Deliverable D7.2.1:
Interim sustainability plan for the big data community

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PREFACE

The BYTE project will assist European science and industry in capturing the positive externalities and diminishing the negative externalities associated with big data in order to gain a greater share of the big data market by 2020. The project comprises three phases of work: a preliminary investigation, an exploration of present and future societal impacts, and the future agenda for big data.

This deliverable captures the results of part of the activity performed in phase three, within *Work Package 7 – The big data community* (WP7), namely in *Task 7.2 – Implementation plan for the big data community*.

The overall objectives of WP7 are:

1. To design and form the big data community, including drafting founding texts
2. To prepare a BYTE project final report, including a series of guidelines supported by community members
3. To input BYTE findings and guidelines into relevant networks.

The above task and this deliverable contribute to objective 1. As per the DoW, Task 7.2 would consist in outlining a plan for the development, goals and long-term sustainability of the community designed by *Task 7.1 – Forming the big data community*, including a funding plan to ensure that the community remains active after the close of the BYTE project and at least until 2020. The BYTE consortium has proposed an amendment to Task 7.2 in the DoW, to also address the community impact strategy, leveraging on the work of WP8 and WP9 (led by NUIG and UIBK), in response to Review Recommendation 3 contained on the BYTE Year 1 Review report:

> *"Create a new document (called "Impact Strategy") which is addressing specifically the strategy used by the project and the implementation measures done to involve the main stakeholders in order to create a significant Big Data Community, which will have to remain active also after the termination of the project."*

The Year 1 Review report also recommended that all partners should be involved in the creation of this strategy and that one partner be responsible for its implementation. Although the report suggested that this impact strategy should be formulated within the work package focused on dissemination, the consortium have agreed that it would be most appropriate to situate it within WP7, as the impact strategy is directly related to the big data community.

Task 7.2 has been judged ideal for this activity for three reasons:

1. First, it already relates to the governance structure, membership criteria and goals of the organisation. This has been augmented to include a specific strategy to identify the correct stakeholders to engage, how to contact them and how to incentivize their participation;
2. Second, the task already foresees the involvement of UIBK who is leading the dissemination work, and NUIG who is leading the stakeholder engagement work, and

    both dissemination and stakeholder engagement activities are central to the development of this strategy;

3. Finally, the task feeds into D7.1.1 and D7.1.2, the Interim and Final strategy and charter for the Big Data Community, which is the most appropriate place to explicate this impact strategy.

Given these considerations, Task 7.2 also involves TRI and all the other partners, to ensure coherence with the other BYTE work packages. The work has addressed an impact strategy and a development plan for the big data community, along with some possible measures to sustain it in terms of its evolution, to ensure its continued efficiency and effectiveness. Furthermore, the work has outlined an initial set of possible funding opportunities to sustain the community financially, for the three identified implementation strategies.

The task results have been captured in *D7.1.1 – Interim strategy and charter for the big data community*, delivered on time on February 2015 (M24), and in this companion deliverable *D7.2.1 – Interim sustainability plan for the big data community*, initially due on February 2016 (M24).

In agreement with the PO, the delivery of this document has been slightly delayed (to March 2016, M25), to further elaborate on the potential sustainability models of the three identified implementation strategies for the big data community.

This deliverable (along with D7.1.1) has been further revised and updated following up to the Year 2 Review of BYTE, elaborating on how BYTE will guarantee sustainability of the big data community after the project ends. A definitive version of this deliverable, with the final sustainability plan for the big data community, is due near the end of the BYTE project.

EXECUTIVE SUMMARY

BYTE will culminate in the launch of the BYTE Big Data Community (BBDC), a sustainable, cross-disciplinary platform that will implement the roadmap identified within the project, and will assist the European stakeholders in identifying and meeting the big data challenges, to finally achieve the scenario envisioned by BYTE for 2020.

Continued engagement and dialogue with stakeholders are key success factors for the implementation of a European research and policy roadmap for big data and to achieve the BYTE vision. Hence, the BBDC will be sustainable also after the close of the BYTE project, at least until 2020.

This document identifies possible measures to sustain the BBDC for its anticipated time of operation, including a letter of intent by dedicated members, an initial funding plan and a list of possible funding opportunities. It also outlines measures to sustain the possible future evolution of the BBDC, to ensure its continued efficiency and effectiveness.

This interim sustainability plan will be finalised near the end of the project.

1. INTRODUCTION

As per its Description of Work (DoW), BYTE will culminate in the launch of the BYTE Big Data Community (BBDC), a sustainable, cross-disciplinary platform that will implement the roadmap identified within the project, and will assist the European stakeholders in identifying and meeting the big data challenges, to finally achieve the scenario envisioned by BYTE for 2020, as presented in deliverable *D5.1 – The BYTE vision*.

In the third phase of its development, BYTE has started cultivating an extensive and diverse group made up of traditional big data stakeholders, such as industrial actors, statisticians, standardisation bodies and policy-makers, computer scientists, and other science experts. Given its focus on societal externalities, also social science scholars and open data activists will be engaged, to create a shared vision and roadmap for future investments based on concrete challenges. To appropriately consider public perceptions and aspirations, the consortium will also involve representatives of civil society organisations, as well as public institutions.

The BBDC will monitor progress in meeting societal challenges associated with big data, capturing opportunities, provide support where necessary and identify new and emerging externalities to be addressed. Furthermore, the BBDC will facilitate a shared understanding of concrete problems and opportunities worth investigating, and suggest approaches for cooperative problem solving and collaborations across different disciplines and stakeholder categories both now and in the future. The community members will support and implement the BYTE guidelines and recommendations on capturing and addressing the positive societal externalities associated with use of big data, laid out in BYTE deliverable *D7.3 – Final report and guidelines*.

Besides creating a vital collaborative mechanism to build consensus on the recommendations identified by the BYTE project, the BBDC will also help European decision-makers to assess policies and practices across Europe, and benefit from feedback from the long-term engagement of key stakeholders. In fact, although the Commission has already supported a number of organisations designed to gather stakeholders together to assist in capturing big data innovations, these other organisations are focused on the technical and infrastructural elements of big data innovations, not the societal externalities that the BBDC will examine.

In this context, continued engagement and dialogue with stakeholders are key success factors for the implementation of a European research and policy roadmap for big data and to achieve the BYTE vision. Hence, the BBDC will have to be sustainable also after the close of the BYTE project. As per the BYTE DoW, in addition to ensuring that the project website remains in place for at least a year after the completion of the project, the consortium will also ensure that the BBDC remains active at least until 2020. As BYTE is due to end in February 2017, the BBDC should plan its activities with a horizon of at least 4 years to accomplish its mission.

The next chapter summarises the various strategic options identified for the BBDC at this stage of the BYTE project. Based on these options, the following chapter outlines some measures to sustain the BBDC, operationally and financially, tracing an interim funding plan and identifying a list of possible funding opportunities. The chapter has been further revised and updated following the Year 2 Review of BYTE, expanding on how the BYTE consortium will

guarantee continued operations of the BBDC after the project ends. In particular, BYTE consortium members are requested to become Full Members of the BBDC, abiding to the letter of intent included in Annex A. The subsequent chapter elaborates on the possible evolution of the BBDC, outlining some possible measures to accommodate and control it, so as to ensure its continued efficiency and effectiveness. Finally, the last chapter identifies future work items to refine the sustainability plan for the BBDC into its final version, which will be delivered near the end of the project.

2. CONTEXT

The sustainability plan of the BBDC, which is the object of this document, is inherently dependent on the strategy chosen for implementing the BBDC itself, which in turns dictates its charter and its development plan. Hence, this document is intended as the companion of deliverable *D7.1.1 – Interim strategy and charter for the big data community*[2].

At the time of this writing, the precise definition of the BBDC strategy and charter is still in progress, as it strongly depends on the BYTE vision and roadmap, which are being completed in parallel by WP5 (*Foresight analysis*) and WP6 (*Roadmapping*). The final version of the BBDC sustainability plan (D7.2.2), due near the end of the project, will be expanded and refined in alignment with the final version of the BBDC strategy and charter (D7.1.2).

The partners involved in WP7 have investigated the context and background in which the BBDC will operate, surveying the main initiatives and projects related to big data in Europe and the world, and identifying the most relevant to the project objectives. D7.1.1 identifies three possible distinct approaches that the BYTE consortium may pursue to create and initiate the BBDC:

1. Autonomous community – means setting up a totally new and independent community to put forward the BYTE recommendations, vision and roadmap; we also refer to this approach as to the "Stand-alone" option;
2. Umbrella organisation – means gathering the existing efforts into some sort of unifying federation that would coordinate their efforts, as far as they are concerned with the objectives of BYTE; we also refer to this approach as to the "Federal" option;
3. Contribution to an existing initiative – means establishing a link and a close collaboration with one of the existing initiatives, trying to gain trust and influence on the aspects of interest to BYTE goals, so as to steer its governance accordingly. Under this perspective, it may be foreseeable (or even desirable, as an indication of full success), that the BBDC eventually merge into the chosen initiative; we also refer to this approach as to the "Join & Merge" option.

The following table summarizes the main factors of the three above hypotheses according to a SWOT analysis approach, i.e., in terms of its inherent positive/negative implications (Strengths and Weaknesses), as well as in terms of the external factors which may reinforce or diminish its effectiveness (Opportunities and Threats).

Table 1 - implications of the three main hypotheses for the BBDC strategy

	1-Autonomous	2-Umbrella	3-Contributor
Strengths	Complete freedom to organize activities and goals	Scalability and flexibility	Direct and immediate influence

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[2] Bigagli, Lorenzo, *et al.*, Interim strategy and charter for the big data community, BYTE D7.1.1, February 2016. Revised in September 2016.

Weaknesses	Significant effort for creation and maintenance	Impact on members is indirect and mediated	Must adapt to existing governance, etc.
Opportunities	Build the BYTE reputation around societal issues as a core focus	Reach many stakeholders	Leverage/optimise existing resources
Threats	There are already many organizations	Mass of BYTE may be insufficient to attract enough parties	Limited willingness to cooperate and/or limited impact of the chosen initiative

After an evaluation of the respective pros and cons[3], we have taken as a first-choice working hypothesis that the BBDC channel its contribution through the BDVA and begun a process of exploring such collaboration with the BDVA steering committee. Based on this interim hypothesis, D7.1.1 outlines a tentative development plan and charter for the BBDC, which will be further elaborated in the future months.

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[3] *Ibidem*, §3.

3. SUSTAINABILITY OF THE BIG DATA COMMUNITY

As stated in D7.1.1 and in the project DoW, a key objective of the BBDC is the implementation of the BYTE policy and research roadmap, to achieve the BYTE vision for 2020. To that end, the BYTE consortium is committed to guarantee the sustainability of the BBDC until then. As requested at the Y2 Review, a specific task force has been created to ensure coherence, alignment and continuity to the fundamental components of the project, i.e. the vision, the roadmaps and the community.

The next two chapters elaborate on how the BYTE consortium will guarantee that the BBDC remain active after the project ends. The following chapter outlines specific additional funding options that may be exploited to that end. The sustainability plan will be finalised in the upcoming months and reported in D7.2.2, in alignment with the final strategy for the BBDC, which will be reported in deliverable D7.1.2.

3.1 CONTINUITY OF BBDC OPERATIONS AFTER THE END OF BYTE

In line with the selected strategy of Join & Merge, the operations of the BBDC will be closely coordinated with the BDVA. In particular, the BBDC focus areas will be decided jointly with the BDVA, preferably during an annual co-located meeting (e.g. the BDVA annual Summit). Besides, the BBDC will leverage all the possible synergies with the appropriate BDVA Task Forces: *TF3: Community*, *TF5/9: Legal/Societal*, including possible meetings, allocation of resources, personnel, support tools, etc.

To guarantee such effective coordination, key BYTE members will join the BDVA, and vice versa. In fact, some of BYTE partners are already members of the BDVA: NUIG and SIEMENS are among the founding members; TRI joined months ago and is leading the Sub Group *TF3-SG3: Stakeholder platform for the societal issues*; CNR has just been provisionally approved (the decision on definitive acceptance will be made during the next BDVA General Assembly, on November 30th, 2016). Other BYTE partners will be invited to join the BDVA in the next months and commit to keep their BDVA membership until 2020.

Conversely, key BDVA members, such as the Vice-Secretary General, a Vice President, the leaders of TF3 and TF5/9, the leader of research activities and SRIA are among the BBDC founding members.

These tight links between the BDVA and the BBDC, along with the fundamental importance of the BDVA in the European strategy for Big Data, will ensure that the BBDC continue its operations after the end of the BYTE project.

3.2 INTERIM FUNDING PLAN

The stakeholders of the BBDC should ideally provide the resources for its operations. They include its members, the BDVA, and the EC. In the near future, we consider reasonable that the BDVA, who is directly addressing societal issues, support the BBDC in its effort to engage civil society organizations. We also wish that the EC will pledge itself to support engaging

societal organisations in the governance of the Big Data revolution. However, at the time of writing this interim sustainability plan, no assumptions can be made in that regards.

As for the members of the BBDC, being it targeted at civil society organizations, which must prioritize their scarce resources for their core mission, it is unlikely they will be able to self-sustain it, in the long-term. However, this could be a viable start-up solution, considering that the BBDC membership includes the whole BYTE consortium, that is the only stakeholders whose commitment can be guaranteed, at the moment.

The BYTE task force agreed that further activities to organise the BBDC after the close of the project would be voluntary, in-kind. BYTE partners all commit to participate in the BBDC till 2020, contributing to its activities. This entails participation in monthly teleconferences, research/consultation work on the selected yearly focus areas, coordination and management, a yearly summit and/or dissemination events for the society.

An estimation of the annual effort for the above is:
- 0,75 PM for coordination and research/consultation activities
- 1-2 days for a meeting in the EU

According to this estimation, the yearly aggregated support by the 11 BYTE partners would amount to 8,25 PM and 11 physical meeting attendances. This is considered sufficient to guarantee the operations of the BBDC.

BYTE partners anticipating being unable or unwilling to provide such voluntary, in-kind effort, for a given year, may allocate equivalent financial support. Such budget will be used to compensate the partners actually providing for the corresponding additional effort.

3.3 Funding opportunities

In addition to volunteer work contributed by the membership, several additional funding opportunities may be pursued to help sustaining the BBDC. Depending on the final strategy for the BBDC, some options may be more viable than others. The most likely effective funding options are indicated in Table 2.

**Table 2 – Possible funding options for the BBDC as an
1) Stand-alone community; 2) Federal community; 3) Join & Merge community.**

Possible funding options	1	2	3
Funding from **another community** (e.g. BDVA), in the framework of a cooperation agreement, etc.		X	X
Sponsorship – Corporate or Government	X	X	X
EU funding – can originate from several sources; EU Agencies, EU Institutions, EU Commission and/or EU Parliament delivering frame contract services (stipend); advisory, assist with specific regulatory development, implementation, enforcement, monitoring and reporting, in particular:		X	

• **H2020 Program** – the work programmes are published regularly, and typically have a detailed 2-year time plan including topics, calls, deadlines, etc. The current work programme for 2016-2017[6] has been published and opened its calls in October 2015. The key funding sources from this work programme for the BYTE community are expected to come from the calls that are relevant to Big Data PPP (in the 5i. Information and communication technologies (ICT) objectives):
 	
    o ICT-14-2016-2017: Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation
    o ICT-15-2016-2017: Big Data PPP: Large Scale Pilot actions in sectors best benefiting from data-driven innovation
    o ICT-16-2017: Big data PPP: research addressing main technology challenges of the data economy
    o ICT-17-2016-2017: Big data PPP: Support, industrial skills, benchmarking and evaluation
    o ICT-18-2016: Big data PPP: privacy-preserving big data technologies
 	
Big Data is also explicitly mentioned in certain other schemes, e.g. in cooperation with non-EU countries (such as Japan) and in CSAs like the ones on prize schemes.
 	
Calls from the Societal Challenges funding pillar may be of relevance (in energy, transport, health, etc.) In most cases that will imply that the BYTE community members will not be working directly with each other, but more with other communities. However, it also has also a positive impact in terms of adoption and cross-fertilisation - provided that the community will still be sustained e.g. by work in other joint projects, as well as at events such as EDF, and technology conferences e.g. SEMANTiCS, ESWC.
 	
Calls focused on research excellence may be of relevance for some members
 	
In general, the BBDC may take a facilitator role in any EU Program addressing Big Data and Societal Externalities
	X	

Funding from EU Member States and their local government agencies, authorities and initiatives delivering frame contract services	X	

6 http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-work-programmes-2016-17

(stipend); advisory, assist with specific regulatory development, implementation, enforcement, monitoring and reporting			
Annual membership fee and member contributions – there could be different membership categories and thus different fee levels (cf. BDVA). Moreover, members of the community may contribute with resources to meetings and work groups	X	X	X
Crowdfunding – for specific projects, crowdfunding practices in which monetary contributions are raised from large number of people or groups, might be suitable. This funding practice is especially useful to engage citizens and foster civil society ideals.[7] In addition, the community could also endorse affine related third-party projects and help them in their crowdfunding campaigns	X		
Conference fees – organizing Signature Seminars and Conferences		X	
Standardization Bodies – Facilitator of International Big Data Standardization Programs via ISO, ANSI, W3C, IEEE and others		X	
Business Areas – Facilitator for Joint Industry Programs (JIPs) for Big Data in Automotive, Defense, Oil & Gas, Energy, Transport and other sectors		X	
Service fees – the BBDC could provide a variety of services to the members and charge hourly fees for these. Examples include:			
• Partnering in other Big Data Communities EU work programs, i.e. H2020	X		
• Identifying and solving Societal Externality challenges	X	X	X
• Identifying and solving Big Security (Big Data and Cyber Security) challenges	X		
• Liaise to help European and non-European programs and initiatives to connect, be informed and collaborate		X	
• Contracting services	X	X	
• Public Relation and communication services: - Top 100 Big Data Projects Ranking List - Top 10 Big Data Challenges Ranking List - Big Data Service Providers Catalogue		X	
• Training services	X		
• Market Big Data solutions	X	X	

The Stand-alone scenario is based on the concept of a community specialized in societal externalities: the BBDC would develop services and attract members with this focus. The funding plan would therefore be primarily based on membership fees, member contribution and delivery of services.

The Federal scenario is based on the concept of an umbrella community where the BBDC holds the contact network together, facilitates activities and finds the right expertise for solving

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[7] Hollow, Matthew. Crowdfunding and Civic Society in Europe: A Profitable Partnership? *Open Citizenship,* Vol. 4, No. 1 (2013), pp. 68-73.

problems. The specialists are found among its member organizations. The BBDC will therefore be funded from membership fees, member contributions, stipend from EU and Nations and all types of facilitation, activity building, marketing and communication.

The Join & Merge scenario is dependent on the target organization (e.g. BDVA) willingness to attract new members with an interest in societal externalities, network with EU Communities and National Governments, building services and expertise. The funding plan can therefore include almost anything. Sources of funding will naturally be based on the final charter, mission, expected costs and resources.

As the preferred alternative has been identified as option 3 (Join & Merge), with one of its benefits being the possibility to use already existing resources and infrastructure, the funding options would be based on the funding opportunities of the already existing community. In case of a fall back to an alternative option, this list of opportunities will need to be developed into a full-fledged funding plan. Depending on the evolution of the BBDC, and of its value proposition towards potential participants, the assessment of what financial contributions to expect and from who may also evolve.

4. EVOLUTION OF THE BIG DATA COMMUNITY

Given the fast pace of societal evolution, legal frameworks and economical and technological landscape, it is essential that the governance of the BBDC incorporates means for adapting and adjusting its strategy, charter and development plan to mutable conditions, so as to remain current and efficient, a concept also known as "evolvability".

This chapter considers possible measures to evolve the strategy, charter and development plan of the BBDC, to the extent possible in this stage of its planning and definition, to accommodate the possible needs arising in the expected lifetime of the BBDC (at least 4 years, starting in March 2017).

4.1 STRATEGY AND CHARTER EVOLUTION

Tracking the progress of the roadmap implementation will allow assessing the impact of the BBDC and revisiting the BYTE vision, should the European big data ecosystem change in an unanticipated way. Likewise, also the strategy and charter of the BBDC needs to stay current and efficient.

As elaborated in D7.1.1, the preferred initial option is that the BBDC channel its contribution through the BDVA, into which it may eventually merge, around or after 2020. However, also the other options considered (Stand-alone and Federal) present significant strengths and opportunities that will be re-evaluated in the coming months and years. Hence, we will continue exploring the three options moving forward.

The evolvability of the BBDC strategy is implemented as follows:

1. Develop the three identified strategies for the BBDC, in terms of their charter/mission, timing, roadmap development and possible funding;
2. Process the alternatives and build consensus for the chosen BBDC approach (note that it could consist of functions, capabilities and resources from all three strategic alternatives);
3. Present the resulting BBDC strategy to the stakeholders and get their consensus and feed-back;
4. Describe the new BBDC organization in concrete and practical ways. Detail staff requirement, cost budget, financing and funding, initial seed funding, set up a proper business plan, create marketing material, service descriptions, etc.

As a first task of the community building exercise, we will present the three options to the identified BBDC founding members and begin to get consensus and feedback around the initial preferred Join & Merge hypothesis. In practical terms, we aim at constituting a BYTE Association, or a similar suitable form of legal entity, so that we could fall back to the Stand-alone or the Federal option, in case the Join & Merge option become impractical, or undesirable.

The next chapter elaborates on the charter evolution for the Join & Merge option. The following two chapters exemplify possible evolution scenarios of the BBDC, respectively towards an autonomous community and an umbrella organization.

4.1.1 JOIN & MERGE OPTION

In terms of the BBDC governance structure, the first-choice Join & Merge option implies to align with the appropriate elements of the BDVA governance structure, i.e., a task force with a quite flat hierarchy. This is a flexible arrangement that allows to further structure the BBDC (e.g., with president, secretariat, advisory council, etc.), should it be required by its evolution, namely in case the overall strategy is changed to the Stand-alone or to the Federal option, as elaborated in chapter 3.1.

To further structure the BBDC membership, possible additional membership categories may be introduced, such as:

- Liaisons – members with the authority to represent the BBDC in another group (like an emissary or ambassador);
- Advisors – individuals selected due to seniority within their organisation and regarded as a significant influential and insightful source;
- Sponsors – members that contribute economically to the BBDC (e.g. shareholders).

Besides, additional BBDC membership categories may be conceived for specific stakeholder types, such as civil society organisations and NGOs, which may be reluctant to engage with an industrial organisation, for political or financial reasons (e.g. "lightweight" member, observers).

As a possible evolution of its activities, the BBDC may gather and organise intelligence on planned, on-going and finished big data projects and activities, current big data issues that needs to be addressed, big data services and products that can be offered to the public and finding opportunities for collaboration, learning and innovation. This could lead to opportunities for sustaining the BBDC, such as:

- A professional contracting function to initiate a big data related project application, bringing together consortium partners, linking with similar projects and organisations, facilitating the application, negotiating terms and providing advice for the execution lifecycle. BBDC contracting can work with any type of frame contracting used by the EU Commission, -Institutions, -Agencies, -Projects, EU member countries, organisations and universities, institutes, companies and organisations;
- A consulting function to scrutinise candidate big data project application, so as to advise on possible redundant and/or outdated research topics, which would lower the probability of success;
- An expertise provisioning function, to mitigate negative consequences of societal externalities. Potential customers may include governments implementing open data policies at both the national, state, and city level, for users to develop new applications that can generate public good.

4.1.2 STAND-ALONE OPTION

The mission for the BBDC in the stand-alone scenario is based on the concept of a service provider that analyses and solves issues related to Big Data and societal externalities. This is a specialist community that is building knowledge and packages it into marketable services and products.

BYTE should create the BBDC as a for profit association, with a charter clearly stating business objectives, transparency, openness, security, finances, budgets and profits and the intention to reinvest profits in the research and development of services.

The BBDC charter should clearly state that the organization is engaged in building and delivering trust for its customers.

The BBDC charter should address how the BBDC will attract, develop and manage skilful people capable of delivering technical, managerial, advisory, legal, security, and political services. These people will become unique experts, grasping social externalities and Big Data and its impact on all levels of society and in all regions.

The BBDC charter should also allow for attracting people and organizations into a global network with a common interest in handling societal externalities. The network should be led and managed by the BBDC.

The BBDC charter should also include how to invite potential customers into the network, perhaps organizing them into an Advisory Group.

4.1.3 FEDERAL OPTION

The mission for the BBDC in the umbrella organization scenario is based on the concept of a facilitator and organizer, connecting skilled people and organizations together, so they can provide solutions for issues related to Big Data and societal externalities. This is a federated community identifying and binding resources together.

BYTE should create the BBDC as a for profit foundation, with a charter clearly stating business objectives, transparency, openness, security, finances, budgets and profits.

The BBDC charter should also clearly state that the organization is engaged in building and delivering trust for its customers, and based on the fact that BBDC is chartered as a foundation makes it possible to act as a neutral and independent third party.

The BBDC charter should address how the BBDC will attract skilful people and organizations into a joint network capable of delivering technical, managerial, advisory, legal, security, and political services. The BBDC charter would not necessarily recommend the BBDC to lead and operate projects and activities, instead put more focus on facilitating the possibility for activities to happen. The charter will therefore be limited in terms of responsibility and potential liability.

The BBDC charter should describe the stipend-based, objective and independent advisory roles to support EU's Agencies, Institutions, Commission and Parliament, and National Governments. The role could be thought of as an Ombudsman or Accountant, appointed to ensure that public authorities develop, implements and complies with laws and other statutes for Big Data and its societal externalities.

The BBDC charter should also describe the role to arrange signature conferences and seminars, and the importance to bring users, customers, providers and researchers together. Collaboration and communication are key capabilities.

4.2 DEVELOPMENT PLAN EVOLUTION

The interim development plan for the BBDC is outlined in D7.1.1, chapter 5. It consists of three phases:

- Preparation – identifying the founding members, finalizing the charter and leading to the foundation of the community;
- Consolidation – involving the parties who have been already involved in BYTE workshops and activities;
- Expansion – reaching out to the rest of the BYTE contacts, which have not been engaged so far.

It indicates appropriate milestones at the end of each phase, for assessing and measuring its implementation, and possibly apply the necessary corrections. E.g., the consolidation of the BBDC will be assessed and measured during the WP7 community workshop.

We consider this structuring of the development plan to be quite robust, so as to accommodate the possible evolutions of the BBDC. Additional phases may be conceived, if need be. For example, should the BBDC evolve to require substantial financial resources, a possible future evolution of the development plan is to include a consultation phase, to assess what financial contributions to expect and from who.

The next chapter elaborates on the development plan for the Join & Merge option. In case this option becomes impractical, or undesirable, the development plan will be adapted to one of the alternative strategies. The following two chapters exemplify possible evolution scenarios of the BBDC, respectively towards an autonomous community and an umbrella organization.

4.2.1 JOIN & MERGE OPTION

The development plan of the first-choice Join & Merge option is also dependent on the development of the target organization (the BDVA in our initial hypothesis). The major benefit will be a flying start and exploiting an established contact network. As observed above, under this perspective, it may be foreseeable (or even desirable, as an indication of full success), that the BBDC eventually merge into the chosen initiative. In the medium to long term, the development plan of the Join & Merge option could include the following steps:

1. Preparation work for the foundation of the BBDC, decide upon the specialist vs. the facilitator type of community or a mix of both. Describe the current (and planned) network, dissemination, communication, organization, resources (staff and funding) and specialties;
2. Create an association, BBDC, consisting of the founding members of BYTE, transfer all BYTE intellectual property rights over to BBDC, so it can carry out negotiations with the target organization;
3. Negotiation topics:

    a. Agreed current state;
    b. Agreed final objective;
    c. What can BBDC contribute with?
    d. What can the target organization contribute with?
    e. New or improved funding opportunities;
    f. Positive impact on the Big Data market;
    g. Key staff resources, link to key customers;
    h. Joint charter and mission statement;
    i. Merging practicalities, such as leadership, staffing, renegotiating frame-contracts and agreements, locations and facilities;
    j. Joint communication and information;

4. Upon success of negotiations, merge BBDC and the target organization;
5. Move BBDC projects and activities to the new merged organization;
6. Communicate the successful merger to all stakeholders, internally and externally.

4.2.2 STAND-ALONE OPTION

The stand-alone scenario is based on the concept of a specialist community that is building knowledge and packages it into marketable services and products. The purpose of the BBDC in this scenario is to evolve societal externality services, network with like-minded people and organizations and offer services and expertise to customers with Big Data issues.

The development plan could include the following steps:

1. Preparation work for the foundation of the BBDC, decide upon the specialist vs. the facilitator type of community or a mix of both. Describe the current (and planned) network, dissemination, communication, organization, resources (staff and funding) and specialties;
2. Create an association, BBDC, consisting of the founding members of BYTE, transfer all BYTE intellectual property rights over to BBDC, so it can use that knowledge to create needed services and funding opportunities;
3. Initiate the first Societal Externalities projects, helping customers with their Big Data issues;
4. Market and communicate the results from the projects. Begin building a contact network of customers and specialists;
5. Compete with other communities on upcoming projects;

6. Engage in seminars, conferences, training, investigations, continue building contact and advisory networks. Use key people with extensive networks;
7. Participate in EU development project, to generate revenues.

4.2.3 FEDERAL OPTION

The umbrella organization scenario is based on the assumption that there is sufficient need from EU and National governments, industries, academia, and communities to collaborate on Big Data societal externalities.

The development plan could include the following steps:

1. Preparation work for the foundation of the BBDC, decide upon the specialist vs. the facilitator type of community or a mix of both. Describe the current (and planned) network, dissemination, communication, organization, resources (staff and funding) and specialties;
2. Create an association, BBDC, consisting of the founding members of BYTE, transfer all BYTE intellectual property rights over to BBDC, so it can use that knowledge to create needed activities, services and funding opportunities;
3. Create the BBDC Network, through personal contacts. From that network identify the most urgent networking topics to correctly address Big Data societal externalities. Setup and facilitate activities, seminars, conferences, investigations around these topics:

   a. Big Data risk analysis, Big Security;
   b. Big Data legal issues, Integrity, IPR and Copyrights;
   c. Big Data political;
   d. Big Data societal and ethics;
   e. Big Data economics;
   f. Big Data technological (integration and analytics);

4. Offer customers to setup "permanent" advisory functions to address societal externalities in terms of development, implementation and enforcement of rules, regulations, laws and standards;
5. Continue evolving the community and mission.

5. FUTURE WORK

This interim sustainability plan will be finalised in the third and final year of the project, incorporating the changes resulting from the preparation, consolidation and expansion phases of the BBDC.

As elaborated in D7.1.1, the preferred initial option is that the BBDC channel its contribution through the BDVA, into which it may eventually merge, around or after 2020. As the other options considered (Stand-alone and Federal) present significant strengths and opportunities that will be re-evaluated in the coming months and years, we will continue exploring the three options moving forward.

In particular, in the next months before the foundation of the BBDC, we will present the three options to the identified BBDC founding members and begin to get consensus and feedback around the initial preferred Join & Merge hypothesis. Besides, we will continue scoping funding opportunities, also in relationship to the overall evolution of the BBDC strategy. We will also make our value proposition for the EC on the chosen strategy, as an agenda item for the Year 2 review in April 2016.

After month 30, we will work on aligning the strategy and charter of the BBDC to the BYTE roadmap for policy and research, steering the expansion phase accordingly.

The above activities will allow us to refine the strategy and to achieve the most efficient and effective definition of the sustainability plan for the BBDC.

ANNEX A – LETTER OF INTENT BY FULL MEMBERS (DRAFT)

Draft letter of intent expressing commitment by Full Members to sustain BBDC operations until 2020.

Dear coordinator of the BBDC ,

We hereby submit a letter of intent to fulfil our obligations as a consortium member of the EU Project BYTE. The BYTE project is funded by the European Commission to assist European science and industry in capturing the positive impacts and diminishing the negative impacts of big data collection and processing. BYTE will culminate in the delivery of a research and policy roadmap to help Europe capture a greater share of the big data market by using big data responsibly.

BYTE will launch the BYTE Big Data Community (BBDC), a sustainable, cross-disciplinary platform that will implement the BYTE roadmap and assist Europe's large population of big data stakeholders in identifying and meeting big data challenges.
As a BYTE Consortium Member, we do support and commit ourselves to sustain the BYTE Big Data Community (BBDC) until 2020. If staff resources are not obtainable, it is then possible to allocate the equivalent contribution in money instead of time. Efforts required to do this, are estimated to:

- In kind contribution, of 120 hours/year (0,75PM), dedicated to the management and operation of the BBDC and research/consultation work on selected topics of interest. Included is also 1-hour monthly teleconference on the status and progress of BBDC;
- In kind contribution, of 1 participant to a meeting in the EU, e.g. annual BBDC workshop, annual Big Data Value Association (BDVA) Summit, or equivalent meeting relevant to the BBDC objectives (agreed with BBDC management).

As a Full Member, I do expect to receive:

- First-hand information on the implementation of Big Data Societal Externalities, which might have an impact on current technology, standards, legal, politics, security, ethical and economic pre-requisites.
- Visibility, as one of the leading organizations behind BBDC. Opportunity to market products and services.
- Invitations to participate or offer proposals for projects and activities.
- Invitations to participate in high-level EU-meetings and other significant meetings.