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This deliverable summarise the decisions and the governance strategies adopted and /or decided by the DBE consortium during the last year and it reflects the decisions and the problems outlined in finding a unique agreed vision among the consortium regarding this issue

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1. Introduction

This deliverable base it works on several researches and analysis conducted in the DBE project mainly the internal report M32.4 by Mary Darking and the report on the Delphi process conducted early in 2007.

The issue regarding the constituency process and structure has been very controversial in the project and the discussion did not reach a point of convergence due to a fundamental lack of trust among discussion participants and distance agenda put forward. The document, rather than a proposal integrates several contribution made on this topic and tries to draw a possible line of actions for the short term of the DBE results.

2. DBE and ICT Commons

2.1 Commons

Commons are institutional spaces, in which we can practice a particular type of freedom – freedom from the constraints we normally accept as necessary preconditions to functional markets. This does not mean that commons are anarchic spaces. It means that individuals and groups can use resources governed under different types of constraints than those imposed by property law. These constraints may be social, or physical, or regulatory. Whether a commons in fact enhances freedom or harms it then, depends on how the commons is structured, and on how property rights in the resource would have been structured in the absence of a commons. Commons are a particular type of institutional arrangement for governing the use and disposition of resources. Their salient characteristic, which defines them in contradistinction to property, is that no single person has exclusive control over the use and disposition of any particular resource (Benkler 2003). Instead, resources governed by commons may be used or disposed of by anyone among some (more or less well defined) number of persons, under rules that may range from ‘anything goes’ to quite crisply articulated formal rules that are effectively enforced. Following Benkler analysis commons can be divided in four types following two characteristics. The first parameter is whether they are open to anyone or only to a defined group. The second parameter is whether a commons system is regulated or unregulated. Practically all well studied limited common property regimes are regulated by more or less elaborate rules – some formal, some social-conventional – governing the use of the resources.

In the late 1960s Garrett Hardin wrote “the tragedy of the commons.” Originally aimed to explain why private incentives would lead to firms to pollute their environment even against their own long term interest, and thereby to justify pollution controls, the trope took on a life of its own. It came to stand for a proposition that all commons are tragic, and that property rights are a

necessary precondition to efficient, or even sustainable, resource management. Over the past twenty years or so this now-standard understanding of commons has been challenged.

With regard to information, culture, and communications systems, resources necessary for information production and communications systems can be managed as commons in ways that are sustainable and desirable. Information is a public good in the strict economic sense, and is also input into its own production process. Because of these unusual characteristics, few, if any, economists would argue against the proposition that a substantial commons in information goods is not only sustainable, but indeed is necessary for efficient and innovative information production systems. Beyond the public goods characteristics of information, a digitally networked environment is also pervaded by resources that, while not public goods in the strict economic sense, nonetheless function well on a commons model. There are many reasons to care about the extent to which our information environment includes substantial commons. As Lessig has explicated so well, commons throughout the networked environment are necessary to allow innovation to progress without the permission of incumbents who would seek to constrain the path of innovation to fit their own business plans for where technology should go. But commons in information, culture, and knowledge are not only, or even primarily, a question of innovation. Commons are about freedom. What the commons makes possible is an environment in which individuals and groups can produce information and culture for their own sake. As we transition to a networked information economy, every point of control over the production and flow of information and culture becomes a point of conflict between the old, industrial model of production and the new distributed models. In order to capture the benefits of freedom and innovation that the networked information economy makes possible, we must build a core common infrastructure alongside the proprietary infrastructure and the DBE is the first public instance of such open infrastructure. The DBE initiative has provided an open software layer that supports open protocols and FLOSS systems on which we can open content (whether is software or any digital content) can be distributed,

3. DBE Governance and Constituency building

Following the 2nd annual review in January 2006, the broader significance of governance to the DBE project and the future sustainability of the DBE infrastructure became a central concern of both project participants and reviewers.¹

Until the 2nd annual review of the DBE project, which took place Tampere in January 2006, there had been no open discussion concerning governance and the DBE. Ideas regarding governance and sustainability had been raised at business domain meetings and a deliverable on sustainability was produced by 2 partners in which a proposal for a 'DBE foundation' was put forward. However, debate on these topics had not been opened out to the project membership as a whole and crucially, agreement on these plans had not been reached at project management level.

These two factors were clearly in evidence at the annual review where it was noted in the reviewers report that there was obvious conflict within the consortium around sustainability and governance issues (p.42, Report of the DBE 2nd annual review). There was criticism that open consensus had not been sought, that sustainability had not been appraised from all stakeholder perspectives and that important aspects of governance such as codes of conduct and a bill of rights had not been considered.

The reviewers were also critical of these two aspects in the review report, which was circulated to the project membership on 28th February 2006. With regard to governance they made the following stipulation:

¹ Excerpts from Internal report Internal Report M32.4 "Discussing and acting on DBE Governance Issues: towards a consolidated framework" by Mary Darking, LSE

An open and inclusive consultation process is required to address other aspects of sustainability, governance and codes of conduct: this needs to elicit contributions from social science, business, political bodies, regions and other stakeholders of the Innovation Ecosystems Initiative (p.50, Report of the DBE 2nd annual review).

Prior to the DBE 2nd annual review, an attempt had been made in December 2005 by members of the project management executive board (PMEB), to open out discussions surrounding governance. An open discussion thread was started by the Project Manager on the DBE website. The first or 'seed' posting exposed a difference of opinion that had occurred at project management level. Opening out discussion on governance was undertaken in order to prevent the agenda on governance from being driven too strongly by the interests of one industrial partner. The political tensions emerging from these postings were obvious to project partners outside the management board with the result that few were willing to 'risk' contributing to the discussion thread. Following the annual review, this thread was eventually removed from the website since in an attempt to encourage open contributions from project partners.

Immediately after the annual review, the researcher acted on proposals that had come out of a general discussion held at the end of the review process, producing a number of draft e-mails and discussion postings designed to initiate an open consultation process. These draft documents were circulated to members of the consortium and feedback was sought. One of the partners consulted suggested that if the push to create an open forum came from a partner who had received favourable feedback at the review, the initiative might serve to alienate parties who had not, thus compounding existing divisions. On the basis of this feedback the researcher abandoned these efforts and instead worked together with the project partner responsible for web site design and construction in order to instigate an open consultation process. A method based on document version control was designed and posted to the DBE web site discussion forum on 2nd February 2006 <http://www.digital-ecosystem.org/Forums/DBE%20Governance%20-%20process>. Through this process it was hoped that documents contributing to a framework for

governance could be published and revised using an open and transparent process, therefore reducing the level of disruption that hidden agendas had so far caused. However, despite promoting the initiative using project mailing lists, there was not enough support for the process from the project membership, evident from the low number of responses that the initial posting elicited.

Feedback regarding this process indicated a number of reasons why it had not been successful. One criticism was that the process was too regimented and that it focused on bureaucratic instead of community oriented aspects of consensus or constitution building. Other feedback described the standard of language used to describe the process as being 'too good' and it was claimed that individuals had been put off contributing to the open forums because they could not match this standard. There was also feedback to say that the idea of governance was not adequately understood and the issues associated with governance had not been sufficiently opened up to allow participation. Underlying this feedback was a general recognition that the atmosphere within the project at this point in time was still very tense and contributing to these discussions was seen as a political gesture that carried with it personal risks. In this climate of political unease, there were more disincentives than incentives to engaging in open dialogue.

The fundamental rifts that had occurred at management level inhibited the ability of consortium members to communicate freely with one another. One reason why these rifts existed was due to the difference in long term strategic vision that senior members of the PMEB clearly held. These differences were exposed at the annual review when the project co-ordinator began speaking of the DBE infrastructure as a potential European Technology Platform. Traditionally industry-driven, this strategic vision (which had not previously been discussed within the consortium) seemed to be at odds with the core goals of the project, which was designed as an SME-centred, non-proprietary, principally 'ground-up' oriented project. It appeared that this difference in strategic vision lay at the core of current difficulties and since the annual review was the first occasion that the consortium as a whole had been introduced to these ideas, the researcher wrote an e-mail to the project co-ordinator in copy to the

consortium shortly after the review, asking him to explain his vision for the DBE (see appendix 1). In addition, she asked that the co-ordinator clarify if and how this strategic vision was consistent with exploitation plans that as an industrial partner, the co-ordinator sought to put in place. The project co-ordinator's reply was cursory, failing to provide any further insight on either of these points.

This example and the issues raised by the 'governance process' initiative underlined the difficulties associated with open agenda setting. In order to address these difficulties, the researcher started a web log on governance together with the regional catalyst for the West Midlands <http://soagovernance.blogspot.com/2006/02/welcome-to-soa-governance.html>

The first entry, written by the researcher, was designed to emphasise the difficult group dynamics that underlie processes where the appointment of authority is in question (appendix 2). The second entry was a case study based on a report written by the Working Group on Internet Governance (WGIG) who had been commended by their appointees (the United Nations) on the exceptionally open and inclusive methods of collaborative communication and decision-making the group had put in place (appendix 3).

The concertation meeting organised by the Commission in early February 2006 provided a good opportunity for DBE project partners to see sustainability and governance issues in the context of the cluster of projects that form the Innovation Ecosystems Initiative (IEI), although internally, tensions within the DBE project were still running high. Direct contact with other project participants facilitated inter-project networking and brought home the reality that the future of digital ecosystems lay in the hands of these projects and not the DBE project. At the meeting it became clear that the DBE Project Officer wanted the open consultation process initiated by the DBE to incorporate all members of the IEI cluster of projects. Given the difficulties that had been experienced with respect to trying to achieve a basic level of open dialogue within the DBE, this constituted a serious challenge. In addition, individual projects were not used to working together to create joint forums in this way. Subsequent to the concertation meeting it was clear that from a management perspective, seeking out members of other projects and asking for their

collaboration brought to the fore issues of trust. Given the competitive climate that surrounds European Commission funding and the significance that partnering and alliance forming holds in that context, perhaps this was not surprising. However, what was clear was that inter-project communication would not just happen 'naturally', but would require a robust framework for communication and participation if barriers presented by lack of trust were to be overcome.

Following the concertation meeting, a business domain meeting was held in London, in March 2006. The meeting represented the first occasion since the annual review that members of the business domain had sat down with one another. Fundamental rifts within the PMEB were still in evidence, but attention was now focused on the recommendations that had been made in the report of the 2nd annual review that by this time was available to the consortium. Following the commission's recommendation that sustainability and governance should be treated separately, the researcher provided a social science contribution at this meeting in the form of a presentation on governance that attempted to underline this distinction. Using the WGIG case as a basis for discussion, she emphasised how questions of mandate, representation and membership were key factors in establishing a strong basis for communication and debate, as were the need to develop shared definitions, in particular, of governance. On this basis, the researcher sought to obtain a mandate in the form of agreement from all meeting participants that a wholehearted effort should be made to establish an open consultation process. Despite this attempt on the part of the researcher and the clear and numerous recommendations in the 2nd annual review report that an open consultation process should be started, there was still resistance, particularly from the project co-ordinator, who insisted that the process would be ineffectual. A lack lustre form of mandate was achieved and it was agreed that 2 new discussion threads would be started: a 'who we are' thread designed as a means to make individual project participants visible to the public domain <http://www.digital-ecosystem.org/Forums/WhoWeAre> ; and a thread that aimed to open out internal meetings and discussions regarding sustainability, and provide an open

forum for agenda setting <http://www.digital-ecosystem.org/Forums/dbesustainability> .

The overall aim of both threads was to allow innovation ecosystem stakeholders to identify themselves using the 'who we are thread' and then take part in open discussions taking place on the sustainability thread.

Another significant outcome of the business domain meeting was that the focus of discussion shifted from governance to sustainability. The author assisted in this process by, at the request of the meeting, providing a short presentation on governance that served to emphasise this distinction. As had often proved to be the case within the business domain, tensions between participants were reduced through focus on regional and SME concerns. From a stakeholder perspective, these were not the only concerns represented by meeting participants, industrial and research partners were present too. However, the interests of these participants were not discussed and as a consequence the subject of exploitation therefore remained obscure. The realignment of business domain interests away from governance toward the sustainability of regional and SME engagement was reflected in the work that went into planning how the rejected sustainability deliverable would be re-written. The author was asked to contribute a section defining sustainability and describing how to carry out a stakeholder analysis. Once finished, with its detailed contributions from each of the DBE regions describing their sustainability requirements and plans, the deliverable constituted an important part of gathering stakeholder requirements and concerns, particularly at the regional level.

Political conditions within the project inhibited efforts to generate an open consultation process capable of drawing in the full scope of stakeholders with a shared interest in ecosystem governance. Therefore, an alternative approach to gathering data for the stakeholder analysis was required. Since the position of the regions and SMEs was captured as part of the re-submitted sustainability deliverable, the researcher decided to contact the computing domain and prompt a sustainability discussion among the developers. This research intervention was motivated by the following recommendation from the DBE 2nd Annual Review Report:

“The responsibility for the code sustainability should be placed with the Computing strand, paying attention to the findings of the social science group within DBE Science. (DBE 2nd Annual Review Report, Recommendation 4, p. 47)”

“the long-term survival of an open source project is based on the existence of a core developers community, that can only be formed by a nucleus from the original software developers” (DBE 2nd Annual Review Report , p. 43)

In order to assist the developers in formulating an agenda for their own sustainability discussion, the researcher compiled a series of questions that she e-mailed to each computing partner (appendix 4). The focus of these questions was on obtaining computing partners' opinions of how sustainability - in the sense of an actively maintained and developing codebase - could be achieved. All but one computing partner replied to the questions and from these responses the researcher formulated a discussion paper that she circulated among the developers (appendix 5). In order to follow up on this consultation the researcher attended a computing domain meeting where sustainability issues were discussed. Some fundamental decisions were taken at this meeting, for example it was agreed that all contributions to the coding effort should be voluntarily made. At the suggestions of the researcher, it was also agreed that an organisational structure for the developer group should be put in place that could exist independently of the project structure. To this end, it was decided that 2 leadership roles were needed: a synchroniser for the execution environment; and a synchroniser for the development environment. These decisions were documented as meeting notes that were circulated among developers (appendix 6). In order to move these decisions forward, the researcher designed and oversaw a nominations process by which a developer was nominated to each role respectively for a trial period of 2 months. By the time the trial period came to an end, the researcher was no longer working on the DBE project.

The following table lists the events and research actions described in this section in chronological order. It also provides a list of documents that each intervention required. The appendix to this report contains a selection of these documents, listed according to the number indicated in the right-hand column.

Table of events and research actions

Date	Events and research interventions	Research interventions - documents	Appendix Number
29.12.05	Open consultation discussion thread started by project manager		
19.01.06	DBE 2 nd Annual review		
23.01.06	Annual review web log and discussion postings	Draft postings	
24.01.06	Governance process posting	Governance process postings	
07/02/06	E-mail to project co-ordinator in copy to DBE consortium	E-mail	1
27.02.06	Governance web log started – entry 1 Governance web log – entry 2		2 3
09.02.06	Concertation meeting		
01.03.06	Business domain meeting	Presentation	
06.03.06	'Who we are' discussion thread started	Discussion thread seed posting	
27.03.06	Sustainability discussion thread started		
31.03.06	Consultation with computing domain begins	Short questionnaire	4
27.04.06	Computing domain discussion agenda	Discussion agenda document	5
04.05.06	Computing domain meeting	Presentation	
09.05.06	Computing domain meeting notes sent to mailing list	Meeting notes	6
04.07.06	Leadership election process designed and overseen	E-mails to developers	

Many of the questions that SMEs raised with respect to governance were extremely relevant to the internal processes detailed in the previous section. The focus of the SMEs was on if and when the DBE would be consolidated as a legal entity or organisation that would exist beyond the end of the funded life of

the project. They were keen to know what kind of organisation would be created and whether the legal identity would be recognised at EU level and in other world economic blocks. One of the benefits of the DBE regulatory framework is that it has the potential to lessen some of the legal barriers that prevent SMEs from internationalising their business. A strong DBE identity, constituted in such a way as to overcome such barriers and harmonise the differing, sometimes contradictory regulations relating to business law in EU member states was seen by SMEs as a potential benefit of associating themselves and engaging with the DBE (Gow et al, 2005:32). As well as the legal benefits of consolidation, SMEs were also concerned about privacy and security issues within the DBE and perceived a legally defined DBE entity as capable of somehow underwriting data transfer processes.

However, SMEs were quick to foresee the difficulties inherent in establishing a governance framework and constitution sufficiently flexible and extensible to account for the potential growth and diversity of the DBE network. Whilst SMEs could see a clear link between sustainability, governance and the legal constituency of the DBE under either European, national or local law, they also recognised that it was hard to envisage how a single organisational or legal entity could account for all aspects of the DBE: from security; to the regulatory framework; to associations with standards bodies. For example, the exponential growth of contracts and legal bindings implied by carrying out business via the DBE appeared to one SME as “something that would benefit from a common framework” (Gow et al, 2005:14). However, one of the inherent advantages of SMEs in the market for software compared to larger companies is their agility. Whilst consolidated legal frameworks might lessen some of the risks associated with entering into contracts, SMEs were keen not to lose the flexibility that comes from entering into business on the basis of informal agreements and ‘handshakes’. Whilst recognised as not being sufficient for underwriting larger contracts, SMEs nonetheless depend on this kind of business practice to speed up their customer response time .

In addition to acknowledging a range of formal and informal contractual arrangements, another important consideration for SMEs’ agility was their

capacity to provide technological solutions within a time frame designed to suit their clients. An important factor within this was the use of open source licensing. By having access to source code and therefore the ability to design and implement technological solutions as and when required, small software houses are able to fix bugs and develop integration schema according to their own timeframes. With proprietary technologies, especially those produced by large technology companies, the SMEs are forced to wait for the next version release date for a system and even then, they cannot guarantee that the specific bug or integration issues they are interested in will have been addressed. Bypassing these limitations allows them to remain customer-oriented, pushing out solutions according to their customers' timeframes (D27.2: p45).

For the open source SMEs, sharing knowledge and source code is not only a question of licensing. However, with respect to continued engagement, concerns were expressed about the possibility that larger companies might attempt to 'carry off' DBE developments into the proprietary domain. One SME related this concern to the constitution and balance of interests represented by a potential DBE entity "...it's a sensitive issue because you can lose people at that point if there's suddenly a board full of IBM people or people who aren't traditionally seen as good community members" (M32.2 :p.21). This prospect was a clear disincentive for SMEs to dedicate their limited time to making contributions to code development (D27.2:p.52). Rather than simply a question of licensing, concerns were also apparent with respect to the degree to which the DBE was actually committed to open code development and knowledge sharing. Driver SMEs were not given access to DBE deliverables or communications and it was not until fairly late into the project that developer mailing lists and forums were fully opened out.

In terms of styles of governance communication and organisation, SMEs drew attention to the variety of business models and practices that they mobilise collectively and which constitute another inherent advantage they have over larger companies. Focussing too intently on a single organisational model or legal constitution could have the effect of "shutting out" a group of people or an

area of expertise (M32.2:p.16). As such, reflecting the diversity and flexibility of SMEs within governance arrangements emerged as a key priority.

3.1 Towards a categorisation of SME concerns

It is clear that some stakeholders have more influence than others in the debate on governance. In situations where this is the case, a multi-stakeholder consultation and analysis can prove extremely important in terms of bringing voices and opinions into a process in which they have been marginalised. In this sense, building up a multi-stakeholder picture of digital ecosystems is directly tied to the question of consultation. A multi-stakeholder analysis is not simply a process of naming those groups and individuals who have a current or future interest in digital ecosystems. It is a question of speaking to stakeholders and encouraging them to express their priorities and concerns with respect to engagement and participation in digital ecosystems. It should be made absolutely clear that speaking on behalf of stakeholders or surmising what their opinions may or may not be, instead of engaging them in consultation, does not constitute a valid contribution to a stakeholder analysis. Given the SME-oriented focus of the DBE, particular attention should be given with respect to feedback on DBE governance provided by SMEs. By their nature, SMEs are extremely diverse and the tendency to generalise their behaviours in lieu of a due process of consultation is strong. This is particularly true where SME opinions hold a political weight, as they do in those European projects designed around the Lisbon objectives.

A second point to consider about multi-stakeholder analyses is that there is a tendency only to include human stakeholders where, in effect, organisational, regulatory, constitutional, infrastructural and technological priorities can also be important. For example, the regulatory framework for digital ecosystems carries with it some specific governance requirements that will influence the way that ecosystem based e-business interactions will be carried out. Putting technological concerns before human concerns can prove controversial, however, once again the issue is one of balancing interests and in each

instance, remaining true to an agreed set of constitutional principles or priorities can constructively underpin processes of decision-making or debate.

Combining a taxonomical approach with multi-stakeholder consultation and analysis provides an interesting balance between stakeholders and the broader principles at stake. As researchers in WP32 have proven, generating a taxonomical classification of dimensions and building blocks, which are then qualified or tested through stakeholder consultation, can produce interesting results. Maintaining the process of iteration between classification and consultation ensures that any frameworks applied evolve according to the needs and aims of stakeholders.

The fundamental importance of a shared strategic vision comes to the fore. Consensus building is a core aspect of community building and it is clear that hidden agendas relating to future strategic directions can have a damaging effect on a nascent community or group, particularly where those agendas involve changes to core values. From the DBE experience, key concepts can be derived from this experience, such as the importance of consensus-driven constitution building, in which stakeholders develop core values and strategic priorities together. Consensus building is a slow process and needs to be inclusive if a true balance of interests between stakeholders of varying standing and influence are to be genuinely part of the process. Particular attention needs to be paid during the process of drafting governance principles and codes of practice to ensure that straightforward opportunism of those that were 'there at the start' is not allowed to take precedence over a framework born of a genuine balance of interests. Simply imposing a regime or model without undertaking consensus-building activities carries with it risks and can only be successful where substantial trust exists between participants. It is important that the values and priorities developed as a result of consensus building are constitutionally embedded in documents such as a bill of rights or manifesto since regular reference to these can prevent fundamental rifts from recurring in the future. For example, if a digital ecosystem is to be safeguarded from domination by either a single powerful actor or a cartel of such actors, then a

principle of non-domination needs to be instated constitutionally and a policy for adhering to this principle needs to be put in place.

A valid and respected process of decision-making requires a strong and inclusive framework of communication. On this point, the admittance of SMEs to discussions concerning the future of DBE governance plans is a fundamental requirement of future sustainability. So far the viewpoints of SMEs have been included through a process of consultation and engagement carried out by DBE regional catalysts and social science researchers. However, for knowledge sharing to occur on an equal basis, a robust adherence to open and transparent decision-making processes that are inclusive and follow due process are essential to the stability and credibility of the DBE constituency.

Questions of transparency are further underlined in the DBE 2nd annual review report in the context of exploitation plans of industrial partners.

"As a consequence [of the conflict in the consortium around sustainability and governance issues] there is no clear commitment from the industrial partners in any future exploitation activity, either at the basic code technology level, or at the scientific level, or at the business ecosystem level" (p.42)

Questions of transparency and industrial exploitation become confused where exploitation is not focused upon developing the exploitation of a technology developed by a project, but on a form of 'project brokering' that appears to be taking place at a level above the individual project. Large industrial companies are traditionally understood to be in fierce competition with one another and where questions of one company encroaching on another's market share are concerned this is indeed the case. However, in the field of public funded projects, there are other ways that companies can serve their own interests and profitably collaborate with one another without market share becoming an issue. By playing the role of 'project broker' industrial partners can carry out strategic alliance formation where access to individual project outputs and resources are provided as a favour which it is expected, will be returned. In the context of

European Commission funded research, the lack of transparency surrounding this form of project exploitation creates problems both for the commission and for project leaders who are not affiliated to large corporate companies.

DBE research on SME engagement practices concluded that credibility and attunement were central to the process of engagement in each of the 3 DBE regions. These concepts, together with the concept of trust identified as fundamental to the development of the regulatory framework, are extremely significant dimensions not only to engagement and the regulatory framework respectively, but also to governance and sustainability. Recognising that trust and credibility are context and stakeholder specific has been a key contribution of DBE social science research. These findings underline the need for allowing diverse regional governance models to emerge that are attuned to the specific priorities of regional stakeholders. Light coordination and the potential for alliance formation between regions and regional bodies presents opportunities for knowledge sharing and collaboration without the burden of centralised management mechanisms or priority setting.

From the experience of the DBE Developer group it seems lightweight organisation and synchronisation are more suited to the development of flexible, distributed infrastructure than rigid, centralised management structures. Maintaining the open source ethos that if a component is useful it will survive, if it is not it will die out, keeps the development of the infrastructure closely bound to movements in software development, the interests of open source developers and the business viability of proposed developments. These priorities were of greater interest to DBE developers than the need for association, alliance formation or organisational consolidation. However, particularly with respect to standards and the open source movement, alliance forming could play a key part in DBE sustainability. The difficulty lies in ensuring that alliance formation does not compromise constitutional values, otherwise these activities could lead to fundamental rifts.

Clearly, to participating SMEs, knowledge sharing and technology licensing were key concerns. Being able to fully participate in DBE development

activities as well as other areas of communication not only increases the credibility of the DBE in the eyes of SMEs, but ensures that the infrastructure reflects their needs and requirements. One of the unique qualities that the DBE has to offer is that it allows SMEs to define a technological and business environment according to their own requirements. For this quality to be fully realised, the regulatory environment of the DBE needs to actively protect the interests of SMEs and work to prevent those interests being overtaken or monopolised by larger players.

One of the architectural principles of the DBE is that technological lock-in at the level of hardware, languages, standards or protocols should be eradicated as far as possible, or at least, kept to an absolute minimum. Therefore, changes in technology development methodologies and approaches that would ordinarily undermine other forms of infrastructure should, in principle, be embraced by ecosystem communities. For this to be possible, governance principles and codes of practice need to remain 'technology agnostic' and alliance formation undertaken in the knowledge that social relationships can exhibit the same level of lock-in as technological ones.

4. The DELPHI Process²

In a business domain meeting held in Berlin at the end of November 2006, the idea to approach the sustainability issue one more time before the project end, and the possibility to use the Delphi methodology to do this, emerged. This methodology has been seen as a possible solution to the problems emerged in the public consultation process; Delphi method, in fact, thanks to its multiple iteration helps in achieving a consensus in a “at-a-distant” setting. People are enabled to express their view publicly, by in total anonymity; at the same time everyone can see other opinions but without being influenced by personal characteristics. As we’ll better describe in the next paragraph, Delphi is a useful method when we have strong separation in a group or a not so high level of trust among stakeholders.

The primary aims of this activity were to:

- Clarify issues and positions on DBE sustainability and governance models and approaches
- Overcome lack of response to online forum
- Resolve apparently conflicting views

With reference to second point, this activity has to be taken in consideration together with the online consultation process lead by LSE researchers starting in February 2005 (<http://www.digital-ecosystem.org/Forums/WhoWeAre> and <http://www.digital-ecosystem.org/Forums/dbesustainability>). The activity’s aim, in both threads, was to allow ecosystem stakeholders to identify themselves using the ‘who we are thread’ and taking part in open discussions on the ‘sustainability thread’. The introduction of these threads was supported by project-wide e-mails and through discussion at domain meetings, but the participation was not as high as expected. The lack of responses received proves that an open dialogue on those issues were difficult. A supplementary approach, based on face-to-face interview to different stakeholders took place

² Excerpt from the deliv 34.6 Delphi Report

too. Particularly SME and computer partners have been interviewed on sustainability issues.

4.1 Findings on structuring and governance structure

a) Community structuring and governance structure

When answering to the question “To what extend you think the DBE community needs structuring in order to survive? Will structure be a pre-requisite for progress, or can structure be left to emerge from practice?”

The majority is in favour of the last. Indicating that a structure or a governance model should emerge form community practice.

Some think structure is only needed at the beginning, before the community become self-sustaining. Among already existing model, or element models for a self-sustaining community responded come up with a wise list of possible models to adopt. Open Source communities is the general principle frequently cited. The complete list is the following, but no agreement emerged on those model except for the World Wide Web. (Debian x3, Jboss x2, Apache x2, Linux, MySQL, PHP, Ututo, dotnetnuke, Mozilla, KDE, Canonical, rosetta net, ebXML foundation, Wikipedia foundation, Eurocities, MySpace, Bebo, YouTube, www)

When the respondent pass from expressing their view of governance structure to the possibility to have a DBE legal owner, they show to be evenly split.

Those definitely wanting an organisation want it to be lightweight and to have limited remit and not to be the ‘owner’ so much as the servant of the community, then several see a legal owner as necessary in particular for DBE credibility: “Absolute legal ownership should be considered with care, as it may raise the issue of product liability, etc.; but some form of legal entity would be desirable to maintain credibility and professional image”.

As the answer below show, those wanting an entity, mostly talked of non-profit and foundations model rather than commercial.

Some strong statement against the legal entity are also present:

“A legal entity too soon would bring a few short-term benefits but could endanger the whole initiative”

“No not yet - it is LGPL and CC, so no need of legal entity yet”.

“No, no a legal owner would represent a form of centralization, and this is not compatible with the DBE approach.”

DBE project partners will guarantee the core project maintenance and they will provide the last layer support, so the customer may be confident because they know that the SW creator is there. A distributed, layered approach to maintenance and user support will be established by an interface between the developer group and user communities to ensure good communication and feedback and not by a license fee for development built into business model.

The resources and organisation of the DBE technical assets and infrastructure will be maintained on one hand expanding its applications and exploring various model of sustainability, on the other hand via a self sustainable open community of users and by user enterprises which will pay to the community of SW enterprises to develop services for them to make business.

The resources and organisation of the DBE technical assets and infrastructure will be maintained by a community of contributors, following the open source philosophy, which will propose changes and new features that will be a good source for the developer community as students and part time people.

It will be very important to leave the free software community to improve it and adopt it. DBE will maintain its open source strategy, some governance will be described (e.g. procedures to include new modules, etc.) and some core developers will be supported (remunerated) by open source developers.

The existing EU projects will maintain for the next 2 years and provide developer support. DBE will be utilised in further projects and parts of the code, and by SMEs in the regions.

DBE will be maintained thanks to a multi step approach in which a community version, totally open and free of charge, will be produced and it will be the big community who introduce new features/projects into it following a total open source philosophy.

A particular formula of maintenance will be personnel time donations of:

- Small and large software companies;
- Economic development agencies of local and national governments;
- University students, researchers, and faculty;
- The various stakeholders;
- Individual developers, that will feel motivated to participate for free, according to the open source model.

A lightweight organisational structure will be required to mirror the decentralised nature of the infrastructure and assure that services implementation will be decentralized. There will be adopted a federated governance combined with a network/community model. A Technical committee of elected representatives will coordinate the technical maintenance, in fact maintenance of the core technical infrastructure will need to be organized and systematic and the DBE technical assets (hardware, networks) will have dispersed ownership. Open Source structure will donate funding of a few full-time developers to act as maintainers.

The DBE will need to raise to a level of significant community of users and applications for the rapid establishment of a maintenance structure.

The characteristic of the organization will be made by individuals with an open self-governance structure with people appointed by the community itself. It will be being in contact and open to a continuous sharing with local development agencies and policy makers for SME development, supporting running deployment project and new development of the DBE infrastructure.

DBE maintenance and development will be supported by a network organisation that will be governed with instruments of sharing strategy and involvement of the various actors.

Businesses will want and expect something "concrete" to come out of the DBE project and digital ecosystems in general. It will be needed a foundation to support the DBE technologies and the overall DBE concept.

The DBE will need a group of supervisors to check the misalignment of the DBE practices, a legal support team and a group of volunteers that will be willing to spread the DBE around the world. Some form of legal entity will be desirable to maintain credibility and professional image.

Time will be necessary to understand what the "entity" is before worrying about making it legal or not, in fact, a legal entity established too soon will bring a few short-term benefits. A structure will be established only and when will agree on the governance, the community and the participation of contributors. The governance of the project will be defined through a participatory process and not by imposing a legal owner, that will set rules without consulting the communities.

There will be already plenty of foundations for open source projects it will not be too late for the DBE. Creation of ownership organizations will contradict the nature of DBEs, that will have to be flexible, adapting to the changing needs of stakeholders and the needs of changing stakeholders.

On the other hand, the DBE is LGPL and CC, so there will be no need of legal entity, it will be enough to transfer control to the running network of excellence (OPAALS) that will develop further concepts on the DE and will enlarge the community of researchers.

5. Governance and Constituency: some proposal

In the presented scenario is very difficult to provide a single and definitive answer to the issue related to the governance and organization of the DBE constituency. A controversial discussion has limited contributions from partners and at this stage it will be impossible to reach a consensus on the issue.

Several possible solutions are in front of us and the Delphi process helped to gather insights far from the internal project “trends” and should be taken in strong consideration for our decisions.

We need to consider that the efficiency of any governance instruments is linked to a large extent to the motivational basis of the involved individuals. Governance instruments needs also to be implemented for controlling, supervising and monitoring purposes as well as to guarantee the transparency of all structures involved and must be adjusted as increasing complexity and the number of members increase.

Basically, three forms of governance are applicable

- direct governance - inspection of behavior
- indirect governance - determination of output based on given goals
- social governance (social control) – comparison of conformity to certain morals and cultural rules

In the complex environment of the DBE even if direct and indirect monitoring may be possible, direct and indirect control is hardly feasible given the heterogeneity of the stakeholders involved and the different socio-political implication of the DE decisions.

Is true indeed that in the DBE the relevance of concepts of social control increases. In particular, social control is based on the concept of trust, which is defined as the voluntary input of risky assets under the absence of explicit contractual protection and control. Then trust becomes a necessary prerequisite to assure the existence of flexible organizational structures, which is why it is identified as a key factor for the successful, and growth and operation of any open source project.

Furthermore, trust as a concept should guarantee that the partners are able to manage and organize processes at least partly independently.

Instruments for the practical application of social control can be identified particularly in relation to the level of objective and personnel management. Specialized social norms and frameworks are able to support the genesis of trust in and among organizations.

For the implementation of social control, different governance instruments can be introduced such as the activation of common cultures among net partners with homogeneous value concepts.

The value concepts and agreed ethical values are definitely a starting point to find a way to establish a common framework of cooperation between the stakeholders.

5.1 Peer Governance

The nearest governance model that follows the social control mechanism is what is defined as “peer governance”.

Following Bob Jessop:

"[Peer] Governance is defined as the reflexive self-organisation of independent actors involved in complex relations of reciprocal interdependence, with such self-organisation being based on continuing dialogue and resource-sharing to develop mutually beneficial joint projects and to manage the contradictions and dilemmas inevitably involved in such situations. Governance organised on this basis need not entail a complete symmetry in power relations or complete equality in the distribution of benefits: indeed, it is highly unlikely to do so almost regardless of the object of governance or the 'stakeholders' who actually participate in the governance process. All that is involved in this preliminary definition is the commitment on the part of those involved to reflexive self-organisation in the face of complex reciprocal interdependence."

The requirements of the DBE organisations can be perfectly reflected in such an organisational model, as the fundamental principle of peer governance is

the self-regulation of peer groups, which by definition can create new use value for the commons, and it can be easily applied to interdependent and multiple stakeholders.

Literature identifies four conditions required to make peer governance applicable successfully:

- (a) simplifying models and practices, which reduce the complexity of the world but are still congruent with real world processes and relevant to actors' objectives;*
- (b) developing the capacity for dynamic, interactive social learning among autonomous but interdependent agencies about causal processes and forms of interdependence, attributions of responsibility and capacity for actions, and possibilities of co-ordination in a complex, turbulent environment;*
- (c) building methods for co-ordinating actions across social forces with different identities, interests, and meaning systems, over different spatio-temporal horizons, and over different domains of action; and*
- (d) establishing a common world view for individual action and a system of 'metagovernance' to stabilise key players' orientations, expectations, and rules of conduct*

5.2 Open Organisations

It is clear that DBE resembles more and more an open organization, that is functional organizational structure that people can choose to adopt in part or whole when working. An Open Organization is created by carrying out certain defined processes. processes are functional: people must carry them out continuously, (there are never 'fixed' states). An Open Organization is thereby a self-organizing system. Open Organisation are established over eight functional rules

1) Charter

An Open Organization must have a published written charter which sets out how it chooses to implement, given its particular circumstances, the processes (and therefore values) which make it an Open Organization. Within the

organization, people form Working Groups to take on particular tasks. Each working group must also have a written published charter which must be compatible with the organization's charter. It must define the working group's methods of implementation and measurable goals for its chosen task(s). It must be approved by the organization as a whole.

2) Open participation

Anyone can work in the organization if they agree to the organization's charter and have the necessary skills. This means that full advantage is gained from people's available skills and enthusiasm. Open participation is based on the 'trust first' principle: the underlying premise that people are sociable and want to contribute to society, and should therefore be trusted to do what they undertake to do, knowing that they are accountable for what they do. The 'trust first' attitude is always maintained and calibrated to the circumstances.

3) Self-management

The people in an organization within the working groups, who do or will contribute to implementation work on the different tasks, decide amongst themselves how, what work is to be done in their decision-making. In this way, work is guided and done by those who know it best. It also means that those doing the work, who are immediately affected by working practices, are able to decide on those practices themselves. Implementation work is defined as the various steps taken after the design stage (discussion, advice, consultation) involved in the production or maintaining of a task. Making a summary of a discussion about a task from the design stage that enables the implementation of a task to begin is also implementation work.

4) Best practices

Life is a very functional business: if a job is worth doing, it is worth doing well. For any particular task, there is usually only a handful of commonly recognized best practices and people with expertise in that task will probably be familiar with all of them (but see diversity) It is easier to seek out best practices if there is public ownership of knowledge.

5) Respect for skill

One kind of knowledge can be gained, for example, by reading a book, or a transcript of a discussion. Another kind, which is usually called 'expertise', 'experience' or 'skill' in a certain activity, must be acquired by working with someone who already has this expertise. To benefit from expertise, we have to first acknowledge it in those who have it and give proportional attention and weight to their views in decision-making. By doing this we release the full power of everyone's abilities rather than adopting a superficial notion of equality. We grant skilled people a type of power, in proportion to their knowledge, (rather than giving them the right to dominate us or others). Respecting skill not only allows a group to function and solve problems better and more quickly, it also allows those with expertise to teach others by example. Thus, their knowledge is passed on, and can be publicly owned as well.

6) Public ownership of knowledge

The knowledge produced by an organization, including its internal debates and the lessons learnt from them, must be recorded and maintained in publicly accessible archives, so that people inside and outside the organization, and in future generations, can benefit from it. This history should also be organized and presented in a way that minimises the difficulty of learning from it. This allows knowledge to circulate where it is needed, providing the maximum benefit to the organization and to society. The result is public ownership of knowledge. Both respect for skill and public ownership of knowledge require transparency.

7) Diversity

Different approaches to carrying out tasks and solving problems can coexist (without hindering one another), and learn from each other. There can be cooperation and collaboration between different working practices. Diversity increases the probability of success in reaching goals and of the discovery of new working practices. Diversity also allows us to challenge and improve the best practices in any speciality.

8) Affirmative terms

The use of only affirmative (positive) terms in describing both goals and ways of working. Defining always what an Open Organization and its Working Groups are for. Otherwise terms such as 'non-hierarchical' and 'destroying' might be used to define organization and work. The first term is practicably useless and meaningless, as it is impossible to build positive, creative structures and practices, based on the conceptual idea of the negating of a structure. Furthermore, despite the opposite intention of the term 'non-hierarchical', the concept of 'hierarchy' is conceptually entrenched by repeatedly referring to it - even in a negated form. The second term, 'destroying' could not lead to work that furthers the organization's charter.

5.3 Possible actions

The tension in the DBE consortium between building an “house” for the developers and the stakeholders that have invested and contributed to the development of the project and the *laissez-fair* approach that builds upon the idea that an emergent structure of organisation should be happening following the evolution of the deployment and uptake of the DBE technology and methodology needs to find at least a partial reconciliation.

Results of the Delphi process says that:

Success, moreover, means for the participants:

(...)

- When taking in consideration possible governance structure, a lightweight organisational structure is seen as necessary at some point to mirror the de-centralised nature of the infrastructure and assure that services implementation will be decentralized. The form of an association emerge as possible solution. (...) An important role will be carried out by development agencies and regionally funded projects.*
- possibility to have a Technical committee of elected representatives*
- Participant see the creation of a road map as an important outputs of DBE project, they assign to project partners the role of designing it*
- In term of needs structure, some confusing statement are still present. With regard to this issue, probably a third round of Delphi would be*

beneficial, but the time shortage makes it impossible to do this. Generally respondent agree that a very small and open organisation will be enough to act as guardian of the critical aspects such as legal rights. They indicate that can be largely voluntary and probably will be needed only for some years.

Following the decentralised approach of the project and the strong regional impact and investment done by the DBE itself and the regional catalyst and given the fact that an ecosystem survives on its diversity of species and organisation, we believe that initial core components of the dbe governance should be identified and established at regional level as national/regional/local chapter of the DBE. The local chapters will be organised in a more easy way and with an organisational structure that will be more attached to the local representation needs and being build around a consistent and small group of stakeholders would easily adopt models of peer governance.

Once a significant numbers local chapters are established an overarching organisation will and could be established adopting what has been proven as an effective means of organising the work and the governance of the DBE at local level.

It is clear that such an process will take time and it might also not happen given the fact that uptake of DBE approach needs, at least from a local development point of view, a time of engagement that is not short term.

But is this discontinuity between the end of the DBE project and a light organisational structure based on an emergent local association we need to preserve the values and approaches that have distinguished the DBE approach.

One possible solution at this stage, and possibly the most reasonable, is a formal handover to OPAALS (in which there are 70% of the DBE partners), being the initiatives that by objective is trying to institutionalising the DBE research domain. OPAALS will run for the next 3 years and it will provide a the needed time to observe and organise the emergence of local dbe chapters.

On the same time OPAALS will provide a good environment to organise a de-facto technical committee for the DBE technology management, This is really the most needed organisation as, given the raising interest on the DBE a

recognised technical excellence and roadmap is what assure the continuation of the development and the sound management of the contribution in the FLOSS approach. We then propose to establish such Technical committee under the OPAALS project but through an open election process among the contributors of the DBE development. The technical committee first action will be the publishing of a clear technology roadmap of the dbe for the next two years.

This handover should not be seen or used just to postpone decision but an important chance to reach agreement and decision of the DBE constituency building, governance models and organisational approach in a more inclusive and trustful process, something being impossible within the DBE project

6. CONCLUSION

This is a moment of a challenge to the capacity to make DBE an important part of the future networked information society. The DBE approach, vision and technology offer us the opportunity to enhance the productivity and growth of SMEs simultaneously improving a more democratic use of technology and knowledge.

These advances might be at risks as incumbents are pushing and pulling law, technology, and markets to shape the coming century in the image of the one that passed, as Benkler writes.

The DBE represent a common infrastructure to allow SMEs and regional development strategies to transition into a more inclusive and sustainable economic development model.

This document rather than being a novel thinking on the governance and constituency plan of the DBE has collected the work done in the governance discussion and in the internal reports together with the outcomes of the Delphi process. We have made clear our understanding of the DBE growing more and more as new public common digital space which needs an inclusive and open approach to its management and evolution.

It also tries to answer to the request of the reviewers as expressed in the second annual review report

R5 The important work identified in Section 7 of establishing a governance model for the ecosystem, including social aspects like codes of conduct, spans the areas of politics and business and is of fundamental interest to other stakeholders in the Innovation Ecosystem Initiative (IEI)¹¹³. It is therefore imperative that these fundamental regulations are produced in an open and inclusive process respecting the contributions from social science, business, political bodies, regions and other stakeholders of the IEI. The process should be described within

two months and evidence of converging deliberations visible after not more than six months measured from the date of this review report.

As stated before within the DBE consortium the issues related to DE governance, organization and DE follow up have been always conflicting arguments where opposite views and distant approaches could never be brought to a common point of consensus. The discussion has been “suspended” for several months hoping that different views along the timeline of the project activities could be reconvened to a single common agreed position. So we were forced to follow a different path that lead us to a different approach towards the request of the reviewers and to have the governance and organisation decision emerging from the discussion and “remote” gathering of the requirements from the constituency.

Main points arising from the work done in the last 12 months on the issue of what's next for the DBE have coagulated around the needs of a light organisational structure, the management and evolution of the technology developed.

In spite of the discussion and diverse point of view what seems at this point more reasonable for the project, rather than rush is last minute decisions on organisational structures, to delay the process and transferring in the more inclusive environment of the Opaals project. At the same time the constituency will overlook and help the establishment of regional/local chapter following the recognised set of values and approaches expressed several times within the DBE project.

7. Appendices

Appendix 1 – Governance web log (entry 1)

The intricacies of governance discussions

Governance discussions are curious things. They suffer from the same issues that most political debates do. There is either complete apathy and lack of engagement or else they become volatile and all-consuming. This dynamic in itself presents a difficult decision-making climate. The tendency is to leap to conclusions or impose a model, simply to restore order or calm the situation, but this approach can create more problems than it solves.

One of the most perplexing things about governance discussions is that – all of a sudden - a political eye is cast upon *everything*. Coming up with a quick solution becomes an attempt to bump everyone into agreement without giving them time to read the small print. Delaying a decision and requesting more time for discussion becomes a deliberate stalling tactic designed to de-stabilise the group. This is not simple paranoia, nor is it the innocent plight of those who try and work for the common good. It is the harsh and sometimes bloody reality of group dynamics, when there are important decisions to be made by people who see things from radically different standpoints and wish to achieve very different ends. In emotional and psychological terms, the real-life toll of such battles on groups, organisations and individuals can be distressing to witness, and the slightly chaotic backdrop created can provide the perfect vehicle for narrow opportunism and self-interest.

Finding an alternative way forward is therefore an important consideration, especially in cases where governance discussions are inter-organisational and where those involved come from different sectors (i.e. government, business, civil society). In these cases, differences in priorities and desired ends are likely to be significant and firmly entrenched. In situations where the machineries of government and big business are placed in the same arena as small organizations or individual citizens, particular care needs to be taken to create a level playing field. Smaller players can easily find themselves worn out by political processes that have been overtaken by larger actors. They can lack both the time and energy to remain fully engaged, or worse still, find that they are being manipulated by the larger organisations, positioned to carry the brunt of

political fallout. This is not to say that political contests always come down to straightforward questions of size or scale. Trust and credibility play a significant role and can have a tremendous impact on the amount to which an actor is allowed to influence a situation. As long as this is acknowledged and appropriate safeguards and norms instated, there is no reason why different kinds of actors should not interact peaceably with one another.

This leaves us with the following two questions: what kinds of mechanisms help to mitigate some of the potential problems that can arise over the course of governance discussions and; what measures can be introduced to help promote an atmosphere of trust and credibility?

An example that might offer some assistance in exploring these questions - which will also open up some more specific issues relating to the governance of large technology infrastructures - is the example of the Working Group on Internet Governance (WGIG) . A case study of the process that the WGIG went through in order to establish a cross-sectoral discussion forum on internet governance will be the subject of the following 3 blogs.

Appendix 2 - Governance web log (entry 2)

Working Group on Internet Governance: Case Study 1

As a project that is attempting to create a large SOA infrastructure, the DBE project faces a number of significant challenges in addressing questions of governance, not least of which, is the challenge of how to establish an inclusive framework for carrying out governance discussions. A valuable case study that has the potential to assist the project in understanding the questions it faces is the case of the Working Group on Internet Governance (WGIG). In order to understand how the experience of this forum might help to support and structure discussions, I will provide some summary excerpts of the case taken from the [‘Background report: the working group on internet governance’](#) followed by some analysis. The analysis is organised around the question:

- What actions were considered necessary to enable the WGIG to carry out a structured discussion on governance?

The analysis will look at the ways in which this case both contrasts with and bears similarity to the circumstances facing the DBE. It will also point out some of the explicit

challenges facing the DBE regarding the development of a process for considering questions of governance.

The summary excerpts taken from the WGIG background report and their analysis have been divided up into four separate blogs. Excerpts from the WGIG background report appear first with the analysis of each following directly after.

Summary Excerpt from the WGIG Background Report

The Working Group on Internet Governance (WGIG) was set up by the Secretary General of the United Nations on the basis of the mandate given to him by the World Summit on the Information Society (WSIS) in December 2003. The group was made up of 40 members from governments, private sector and civil society organisations who participated as equals and in their personal capacity as experts in their own fields. The group was asked, inter alia,

“to investigate and make proposals for action, as appropriate, on the governance of the Internet by 2005, dealing with the following issues.

- Develop a working definition of Internet governance
- Identify the public policy issues that are relevant to Internet governance
- Develop a common understanding of the respective roles and responsibilities of governments, existing international organizations and other forums as well as by the private sector and civil society from both developing and developed countries”.

(WGIG Background report, section 1, paragraph 6)

These proposals were to be submitted in the form of a report and presented “for consideration and appropriate action at the second phase of WSIS.

Analysis: Mandate, membership and representation

In establishing the WGIG, there was first a question of mandate. Since, to some extent, governance is about process and the appointment of authority, the question of who should start a process and how it is organised becomes both a practical concern and a key question.

Questions of membership and representation were key to the formation of the WGIG because the forum had to be credible in the eyes of a diverse group of stakeholders.

Stakeholders of the WGIG were defined in terms of three groups: governments, private sector and civil society. The discussion forum had to be representative of these groups and demonstrate a balance of interest in order to demonstrate shared ownership of the technology and of the governance process. Members of the WGIG were asked to participate in an individual capacity, requiring them to detach themselves, as far as possible, from any affiliation that might influence their role in the discussion.

The third issue was one of 'what to do'. One meaning of governance which is derived from its Greek etymological roots is 'to steer'. Setting the aims and objectives of a group is equivalent to steering it in a certain direction, therefore, this becomes an act that also requires an appropriate mandate. Whilst a clear outcome was prescribed (a report from the group) the aim of the WGIG at this stage emphasised discussion and proposal, rather than action. Before they could act, proof that the group could work in a credible, democratic way and produce outcomes meaningful to a range of different participants was required and this could only come from direct experience.

Contrasting aspects of this case and the DBE

A key difference between the internet and the DBE concerns the relative maturity of the two technologies. The DBE is a new technology, still in the early prototype phase, whereas the internet has been in existence since the 1960s. Maturity is significant not only in terms of the technology itself, but also in terms of the interest groups that surround the technology. These groups are explicitly linked to the historical development of the technology. A shorter development history means that there has been less time for 'group formation' and for the expression of diverse standpoints.

Since the DBE is a new technology, the question of expertise is also more difficult to define. The WGIG were able to select its members from a pool of recognised experts, however, the question of DBE expertise is more complex. DBE interests and expertise relate to the respective scientific, technological and business areas that form the building blocks of the infrastructure. However, at this stage, expertise is also about the experiences of those who have built the infrastructure and taken part in early testing. This historical understanding of the technology's aims and purpose is extremely important, not only from an applied or technical standpoint, but also from the point of view of identity and community building.

In the case of the DBE, the basis for appointment and selection remains an important

question as does the need to both expand and refine understandings of who the stakeholders of digital ecosystems are.

Working Group on Internet Governance: Case Study 2

This is the second part of a case study written on the Working Group on Internet Governance (WGIG). The summary excerpts and their analysis have been divided up into four separate blogs. In each blog, the summary excerpt from the WGIG background report appears first and the analysis follows directly after.

Summary excerpt from the WGIG Background Report

Prior to establishing the WGIG, consultations took place which addressed questions of membership, representation and scope. The WGIG was called upon by the WSIS to be “open and inclusive” in its work and design a “process that ensures a mechanism for the full and active participation”. The consultations were therefore carried out in an ‘open mode’ allowing all actors involved in Internet issues to participate on an equal footing. The WGIG identified transparency as a key ingredient to ensure communication and members “worked extensively through e-mail, Internet Protocol (IP) based streaming video, bulletin boards and a discussion forum, and used the WGIG website to communicate with the public.” The working group were commended on the openness of its process and reported that many factual elements and corrections had been received via this process.

In addition, the WGIG held online consultations, open to all stakeholders, in parallel to each of its formal face-to-face meetings, in order that contributions were not limited to formal members of the group. External comments and contributions were seen as an integral part of this work.

In terms of setting a scope for the consultation, the WGIG agreed to take a broad approach and therefore to not exclude any potentially relevant issue. Through the discussion process, the group set some of the basic issues and looked for clusters of issues arising from the open consultation. Out of these issues, four main clusters were identified.

- issues relating to infrastructural issues and the management of critical resources
- issues relating to use, including network security

- issues relevant to the internet but with impact much wider than the internet such as Intellectual Property
- issues relating to capacity building in developing countries

The group also looked at the respective roles and responsibilities of internet stakeholders and produced 16 working papers describing these which it made available on the WGIG website for public comment.

Analysis: Working in an 'open mode'

The 'open mode' of communication and consultation adopted by the working group became a form of 'due process' for internet governance. Due process is a term taken from legal settings to describe the rules and procedures relevant to a particular set of circumstances and based on a set of principles. In the case of the WGIG, the open mode became both a point of principle and a set of practical arrangements which successfully generated a sense of legitimacy, credibility and inclusion.

Contrasting aspects of this case and the DBE

Again, when compared to the DBE, the question of maturity comes up. The amount of people who know about or are interested in digital ecosystems is limited (although it is growing fast). The amount who are willing to take part in an open consultation is even more limited. The degree of engagement in DBE open forums has not been high so far and there are a number of reasons why working 'in the open' presents a challenge. Firstly, moving to an open mode of communicating constitutes a cultural shift for project participants. Norms associated with working in a closed or open way are difficult to change since they have an implicit relationship to political processes. Asking for the approval of everybody 'in the open' is very different to asking for the approval of a few people 'behind closed doors' and those who are unfamiliar with the former approach seem to revert automatically to the latter. Secondly, the different attitudes, standpoints and interests of stakeholders are currently still held within the confines of a single project making for a lively, if slightly tense, political and decision-making environment. As the project draws to a close, the diverse interests underlying the participation of stakeholders become more transparent. Influential project stakeholders are understandably trying to organise participants into 'camps' based on their interests and so in terms of an open debate, there is intense concern over 'speaking out of line'. At a management level, divisions inevitably exist and there have been moments when the project has felt as if it were being 'steered' in different directions at the same time.

A major challenge for DBE governance will be the management of this transition and the development of a governance approach that allows diverse interest groups to co-operate and co-exist with one another, without creating a structural bias toward one group over another.

Working Group on Internet Governance: Case Study 3

This is the third part of a case study written on the Working Group on Internet Governance (WGIG). The summary excerpts of the WGIG Background Report on Internet Governance and their analysis have been divided up into four separate blogs. In each blog, a summary excerpt appears first and an analysis follows directly after.

Summary Excerpt from the Background Report on Internet Governance

One of the primary aims of the WGIG was to develop a working definition of internet governance and a considerable amount of time and effort was put into this task alone. In its description of the internet, the group decided that a history of the technology was both valuable and necessary. However, since a number of histories of the internet already existed, a reference was made to one of these instead of writing a new one. Nonetheless, some guiding principles and characteristics of the technology that emerged from the historical account were considered important to establish. The WGIG viewed the WSIS principle relating to the stable and secure functioning of the internet as of paramount importance and this influenced their priorities when considering characteristics of the technology.

The WGIG identified the following factors that any recommendation regarding arrangements for internet governance should take into consideration:

- the de-centralised and collaborative process of underlying technological development and core resource management
- the distributed / decentralised open architecture based on a 'network of networks'
- the open, non-proprietary nature of core Internet standards, protocol specifications available to anyone at no cost, reducing barriers to entry / enabling inter-operability
- the support of private sector competition in, by and large, enabling innovation and development

- the end-to-end principle or neutrality of the Internet which is chiefly concerned with the effective transportation of packets
-

Analysis: 'Describing the technology'

Given the many and diverse ways in which the internet could be described, the group had to make a decision about what key characteristics of the technology were relevant to questions of governance. In their case, the process of describing the technology was organised around a particular point of principle relating to stability and security that was understood by both the WGIG and the WSIS to be of “paramount importance”.

Contrasting aspects of the case

Describing the DBE infrastructure has been a challenge since the technology's inception. Looking at the example of the WGIG and its efforts to describe the internet it seems that taking a particular point of view or adopting an organising principle could provide a way of addressing this issue in the case of governance. The same organising principle of needing the infrastructure to be stable and secure could be as true for the DBE as it is for the internet.

A contrasting issue is perhaps rather subtle but it is nonetheless important when trying to arrive at a working definition. As a term of reference, 'the internet' refers primarily to 'the technology' in question (the 'network of networks') with government, business and social concerns lying, in a sense, outside the term. The term Digital Business Ecosystem was explicitly designed so that it encompassed these factors and so 'governance of the DBE' appears to carry broader implications. An added complication is that the commission has shifted its vocabulary and the DBE will now be merged into 'digital ecosystems' as both a term and a cluster of European funded projects. Again, this is to some extent a question of maturity. The names of technologies tend to shift and change at different points in their development history. Nevertheless, organising working definitions around 'digital ecosystems governance' will involve a process of naming the technologies concerned which may present some challenges for the DBE project. The identity and orientation of the project (e.g. towards industry or research objectives) will no doubt come into question during this naming process, as the DBE is positioned as either a 'commodity' or a 'public good'.

Interestingly, most of the key characteristics the WGIG used to describe the internet could be said to apply to the DBE as well. The characteristic that contrasts most starkly is the last one concerning neutrality. Whilst the majority of the DBE infrastructure might

fit with the WGIG description, the EvE component which facilitates the search for and composition of services, does not fit this description. As actions, 'searching' and 'composing' are necessarily political to some extent. How easily something is found is something that can be manipulated, as are suggestions for how a set of objects should be combined. The only way to overcome the potential for exploitation is through making the structures and algorithms underlying these actions public and the decision-making process for choosing one approach over another, transparent. A 'bill of rights' outlining the principle concerns would give the process a clear orientation but there would always be the need for debate. An alternative approach could be to appoint some kind of authority and make them responsible for these decisions but this suggests a centralised approach that is not in keeping with the core aims and characteristics of digital ecosystems.

Working Group on Internet Governance: Case Study 4

This is the fourth and final part of a case study written on the Working Group on Internet Governance (WGIG). The summary excerpts taken from the WGIG Background Report on Internet Governance and their analysis have been divided up into four separate blogs. In each blog, the summary excerpt appears first and the analysis follows directly after.

Summary excerpt from the Background Report on Internet Governance

One of the most pressing needs identified by both the WSIS and by the WGIG membership was the need to develop a shared understanding of governance before discussions could move forward. The scope of activities to which individual members understood governance to refer, varied. For some, it was only the internet's core resources that required special governance arrangements, for which contracts were considered to offer an appropriate governance mechanism. For others, the issues at stake were more wide-ranging requiring other kinds of governance mechanisms such as treaty instruments. For most, views on the appropriate scope and mechanisms of governance fell somewhere in between these two ends of the spectrum.

Differences in opinion were accentuated by a lack of common understanding about the meaning of the term governance and its relationship to government. Governance "influences political processes and public institutions by shaping the way people interact with government and how government interacts with them". However, the group recognised that governance occurs in other areas of social life. In the private

sector, the notion of ‘corporate governance’ underlying the management and operation of private companies concerns the shaping of relationships and interactions between shareholders, directors, managers and where applicable, regulatory bodies. However, meanings of governance go beyond these two areas and as civil society organizations have demonstrated through their attempts to interact with both public and private organizations, there is a governance dimension to practically every area of economic and social life.

Even placing these distinctions to one side, the Working Group identified that there remained a tendency to see governance as either a top-down process modelled on government policy making and administration, or as a bottom-up process modelled on electoral mechanisms. By contrast, the experience of the group led them to conclude that:

“governance is primarily a horizontal process of interaction that influences the way in which hierarchical processes operate, both top-down and bottom-up. In this sense, governance is closely associated with the notion that all stakeholders should play a role in all Internet related decision making processes”

The eventual definition was arrived at deductively from 5 general principles that the group regarded it necessary to fulfill, which were: adequacy, generalisability, descriptiveness, conciseness and process-orientation. On the last point concerning process, the WGIG decided that the definition should remain neutral about who may be doing the steering, emphasising the act of governance , rather than equating it with particular governors. In addition to this, the group resolved to work inductively, working from particular instances to general principles.

Analysis: Defining governance

Two apparently contrasting methods appeared to work well for the working group. The first method was to look at particular issues and derive general principles from them and the second was to agree on general principles and find a solution that satisfied those principles. Listing appeared to be an important process for the group. For example, the group listed issues relating to governance (and in fact began this work before it began the work of developing a definition) and then derived general principles from those lists. The process also worked the other way round, that is, working with a list of general principles and then focusing on particular instances or examples.

The process of listing may be useful to the DBE and it could be argued that the project

could save time by building on the work done by the WGIG with respect to the definitions that the forum created. However, definitions themselves are agenda setting and the process of arriving at a common understanding is significant in itself.

The WGIG definition of internet governance

"Internet governance is the development and application by governments, the private sector, and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures and programmes, that shapes the evolution and utilisation of the internet".

The group surmised that governance is fundamentally a process that involves supplying and applying mechanisms that steer or give order to courses of action. From a logical standpoint, listing stakeholders was not seen as being necessary but from a political standpoint, it was considered important to underscore that any of the three societal sectors may play a role in governance, depending on the particular case at hand.

Appendix 3 - Computing domain consultation questions

- Are there any standards or technical areas of concern that you think should be considered in a sustainability/governance discussion?
- Is your organisation involved in any follow-on EU funded projects?
- On what conditions would you carry on contributing to maintaining and developing DBE code, after the end of the project?
- Will it be necessary to form a group of paid developers to maintain and develop DBE code at the end of the project?
- Are there alternatives to this?
- If a developer organisation is created, what form could this group take?
- What sources of income could it generate?
- Any other important questions/issues you would like to add to the discussion agenda?

Appendix 4 – Computing domain discussion agenda document

A discussion paper for the computing domain on governance, sustainability and the DBE codebase

This discussion paper is intended to support those who have contributed to the development of DBE code in a process of talking about and planning for the governance and sustainability of the DBE code at the end of the funded life of the DBE project. In order to write this paper, each of the 11 partners who are currently acting as either developers or users of the DBE codebase were asked to provide answers to two sets of questions. The first set of questions referred to the individual circumstances and conditions surrounding each individual organisations' continued commitment to the DBE codebase beyond the end of the project. The second set of questions asked each partner for suggestions regarding the kind of organisational and financial arrangements they felt would need to be in place for the maintenance and development of the DBE codebase to continue. Out of the 11 partners, 10 replied and their answers form the basis of this document. Before presenting their answers, a brief discussion of the current circumstances surrounding the DBE developer group is provided in order to set the scene.

The report from the DBE annual review which took place in January this year stipulated two actions that are significant to discussions concerning sustainability and the computing domain. These two stipulations were:

- to place responsibility for creating a plan for code sustainability with the Computing Domain
- to request that the project management team develop a plan and manifesto to launch an 'Open Digital Ecosystem' open source community

Whilst the overall directive to move towards creating an open source community is clear in the report, what is not clear are the steps that need to be taken to reach this end. Sustainability planning in the business domain has adopted a 'short term', 'mid-term' and 'long term' approach to discussing sustainability arrangements and this approach might translate well to discussions on code sustainability. Firstly, however, it is important to recognise where DBE developers are now in relation to these aims.

The DBE partners who currently make up the DBE group of developers come from a diverse range of organisations, whose interests and motivations for taking part in DBE development activities are equally diverse. Maintaining collaboration between large technology companies, SMEs and research institutions beyond the end of the project constitutes a challenge. The business objectives that could potentially unite small and large private companies are in fact frequently at odds with one another in the context of systems development, and with little or no interest in the pursuit of business ends, research institutions can make interesting partners.

In this paper I refer to the DBE developers as ‘the DBE developer group’ rather than as a community. This distinction is designed to emphasise that there is a potential difference between a group of developers who work together because they are part of the same EU project and a group of developers who choose to form a community. If the DBE developers choose to form a community as the Commission would like them to, I would argue that an explicit process of community building needs to begin which, as well as tackling plans for governance and sustainability, needs to include:

- building a clear identity
- developing a common set of values or aims (including a ‘bill of rights’)
- creating a sense of shared ownership
- formulating organisational mechanisms for decision-making
- forging links with follow-on EU projects
- attributing roles to key individuals

In order to begin the process of identity building, it will be important for the developers concerned to start developing a common language for talking about the DBE beyond the end of the project. This can begin through simple tasks such as deciding on a name to describe the codebase ‘as a whole’ when it is no longer the ‘DBE project’ or collectively deciding on a name for the developer group as it will exist after the end of the project.

With these ideas in mind, responses to key questions on governance and sustainability that were asked of computing domain partners are presented below.

Imagining what the DBE developer group will look like in January 2007.

There was unanimous agreement from all computing partners that in the short term, i.e. for a period immediately after the end of the project a group of “highly skilled and dedicated” paid developers will be required in order to maintain and develop the DBE codebase. The number of paid developers that partners suggested ranged between 2 and 5.

Intel provided some interesting ideas on the potential roles that would be involved in maintaining and improving the DBE software. These included: users, developers, code owners and project administrators / integrators.

	Short term	Mid-term	Long term
Unpaid	<ul style="list-style-type: none"> • Users 	<ul style="list-style-type: none"> • Users • Code owners • Developers 	<ul style="list-style-type: none"> • Users • Code owners • Developers
Paid	<ul style="list-style-type: none"> • Developers • Code owners • Project administrators/ integrators 	<ul style="list-style-type: none"> • Project administrators/ integrators 	<ul style="list-style-type: none"> • Project administrators/ integrators

Beyond these roles, other partners saw the need to encourage the participation of the wider OSS community as an important aspect of the project administrator / core developer role.

What kind of organisation could the core group of developers exist within?

For good reason, answers to questions concerning 1.) funding, 2.) type of developer organisation and 3.) the aims or remit of that organisation, were almost inextricable from one another. It should be noted, however, that talking about the need for a small group of paid developers was not synonymous with forming a ‘foundation’ or other centralised organisation. However, there was recognition that a group of paid developers would have to be organised somehow, even if it was only at the level of being able to receive funds and pay those in key roles.

Sensitivity over power and control within the potential core developer organisation was present in partners’ responses particularly with respect to funding. As one partner put it, “the one who pays is the one who decides”. Concern over who would ‘control the

platform' was also expressed in terms of who would occupy key roles. In order for companies to maintain government-based income streams and exploit routes to market that include national or regional governments, there would have to be a balance of interests amongst those in key roles. National governments may have reservations about entrusting key projects to an organisation that was clearly 'run' by a single large technology company. However, if revenue-based business models were sought then the bias would be need to be towards those with business acumen. Either way, a strong argument was made for the continuation of a development environment where a strict 'separation of concern' exists between software developers and business users. This argument was made on the basis that developers should be left to do the work of developing and not be forced to 'bring in' business users where this is not there specialism.

There was some difference of opinion on the potential of the developer group to attract voluntary contributors in the short term (i.e. immediately after the end of the project). The stability / usability of the platform at the end of the project was cited as a potential reason for this, as was the currently limited degree to which the DBE has attracted the attention of OSS developers worldwide. It was also noted that in terms of recruitment, there was the added difficulty of trying to convince potential contributors of the benefits inherent in an infrastructural technology, which was considered much more difficult than explaining, for example, the benefits of a new operating system or an alternative to Word..

Whilst acknowledging that the type of funding model agreed upon would directly affect the character of a DBE developer group, partners came up with a range of suggestions regarding what form that group should take. One suggestion was that the group could offer a mix of proprietary and non-proprietary development, like Argo UML (open source effort by Tigris) and Poseidon UML (commercial based software on Argo). Other suggestions supported the idea that a not-for-profit company would work best, set up specifically to meet the objectives of the DBE. In terms of funding, the point was made that at the moment, the EU does not provide close-to-market venture capital so a possibility could be for this organisation to be funded under FP7 as a collaborative project. Another suggestion was to offer the core developer team of 3-5 people the option of 'return on investment' when offering support to early business adopters. A further suggestion was that since the EC is becoming increasingly involved in open source projects, perhaps it could establish an organisation that could serve all EU

funded open source projects, preventing them from each having to invent their own governance arrangements.

Ideas for attracting funding or voluntary contributions

Developers' often included a range of options in their answers to questions concerning potential funding models. These included models based on public finance, private finance and combinations of the two. Entrepreneurial ideas were suggested for generating revenue but there was some resistance to the idea of 'selling code'. In two cases it was felt that the public finance route was one that offered the DBE a unique advantage in relation to competitors and an opportunity to extend focus on the public or social value of the DBE.

Ideas for attracting funds and contribution that were given by the developers are listed below.

Ideas for public sector funds and contributions

- Funding obtained through taking part in national or regional projects based on the DBE technology
- Universities identified as an example of organisations who might choose to support the evolution of the code for free.
- EC funding for follow-on projects that include upgrade/maintenance of DBE software
- EC funding for a project dedicated to the upgrade/maintenance of DBE software
- Government funding – this is a source of funding the DBE can generate that other software communities may not be able to

Entrepreneurial ideas

- Current DBE developers form a virtual enterprise to create software solutions using the DBE where they become consultants.
- SME developers who use the DBE in their business might support it directly or as a sponsor
- Paid consultancy, commercial technical DBE publications – something along the lines of the JBoss business model
- Selling training material and providing training courses

Combined

- Create a DBE Foundation with enough funding to pay administrators and code owners - could receive income from industry, government (EC, Local), public donations
- Combine real business deployment which can generate its own revenues from a stable infrastructure with the less stable research part of the platform that can be supported through public funds

At this point in time it seems difficult to pinpoint to what extent existing computing partners will contribute voluntarily to the codebase. Some partners argued that regardless of follow-on funding, individual partners were likely to continue to look after their own codebases anyway in order to exploit them in future projects.

DBE Follow-on projects

The general impression from partners' responses was that follow-on EU funded projects that were intended to use or add functionality to the DBE platform would play a significant role in the immediate level of sustainability that the codebase would achieve. Beyond this 'safety net', anxiety was expressed at the 'process of natural selection' that DBE components would be subjected to by the open source community. However, on the same count it was argued that the potential for *self*-sustainability would only be visible once this process begins, "and we will know which components are interesting and which ones are irrelevant based on the people interested to contribute and engage with us".

Currently, 4 out of 5 of the core DBE projects are in the position of being supported by follow-on projects. Notably, the DBE studio is not supported and there appear to be no immediate plans in place to ensure its continued maintenance after the end of the project. However, the project partner concerned was clear that given appropriate funding they would continue their commitment.

[Please note: this table is incomplete. A more detailed overview of components and their status with regard to contributions after the end of the project would be desirable]

Partner	Follow-on project	DBE component that will be maintained / developed	Added functionality
Soluta	ONE		
WIT	OPAALS and ONE	Open Service Accounting	
UNiS	OPAALS		
ISUFI	OPAALS	SBVR-based BML Editor	
STU	OPAALS	EveNet	
Sun/Techideas	OPAALS	Execution Environment	
	SEEMLESS		
	CONTRACT		

A key question here concerns ‘horizontal issues’ that are not covered by individual projects in their current form, yet are fundamental to the functioning infrastructure, such as, for example, security and identity.

Given the significance of follow-on projects, it would seem that any plan for short term sustainability should include consideration of how to create and maintain strong links to these projects through the developer group. To some extent, these projects will bring a new set of user/developers to the developer group shortly before the project ends.

However, the question of how to involve more users is also important. At the moment, one of the regional catalysts ITA in the Spanish region of Aragon is acting as a user/developer. Their feedback to the maintenance and debugging process has so far been very important to the development of the codebase. At a communication level they have played an invaluable role by acting as a ‘live’ user feedback loop ensuring that the developers have appropriate communication tools and response rates in place. If regional and SME engagement continue (and through projects such as PEARDROP it should do), then the number of users should increase. Again, however, this creates a heavy reliance on future projects and in the short term requires that strong relationships between the DBE developer group and significant projects are fostered.

Conditions for continuing to contribute to the DBE code base after funding ceases.

Each of the 11 computing partners were asked under what conditions they would continue to contribute to the codebase once the project ended. Answers fell into two categories. The first condition was where a customer had adopted a solution that uses DBE (interestingly this response was given by the two small technology companies but was not an option proposed by the larger technology companies). The second condition was where a partner was funded to carry out maintenance and development through a follow-on project.

Funding to pay developers was cited as being of central importance to the continued involvement of all developers. In general, only commitment to those components that partners had developed themselves was offered although support at the level of 'ideas' for other areas was described as potentially forthcoming. For research institutions, continued involvement in the DBE was discussed as potentially desirable where the platform was of strategic importance in the pursuit of particular research agendas and/or accessing further grants.

Planning for sustainability

Thinking in terms of short term, mid-term and long term sustainability planning, it is important that the developer group does not overload itself with requirements in the short term. For example, it may take some time before a viable model of self-sustainability is reached. In general, when developers spoke in their answers about advanced capabilities such as training and certification, these were generally expressed as a mid term or long term goals and at present, there is no sense of whether these services would be provided by related SMEs or become a business model for the core developer organisation. Nevertheless, the groundwork for community building needs to begin as early as possible, if this is the route that is chosen, since trust in the viability of a DBE community that capable of continuing beyond the funded life of the project will take time to establish.

There will be a natural transition phase during the last 6 months of the DBE project when new follow-on projects start to become involved in the codebase and the developer group becomes a hybrid group, for the first time, consisting of developers from more than one project. Preparation for this step could include:

- Identity building work where the codebase and 'new group' are named and discussions are started on sustainability
- A discussion of roles viable organisational models
- An analysis of potential funding models to cover the period immediately after the end of the project

Governance

Governance applies to the DBE in two senses. It applies in an organisational sense where it focuses attention on 'the way things are organised', and the political and ethical consequences of the organisational structures put in place. In this sense, unless there are serious rifts or disagreements within the group over common aims and objectives, then governance should take care of itself in the early stages of sustainability planning. It will effectively be the practical 'working arrangements' that the developer group put in place in order to carry out their work during this transition period.

A potentially more complex aspect of governance will be how the group chooses to construct relationships with those 'outside' the group. Deciding who is 'outside' and who is 'inside' the group is a political decision in itself but as long as a focus on practical arrangements is retained, this area of decision-making should not prove too testing.

The second sense in which governance applies to the DBE is in the more technological sense of how repositories, registries and other normally centralised components of an infrastructure are organised. In this sense the DBE architecture sets the benchmark for how centralised or de-centralised a particular configuration should be. However, there are still a range of possibilities and a measure of ethical consideration is required about how choices are structured into the DBE platform. It is in this sense that the DBE group of developers has been asked by the Commission to think about a 'bill of rights' that will set out, in a transparent manner, some of the potentially ethical implications of decisions taken regarding the DBE infrastructure. It is often difficult to envisage or invent scenarios where ethical considerations may need to be taken into account, but as use of the infrastructure grows, this is most certainly an area of discussion that the group will need to be aware of and begin giving serious thought to.

Appendix 5 - Computing domain meeting notes

Governance and Sustainability Planning and the Computing Domain

The following is a summary of a discussion on sustainability and governance that took place at a meeting of the computing domain in Zaragoza on 4th May 2006. The discussion was facilitated by Mary Darking (LSE) and Tim Romberg (FZI).

The main purpose of the discussion was to reach a common understanding of the following two recommendations that were made by the European Commission in the DBE Annual review report:

- to place responsibility for creating a plan for code sustainability with the Computing Domain
- to request that the project management team develop a plan and manifesto to launch an 'Open Digital Ecosystem' open source community

	On code base sustainability
1.	It was generally agreed that any decisions taken regarding the future of the DBE codebase should reflect the basic reality of open source development; that <i>a project or codebase will only survive if it is interesting to developers and has clear business potential</i>
2.	On this basis, it was agreed that the future of code sustainability should not be modelled around the presence of central funding, but that in the <i>short term</i> it should <i>focus around the actions necessary to attract and sustain the interest of voluntary contributors</i>
3.	Following this line, it was recognised that <i>communications surrounding code development and maintenance should be fully opened out.</i> ACTION: Mailing lists currently held on Collabnet should be closed and all lists moved to SourceForge.
4.	It was also recognised that being 'fully open' would require <i>a clear, transparent and openly accessible approach to decision-making</i> , particularly with respect to <i>committing code</i> to the codebase and organising <i>software releases</i>
5.	There was a long discussion on whether to think in terms of the codebase as a <i>whole</i> or in terms of the <i>individual projects</i> make up the codebase. It was proposed that from a developer perspective, one view should not be given <i>automatic</i> priority over the other, instead it was decided that <i>interest in individual projects should drive individual projects and interest in the codebase as a whole should drive integration</i>
6.	In the interest of integration, it was agreed that the codebase should be seen as

	<p>consisting of 2 parts - <i>the Execution Environment and the Service Factory</i> – and that the role of 'Synchroniser' should be created for each part. It was agreed that these positions would be unpaid and should be undertaken by individuals who are prepared to work in their own personal free time.</p> <p>ACTION: Nominate candidates for the role of Execution Environment Synchroniser and Service Factory Synchroniser</p>
7.	<p>Nominating candidates for the 2 synchroniser roles will be carried out via e-mail on the basis <i>of one vote per developer</i>. Each developer will therefore propose 2 names: one name for the Exe role and one name for the Service Factory role. The aim is therefore that appointments will to these roles will be driven by the individual reputation of nominees within the developer group.</p>
8.	<p>The synchronisers will base their decisions on the '<i>ground-up</i>' requirements of individual projects, <i>balancing</i> these against the <i>integration requirements of the codebase as a whole</i>.</p>
8.	<p>It was agreed that the <i>name for the codebase as a whole should remain as it is: 'Digital Business Ecosystem'</i></p>

	On launching a community
1.	The idea of trying to develop a 'DBE community' identity in the short term was resisted.
2.	The concept of a community identity was discussed and the question of community purpose was raised. The point was made that a community requires common ground and a common purpose. At this point in time and until the business potential of the technology is realised, the DBE lacks both, making real community building problematic.
3.	The basic assumption that the computing domain should create a single community of developers, as the Commission appears to request, was called into question. It was argued that to be truly open source, the Commission should allow for the fact that there may be multiple communities and that therefore the issue of a single community should not be forced.
4.	The proposal was made that the new arrangements for communication, decision-making and organisation should be put in place from June 2006 in order that they can be put to the test. It was agreed that these arrangements would stay in place for a period of 12 months, taking the developer group through the transition from funded to unfunded