 31st.

USERS. The plans made for users have not change since the previous report. Their participation has been delayed since the start of their activities depends on the implementers developments.

INFLUENCERS. The fact of moving 100K euros funding from 2005 to 2006 (then the funding in 2006 is 200K euros) due to the situation already explained in the previous chapter.

Experiences and our learning

The platform is not yet ready for a business proposal at the moment this deliverable is written. The stability and robustness is not enough in the ExE and it is even hard to install the DBEStudio. It has been possible to make integration of application and even our objective is to use it for a business purpose but in a “controlled” scenario. It means that in the tourism scenario case we have integrated in our region, for sure it is going to be deployed and it is going to be used by real users, however, in order to adapt the present status of the platform to the real usage by users, the users who are going to use the integrated applications are going to be a limited and controlled number of them, and they are going to meet and agree among them the way they are going to make the payments and how to solve the conflicting situations. In the ideal situation, new users would join to the scenario in an open way without advising anyone they are entering in.

We have checked that it has been an excellent idea to make Drivers work together creating a network and a way of working around the DBE in collaboration. It has required a higher effort from all but in that way we have been able to create a feeling of network around the DBE which will be very positive in the future. For example, for some sustainability activities as the creation of new projects by the regional SMEs presented to regional or national funding research programs based on the DBE Technology.

It is hard to produce documentation about something which is still evolving and under development, so that's the reason why the personal meetings with new candidates are the best induction procedure yet, although in that's meetings we redirect them to the web pages, both the general one and the regional one. This situation is expected to change in the next months.

Driver SMEs have reacted very positively to have a work plan and we are going to proceed in the same way with Implementer SMEs, adapting the work plan to the new situation of the platform, keeping the same philosophy. They have also perceived very positively the example services as training material and indeed we are also using them to explain the DBE to the new agents, even to the the DE cluster projects. Then, we go on producing new services which are always available in ITA web page, www.ita.es.

A proposal for Phase 3

DRIVERS. The plan for them is to finish their integration work finishing WP5, WP6 and WP7 no latter than May.

Then, there are different type of activities we would like to involve to Drivers, once the participation they have signed in their contracts finished:

- We would like to use Drivers as an example case and as a model case of how to work in group with the DBE. We would like them to show their case to Implementers and even to other regions. In that direction we would like to create a successful case and put it in the DBE Web site.
- We would like to enlarge the scenario they have started with new users and new applications from different SW provider. However, let's remember that the platform needs identity and secure aspects to grow up in that direction.
- We would also like to use them to provide "support" from a high level perspective to Implementers and future DBE adopters and explain them their experience and help them to solve their questions and doubts. Obviously, we would like to use them to provide even technical support, but we have to bear in mind that they are not funded for it.
- Related with the previous point, we need to involve them more in the DBE. Then, we are going to work so that they prepare new proposals of applications based on the DBE Technology to apply for some R&D programs such us PROFIT at a national level. This point is highly related to sustainability and to "D35.4 Integration with ERA policy and strategy" where the different regional and national programs are explained.

IMPLEMENTERS. The activities to be done by Phase I Implementers are very similar to those carried out by Drivers in general following the same WP structure. The detailed Work Plan may be found in The list of Implementers Phase I SMEs may be found in <http://www.ita.es/dbe/?ID=229> as already said in the previous section. It is expected that the time they have to invest is the half of the Drivers since the platform has evolved. Once the DBEStudio has been studied by ITA Technical Team, Phase I Implementers are going to work with the DBEStudio.

The activities to be done by Implementers Phase II is very similar to those followed by Implementers Phase I, but they will be able to use a more robust platform with more features. They will have a very similar Work Plan to the one of Phase I Implementers.

As the platform become more stable, then it will be possible to generate more stable materials and it will not needed to have a so high control about the reactions of SMEs. Then, it will possible to make events to a wider audience.

USERS. The planning of activities for Users have not changed. They have to use the integrated applications developed by Drivers and Implementers and provide feedback as indicated in WP6 and WP7.

INFLUENCERS. The planning is the following:

- Go on informing the Government and the key regional players about the DBE, so that the can disseminate and talk positively about the DBE to all their contacts.
- Create a new vertical program around the DBE based on their strategic Director Plan where the DBE is included (more information in D35.4 Integration with ERA policy and strategy). The more support from regional SMEs (Drivers and Implementers) the easier it will be to create it.

OTHER ACTIVITIES. The planning regarding to this point have already been explained in the previous section. The objective is to use the DBE platform in as many ways as possible, which is an activity highly related to the sustainability point.

We will also make dissemination events in new regions explaining the experiences around the DBE.

UCE

Training Planned

The UCE training delivery plan for Phase 2 for the period of months 18-36 was made and presented in D28.11. The same is shown in Table 1.

Actions planned for phase 2 of the learning delivery included:

- Development of DBE specific learning material based on internal documentation and extraction from public domain documents
- Create regional case studies and customize materials for each opportunity space such as tourism and manufacturing to explore business potentials
- Development of business presentations focusing on the business drivers for adoption
- Usage of multiple dissemination modes such as web logs, web contents, targeted publications and promotion events

Training Delivered

The focus groups for training were: SME Drivers, SME Implementers and the Regional Catalyst Associates. As the nature of the players varied in terms of areas of interest, skillsets, role in the region, and nature of establishment we had to design different trainings programmes using different delivery methods. In brief the training programme delivered included:

- DBE aspects
 - ExE, DBEStudio, BML, Business Models, Service Development (UCE developed services), etc.
- Technological Principles/Ideas/Philosophies
 - Service Oriented Architectures (SOAs), “Software as a Service”, Peer to Peer Networks, Semantic Descriptions, Ontologies, Open Source/Standards, Model Driven Architectures (MDA),...
- “One to One’s”
- 10 Workshops, 2 “CodeCamps” & Programming Sessions
 - 1 or 2 Days
 - “One to Few”
 - Involving partners: Intel, Soluta, LSE, UBham, IBM
- 4 Openday sessions for interested Implementer SMEs
- Reuse of the Materials
 - Weblogs ->Documentation ->Public Domain ->Online Training Material (Date Service, Date GUI Service, Migrating Web Services to DBE) ->Cheat Sheets -> Flash Demos
 - “One to Many” and “Many to Many”
 - Transfer of partners reports and deliverables

The training program for each focus groups comprised of the following competency areas and activities:

1. DBE Architecture – Execution Environment the features of FADA & ServENT and its implementation requirements.

The SME Drivers were required to implement the DBE architecture by following the approach similar to that used in the implementation of the DBE architecture at UCE. This will help them to host their services and to test the aspects of finding distributed services. UCE now hosts a dedicated DBE node that allows the hosting of services developed at UCE and also as an initial node that can be used by the SME Drivers to implement their services. This node has been actively used for all purposes of training in the region. In order to get the Driver SMEs started with their tasks, we planned to use the web log (<http://opensoa.blogspot.com>) documents where two example applications which required the installation of servENT and FADA on the SME's computers. These two example services demonstrated what a real world service might be like and, more significantly, how to create and implement it in the DBE. The web address of the node implemented by UCE is: <http://193.60.142.10:2002/>

The delivery methods adopted primarily involved one-to-one and code camps. A picture below shows a code camp in progress.



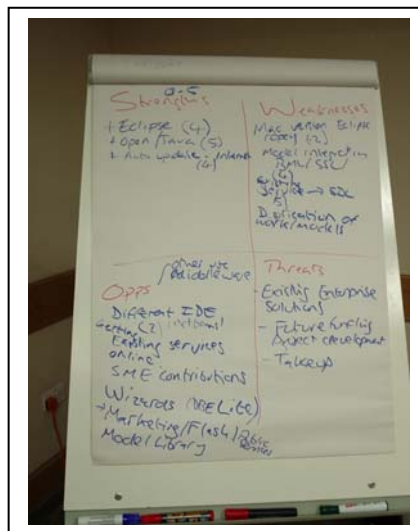
2. Development Environment – Eclipse, DBE Studio – BML 1.0, SDL & Wrapper development.

The training included a step-by-step approach to creating DBE services. The example services created by the DBE project partners and the UCE were mainly used to demonstrate how the DBE services can be created. The key

examples used were: Bluetooth, Date Service and Camera Service. The UCE team also developed a guide to migrating Web Services to DBE. This was very helpful as most of the SMEs were able to relate to the concepts and appreciate the simplicity in migration from other standards. Further there has been an on going discussion related to the client UI. Different approaches have been discussed and proposed including Flash, Java Swing, etc. The DBE project had evaluated the different options and found Open Laszlo to be a good option to develop the client UI. UCE has focused on this UI development and has developed an example and a tutorial to demonstrate the superior capabilities of Open Laszlo and its integration requirements into DBE.

The DBE Studio was evaluated in great detail, along with the Driver SMEs, using SWOT analysis also shown in the picture below. The following points summarize this analysis:

- Gap between DBE Studio and ExE (code generation and deployment – CIM ->PIM -> PSM->Code)
- Defining BML models is UML based and it is not intuitive
- There is no clear advantage modelling services with BML
- Require more information related to SBVR – More change creates more work
- Versioning and stability have been concerns
- The DBE Architecture is very interesting: Eclipse IDE, easy possibility of migration of services from other techs.
- Syntactic and Semantic description of services



3. Business Aspects – New business models, business processes for manufacturing and tourism opportunity spaces and commercial benefits for MDA approach.

It is imperative to understand that there is no single dominant effect or cost advantage that will provide a long-term sustainable competitive advantage to a business. The choices of operating business model are based on certain elements that are dynamic in nature (Alt and Zimmermann, 2001). Business

model transformation requires reconfiguration of value chains, business processes, organization structure and value offerings (Lee, 2001).

Three broad business models are adopted by software developer firms. These are: Open Source Software Model; Commercial Software Model and Hybrid Software Model. Each of these models has many sub-types which are based on the different influencing factors. Most of the software developers have traditionally adopted the commercial software model. In recent times due to the influence of open source initiatives both from governments and large firms the trend is shifting towards adoption of the hybrid software model. In the hybrid software model, software that has a higher intellectual involvement is offered under a commercial agreement while that with lesser intellectual involvement is offered under an open source agreement. The aim of the training in this area was to evaluate the influence of DBE on these three broad business models, their sub-types and the development of new business models as some of the existing business models are already undergoing a change.

Major changes in software development include a shorter software development cycle (Potok and Vouk, 1997), open source software development and increased competition from developing economies. Hence for the Developer SMEs the DBE is expected to start offering new capabilities by creating a market place for rapid development of innovative software services and for seamless integration of heterogeneous software applications. Also usage of such bespoke and innovative software developments is expected to offer superior long-term capabilities and competencies for their SME clients under focus, which in turn can enable the offering of superior services to their customers and management of value chain relationships – an approach to sustainable performance for growth.

The DBE project also provides a good opportunity for understanding the nature and the business dynamics of a business ecosystem based on Internet-based technologies. This is likely to provide a platform for extending this understanding to other business ecosystems that are based on other considerations than technology, for example political, economic, social and industrial requirements.

Since the regional focus for software service development was on Manufacturing and Tourism sectors, the UCE team was involved in exploring the generic business process within these sectors. The UCE team was additionally responsible for the development of M1 business models hence helped in playing a vital role in the training of BML 1.0 to the Driver SMEs. Also alternative MDA based approaches were explored using UML based toolsets such as CodeGenie (Ref: www.domainsolutions.co.uk). This business modeling opportunity provided insights into the service composition needs in order to serve the requirements of different business models.

4. Publication for Engagement – UCE aligned its call for engagement of implementer SMEs with the two other regional catalysts. The first step was to facilitate the awareness of the DBE project and to create interest for engagement through open days. Two such open days were held within the region by publishing the details about DBE in the web sites of regional associates. The open days were organized into two sessions one in the morning and one in the afternoon to provide flexibility to the attendees. The sessions itself were organized into presentations about DBE, business potentials, service development & integration, regional requirements, demonstration of sample services, a brief hands on and Q&A for clarifications.

In all eight new SMEs were met during the open days. Most of these new SMEs showed interest in the long term objectives of the DBE project while showed concern on the research nature of the project, the commercial viability and also the support for funding. Some of these SMEs voiced concerns on the supply and demand side of the DBE services and our plan for engagement. This was from the view that most of the Software Developer SMEs focus on large firms for business opportunities rather than SMEs as they do not see them as prospects for business opportunities. This matches with the research views as majority of the SMEs have the lowest ICT adoption levels making them least attractive for selling software services. All the SMEs UCE has met so far indicated that engagement through a public tender call is not the best approach for them as they do not follow this route for attracting new business opportunities. Also they do not have sufficient resources to follow this approach. UCE addressed this issue by offering any help that is required to prepare and submit the proposal including the technical writing of the proposal. However, the issue of tendering was also seen to be complex as the nature of SMEs to be attracted included early adopters of advanced technology developments.

However, the publication of the official call for engagement was done on October 2005 as planned in Computing as shown in the figure below. This publication was selected through a discussion with UCEs advertising agency Euro RSCG Riley. The following publications were selected and evaluated to target an audience that give a broad reach across the computing and business communities, who we feel will have the most interest in the DBE project.

- Computer Weekly
- Computing
- IT Week
- Information Age
- Information Professional
- International Developer
- Journal of Information Technology
- The Economist
- The Sunday Times
- Contrax Weekly

Computing was felt to be the best choice based on its circulation and the cost for publishing the tender advertisement. This is what Euro RSCG Riley has said about Computing – “The rigorously audited circulation database contains more of the UK’s most highly-skilled IT professionals than rivals. Computing’s recipients have the most in-demand skills – Oracle, SQL, Windows NT/2000, C++, Java, Prince 2, XML, J2EE, SAP, VB, MS Exchange, TCP/IP – the widest range of expertise and most relevant experience. Computing has the largest guaranteed circulation of qualified IT professionals and qualified public sector IT professionals in the UK.”

INVITATION FOR ADDITIONAL SUB-CONTRACTORS FOR THE DIGITAL BUSINESS ECO-SYSTEM PROJECT (DBE)

The Digital Business Eco-system (DBE) project currently active in the Sixth Framework programme of the European Community for research, technological development and demonstration activities contributing to the creation of the European research area and towards innovation (2002 - 2006) requires the participation of new Sub-contractors to carry out specific tasks within the project.

The DBE is the first of its kind initiative to pursue a peer-to-peer based approach to create an evolving Service orientated environment for electronic business transactions. It is designed specifically for the needs of small to medium-sized businesses (SMEs) and entirely Open Source.

Only SW Developer SMEs from the United Kingdom are able to bid for this tender (specific criteria apply) and the skillsets required to participate and use the DBE architecture are - expertise in web services development (i.e. WSDL, SOAP, XML-RPC etc) and software engineering processes that include business and software modelling of processes using UML based tools.

The DBE consortium is looking for proposals from SW Developers that are willing to intergrate an own application with DBE environment as a pilot. These pilots should refer to a concrete SME business context with the possibility to derive feedback from pilot users.

**Further information can be obtained from Nagaraj Konda,
email: Nagaraj.Seetharamon.Konda@uce.ac.uk**

Written applications for organisations who wish to participate in the DBE should be addressed to: Dr. Rod Shelton, Business School, UCE Birmingham, Room 212, Galton Building, Perry Barr, Birmingham B42 2SU no later than 5 December 2005.

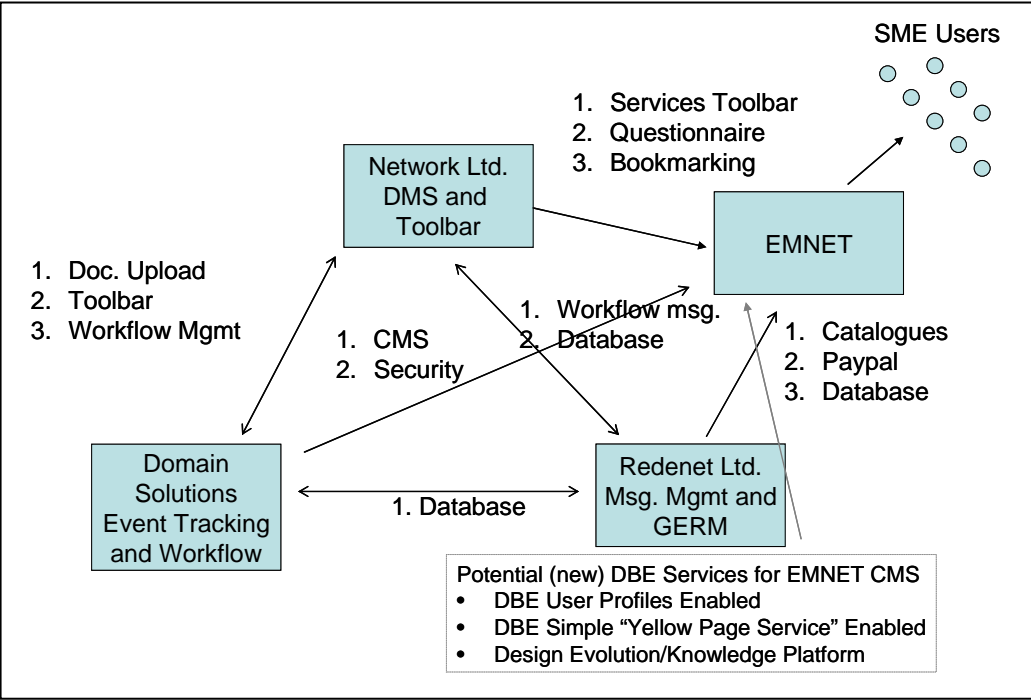
Digital Business Ecosystem


Information Society
Technologies


UCE BIRMINGHAM
Business School

The call was closed on December 5th, 2005. In total nineteen SMEs were interested and requested for additional information to participate. Out of them only three SMEs actually submitted a proposal before the deadline and three SMEs requested for additional time to submit their proposal. One SME requested for a withdrawal of their proposal citing the research nature of the project. The UCE team was constantly engaged with the SMEs in preparation and submission of their proposals. During this activity, potential services were identified to map to the regional opportunity spaces and to exploit the capabilities of the DBE architecture. The proposals included a composite service delivery model where the software services will be delivered through an ISP – EMNET – to 50 SME Users. The service

delivery model to be developed through the DBE is shown in Figure 1 below. UCE Team is keen to explore this composite service delivery model and to further enlarge its service possibilities. This is further explored in the later sections of this report.



5. Regional Awareness – In the West Midlands, UCE an education service provider plays the role of a regional catalyst. Hence, the role in the West Midlands region is unlike the role of the other regional catalysts. From the role of a player in the Higher Education Industry, UCE has managed to create an awareness of the DBE project through its relationships with the regional stakeholders, intermediaries and funded projects in the ICT area. This has been mainly through one-to-one meetings using the presentations, flash movies, blogs (opensoa.blogspot.com) and demonstrations developed within the project. We have also commenced the demonstrations of service consumptions using the Open Laszlo client interface. The Date Service and the Image Service demonstrations have been found useful.

Some of the regional intermediaries such as iCentrum, Open Source organization (OpenAdvantage) and regional IT associations have supported the regional engagement. Also iCentrum will soon become a test hub for DBE services as they are currently in the process of implementing the DBE architecture.

UCE has also been involved in the consultation process in the finalization of the regional ICT strategy. West Midlands is taking key steps to increase e-adoption and to foster e-business growth (Ref: <http://www.advantagewm.co.uk/downloads/regional-ict-strategy---digital-west-midlands.pdf>). This provides an opportunity to further exploit the DBE technologies for economic development and growth. A demonstration of the BML capabilities using the semantic search capabilities and the details of

the tree maps on BML package usage and interested AWM. AWM is keen to use this knowledge to perform a profile description of different opportunity spaces.

UCE has also started focusing on providing information about the DBE and the Services Architecture to organizations involved in business support such as Lawyers, Accountants, Consultants, etc. Lawyers are particularly interesting from the view point of their involvement in Open Source law and legal developments. Some of them such as Mills & Reeve have been interested in the DBE and have been keen to explore developments in this area. Also from the social science perspectives we see them as key players interacting with the SMEs and are in position to influence their actions.

6. Inter-project Cooperation – The UCE team has been in contact with other EU and regional projects. Among the EU projects there has been significant interest for knowledge sharing with ECOLEAD (<http://virtual.vtt.fi/virtual/ecolead/>). The areas of interest have been in Business Modelling, Semantics and Ontologies. The UCE team is keen to enhance such collaborations and explore opportunities to new domains and usage areas. Within UK, UCE is currently exploring opportunities with other regional establishments and projects. In the area of Virtual Enterprise Networking a presentation is being arranged with VEN International CLG part of Yorkshire Forward.

DBE Project (Contract n° 507953)

	May-June 2005	July-August 2005	Sept-October 2005	Nov-December 2005	Jan-February 2006	March-April 2006	May-June 2006
Objectives	Action 1	Action 2	Action 3	Action 4	Action 5	Action 6	Action 7
Recruitment of SME Implementers	Publication of Call for Interest	2 Open days and 4 sessions - Induction, Business Potentials, Service Development	Tender Call 1	Workshop for Bootstrap Strategy and Project for Service Development	Tender Call 2, One-to-one and workshop to discover business potentials	Workshop for Bootstrap Strategy and Project for Service Development	One-to-one and workshop to discover business potentials
	Key learning materials: Call Specs	Key learning materials: Macro view of DBE - Intel Presentation, UCE DBE Presentation, Pilot DBE Services - Date Service, Camera Service, Purchasing Business Process	Key learning materials: Tender submission guide, Software services to manage business processes 1	Key learning materials: FADA, ServENT, Eclipse, DBE Studio, BML & SDL, Wrapper Development	Key learning materials: Tender submission guide, Software services to manage business processes 1, Key business processes, Current ROI/TCO, DBE ROI/TCO	Key learning materials: FADA, ServENT, Eclipse, DBE Studio, BML & SDL, Wrapper Development	Key learning materials: Key business processes, Software services to manage business processes 2, Current ROI/TCO, DBE ROI/TCO
Pilot implementation of DBE services through SME Drivers	1 Workshop on DBE Architecture	One-to-one sessions	One-to-one, Workshops and Project for Service Development	Workshop and Projects			
	Key learning materials - Service Factory, Execution Environment, Evolutionary Environment, Bluetooth service	Key learning materials: FADA, ServENT, BML	Key learning materials: Business processes, Eclipse, DBE Studio, BML & SDL, Wrapper Development	Key learning materials: Software services to manage business processes 2, Exploring current ROI/TCO, Understanding DBE ROI/TCO			
Regional Awareness – RCAs	One-to-one sessions	One-to-one sessions	One-to-one sessions	One-to-one sessions	One-to-one sessions and workshops	One-to-one sessions and workshops	One-to-one sessions and workshops
	Key learning materials: Macro view of DBE - Intel Presentation, UCE DBE Presentation, Pilot DBE Services - Date Service, Camera Service, Purchasing Business Process	Key learning materials: Regional Ebiz Strategic Alignment, Macro view of DBE - Intel Presentation, UCE DBE Presentation, Pilot DBE Services - Date Service, Camera Service, Purchasing Business Process	Key learning materials: Regional Ebiz Strategic Alignment, Macro view of DBE - Intel Presentation, UCE DBE Presentation, Pilot DBE Services - Date Service, Camera Service, Purchasing Business Process	Key learning materials: Regional Ebiz Strategic Alignment, Project Extension, Regional Support Infrastructure Continuity Programme, SME Case Studies	Key learning materials: Regional Ebiz Strategic Alignment, Project Extension, Regional Support Infrastructure Continuity Programme, SME Case Studies	Key learning materials: Business Potentials and Ebiz implementation through DBE	Key learning materials: Business Potentials and Ebiz implementation through DBE

Our Experiences and Key Learning

Our experience in the DBE project in managing the learning actions have been interesting as we have always been under a position of constant change. The changes have been from the perspectives of:

- Technology and development road map
- Standards and adoption
- DBE architecture development and release
- Learning content development
- SME engagement
- Regional strategy development and DBE alignment
- Business needs and benefits

These changes have had significant impact in our role as a regional catalyst and particularly in the management of regional training. During the early part of Phase 2 training, the amount of information and knowledge available was low. This was due to the delay in the development of DBE technologies. However, during the course of the phase as the features were being released, UCE gained considerable expertise and this effort was well supported by the DBE partners. The delay also led towards managing additional time and effort with the SME drivers in order to make them aware of the changes taking place within the project and also for becoming a local resource for query management including areas surrounding the general aspects of SOAs. There were also concerns on the stability of the architecture. One key area which led to spending considerable amount of effort was in the area of Business Modeling. The BML models created and stored were not retrievable at the later date or the models themselves were unstable. This led to considerable amount of rework amongst the SME drivers. Also the aspects of migration from BML1.0 to BML2.0 has led to some dissatisfaction in view of such small window of opportunity technology developments within the project.

From the aspects of delivery of training, the SMEs have felt that the code camps were more effective as the SME drivers were able to do hands on integration of their services. This also opened up collaboration opportunities leading to a joined-up activity in Phase 2. The Blogs have also helped in sharing interesting information around the community. Apart from providing learning content, UCE has used the blogs for signposting the readers to interesting content on the web in the area of SOAs and pod casts on related areas.

The region is also experiencing increasing awareness of open source software and the development of open standards. Though this has enabled us to address some of the business aspects of open source software such as business benefits, ROI, TCO, etc. there has been difficulty in applying this to the DBE developments. Further due to the delayed engagement process with the regional SMEs, conducting these measures has not been viable. Also the delay has led to slower engagement of SME implementers as early attractors and killer application services have not been available.

The readiness of the DBE platform and some of its capabilities have remained a concern. Some of the areas where the regional SMEs have particularly made strong views have been related to:

- Non availability of security and identity frameworks
- Reliability and availability of the DBE elements
- Capability for service composition
- Difficulties with BML and Ontologies
- Automated service development and deployment capabilities

Changes made to the plan and rationale

These are the main changes that have happened in the training delivery in West Midlands region:

- Implementer SME training
- Measurement of actual business benefits and metrics for ROI / TCO
- Rollout of DBE architecture and service integration training
- Additional efforts in certain areas of training due to the reasons mentioned earlier

These delays have been due to the delay in the project activities and also in line with the actions being carried out by other regional catalysts. To understand and measure some of the business benefits the project requires a critical mass of software services and usage. This critically needs to be facilitated through a completed DBE architecture with readiness from all aspects of capabilities.

A proposal for Phase 3

UCE proposes to continue its training plan as proposed for Phase 2 but to spend more time and efforts with the SME Implementers and also towards demonstrating attractor services including killer application services. The coordinated delivery opportunity of software services to be delivered through EMNET will be a key focus during this phase. UCE will also create demo services around CRM and ERP using well known open source applications such as OFBiz, SugarCRM, OpenCRM and CompiereERP. Some of the services within these applications that are already exposed using WSDL will be connected using SOAP in order to enable connectivity across software services. The focus will also include BML2.0 and the developments associated with it.

UCE will also focus on workshops for showcasing DBE applications developed by SME Drivers and those being developed by SME Implementers.

3. Conclusion

This report has explained the progress made in delivering training and encouraging learning within the regional communities and the DBE partnership. The three regional catalysts and other partners associated with the training work

packages have presented their approaches to training delivery. The region specific approaches have been influenced by the nature of the regional engagement and the capabilities of the regional catalysts.

The report has identified some areas where changes to training delivery were made and the rationale for such changes while highlighting some areas of concerns that have influenced these changes. Also a future outlook has been provided for training delivery.

The key points of actions during this phase have been:

1. Most of the DBE elements were rolled out and have been available for testing and usage by the SME community.
2. Commencement of SME Implementer engagement
3. Development of learning content to align with the technology rollout
4. Region specific training delivery approaches adopted

A summary of the results of the training actions are provided below:

- Very early stages of technology rollout and engagement and has helped in lots of learning
- The DBE platform is constantly evolving requiring retraining and training in new areas
- The development of training content has been both planned and unplanned
- The regional catalysts have gained interesting knowledge and constantly learning and reforming their actions
- Further understanding of the technology and experience required to derive potential benefit statements, metrics and case studies
- Some of the Driver SMEs are highly knowledgeable and are able to influence regional uptake
- Regional actions have been different and this clearly shows that there is no one way of doing things
- Blogs are very helpful and act as both formal and informal communication channel
- Codecamps have been the most productive form of training delivery but this form requires more resources to manage
- Training programmes need to focus on clarity and customization of content and delivery
- Require multidisciplinary skillsets - vertical and horizontal

Training delivery during Phase 3 will follow a similar approach to Phase 2 but will also foster enlargement of the regional engagement and to support closer inter-regional interactions. Each of the regional catalysts will also differentiate their training delivery based on their regional opportunities that align with their opportunity space as these are likely to drive the formation of larger groups of SMEs participating in the DBE helping in achieving a critical mass of users.

4. References

Alt,R. and Zimmerman,H.(2001) “Business Models”, Electronic Markets, Vol.11, No.1,pp.3-9.

Lee C. S. (2001) “An analytical framework for evaluating e-commerce business models and strategies”, Internet Research: Electronic Networking Applications and Policy, Vol. 11, No. 4, pp. 349-359.

Potok, T. E. and Vouk, M. A. (1997) “The Effects of the Business Model on Object-Oriented Software Development Productivity”, IBM Systems Journal, Vol. 36, No. 1, pp. 140-161.

5. Appendices

Appendix 1 – Feedback from Domain Solutions Ltd., UK

Workstream: Domain Solutions DBE Stage I	Workstream Manager: David Pilfold
Report date: 12th January 2006	Report Author: David Pilfold
End of Phase I Commentary:	
<p>Domain Solutions have delivered services for the tourism and manufacturing sections which are now running on the UCE Server. This document details the final review and feedback items required for the end of Stage I of the DBE project.</p> <ul style="list-style-type: none">■ To learn the architecture of the system, the main modules, to evaluate it and to provide feedback. (This discussion was covered in the audio recording which is summarised below):<ul style="list-style-type: none">○ The FADA Execution environment offering Peer-to-Peer provision of services is very powerful, without the need to install software at the client site.○ The publication of services on the central registry needs completion such that harmonisation of services can occur.○ Localisation of the services should be considered (i.e. your local services).○ The architecture needs to be improved to rival and augment the web-service architecture offered by web applications.○ Code Camps were very useful for learning the architecture.○ The Eclipse plug-in was very useful for us (as we use Eclipse for software development) though for the business specification it is not so useful and possibly would be better as a number of web-pages?○ The DBE architecture should be formalised into a standard to gain acceptance.○ Missing bits – Recommender, Evolutionary Environment.■ To provide feedback about the platform security, performance, confidence, management and the possible inefficiencies of the software<ul style="list-style-type: none">○ We have concerns about global service ability; we believe that the security modules should allow handshaking take-up of services.○ The performance of the system was not an issue though obviously some stress tests should be performed on the model as the service-calls implemented are Remote Method Invocations which are synchronous-blocking calls this would not allow for the client to perform other services unless threading was used.○ Confidence in the stability and provision of the system is higher than expected, and the confidence has increased in the system. However, as with new	

technologies, it is hard to find early adopters to the technology.

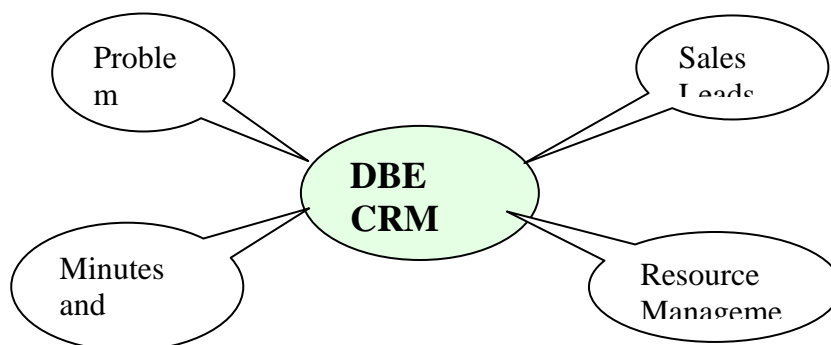
- Inefficiencies exist in the mapping of the services to the systems that supply them, these inefficiencies are often hard to avoid.

- To participate in programmes of training with the Regional Catalyst. – and take part in periodic meetings to analyze the potential, progress and **risks of the project.** – **Bullet points** (see below):
 - The risk on introducing technology that was at beta-status was a major risk and did result in rework for us (DBE studio came later) however it was quite stable.
 - The risk of lack of client take-up is an issue; it's hard to start the Ecosystems.
 - The commercial aspects of the project changed during the project this may have alienated other partners.
- To describe the software service needs for selected opportunity spaces in the West Midlands region. – **Diagram + Text**

We believe that general purpose business technologies that encompass a complete solution rather than simple services will make the DBE easier for clients to adopt, as part of that a number of standard project tools could be developed that would be instantly used by companies.

The key suggestions are:

- A Customer Relationship Management system CRM (aka trouble ticketing or call/issue management system). This is a standard tool that can be used throughout business to manage issues, sales leads etc and would also allow for customers to raise their own issues on suppliers etc using the DBE. It could even be used for the DBE project itself!



- Project Management tool. All companies manage projects of some kind and require this functionality.