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1 Executive Summary

This report presents the dissemination and exploitation activities that has been undertaken during the EPIC project in order to achieve a sustainable future for the initiatives outcomes. It states clearly the modus operandi of EPIC partners in their effort to achieve sustainability objectives and strategies set within the specific timelines.

Furthermore, it defines a set of all publishable exploitable knowledge; it proposes concrete methods of how the knowledge arising from the project could be further exploited, both commercially and as a community of interest and describes positive sustainability actions that were performed during the project execution.

2 Introduction

2.1 Purpose

The dissemination of results and achievements is an important area of work for CIP projects. Promoting the project generates public awareness concerning a specific issue, endorses knowledge sharing, and attracts the interest of potential new partners and adopters. It is an opportunity to generate market demand for developed protocols, software, or devices and enhances the reputation of project partners at local, national and international level.

The EPIC project aimed to provide a way for Cities to deliver and share 'smarter services' in a flexible and cost effective way which would not involve large scale reorganization of their ICT infrastructure. The project was delivered in three phases (1) Planning and building of the EPIC solution, (2) Piloting and proof of concept of the solution (3) Results of the solution and sustainability packaging.

This document covers the dissemination and exploitation activities for the EPIC project from start to the end, highlighting the final year's activities. During this particular period the work focused on generating business scenarios that would provide a realistic and achievable plan for the continuation of EPIC after the initial CIP funding ends in the summer of 2013.

This deliverable (D9.4) is the final report on the outputs of the dissemination and exploitation activities undertaken in WP9.

The rest of this report is organized as follows: Section 3 presents all the dissemination related activities, Section 4 outlines the approach the Consortium adopted to deliver sustainability models, Section 5 outlines the business case for a commercial EPIC solution, Section 6 outlines the business case for an EPIC Community of Interest, finally Section 7 concludes with the outcomes of the final project Peer Review workshops where the sustainability outputs are shared with potential adopters.

2.2 Audience

This deliverable is released for the public audience. It is primarily addressed to the project partners and reviewers. Although, it could be useful to other stakeholders as it gives an overview of potential activities in order to successfully implement smart city projects and information about the exploitable knowledge that arises from the project. Moreover, it could be useful to representatives from industry, specially related to smart cities and use of Cloud, as it gives information about potential take up of the solution in terms of requirements and effort needed.

3 Dissemination Report

3.1 Objectives

During the three years of the EPIC project, partners have undertaken a wide variety of communication and outreach activities based upon the projects Dissemination Plan. The key objectives outlined in the plan are for EPIC to:

- Plan and execute dissemination activities throughout the project lifetime to diffuse findings across Europe
- Establish close interaction with Smart City networks and execute cooperation activities
- Increase public awareness of the European Commission's Smart City activities
- Generate positive media coverage for the project at a local, national and European level
- Organize 'peer reviews' in the form of a dissemination event to interested stakeholders to share EPIC's goals and achievements and to gather valuable feedback and information
- Understand customer needs and potential markets for future deployment
- Choose an appropriate sustainability model
- Put the sustainability model into action

The detailed dissemination plan for the EPIC project can be found in D9.1. At the beginning of the project, communication material, including brochures, flyers and social media channels were created for the promotion of EPIC. A project web site was created at www.epic-cities.eu which was updated with news related to EPICs activities. The web site also gave visitors access to project deliverables. More information about the web site, and social media can be found in the following sub-sections.

Pilot site partners were responsible for promoting EPIC and engaging users at a local level, whilst WP9 partners led European level communication and dissemination efforts. The later phase of the project focused more on accessing networks and building relationships with potential champions, adopters and or funders of EPICs future business model.

The table below provides a summary of how EPIC met each of the objectives during the three phases of the project. The following subsections review the major dissemination activities that were undertaken during the project, in order to provide lessons learned that could benefit future marketing activities for EPIC as well as other smart city projects.

WP Objectives	Progress Made 1st period	Progress Made 2nd Period	Progress Made 3rd Period
Plan and execute disseminati on activities throughout the project lifetime across Europe	The EPIC Strategic Communication Plan (D9.1) was drafted during this first reporting period. The Plan details the strategy for dissemination along with an overview of the stakeholders to be targeted and the tactics to be used. As planning is a continual process, an updated version of the plan will be produced during the next period before the platform and its services go live.	EPIC has been represented and presented at over twenty large events across Europe including key note speeches at the EU Ministerial Conference in Poznan and the Major Cities of Europe conference in Helsinki. Future events in the pipeline include an Open Data Day in Brussels, Belgium in June and Sustainable Smart Cities event in Uppsala, Sweden. Information about the events where EPIC has been disseminated can be found on the project website. A white paper about EPIC and the need for Cloud Computing in the public sector was accepted and published by the eChallenges conference. The EPIC Facebook page (cloud in the city) has been active with 146 members, and the project website has had over 2,400 visits since June 2011. The second project newsletter was distributed at the end of April/start of May and the team preparing press releases to support the official launch of the platform	During the third period, EPIC has been represented and presented at nearly thirty large conferences and workshops across Europe, including the Cypriot Presidency eGovONE event in Cyprus, Eurocities Knowledge Society Forum conference in Nuremburg, and the Connected Smart Cities Workshop in Dublin this May. Through this exposure EPIC has attracted the attention of many large corporate actors in the marketplace such as Oracle and Microsoft who have come to the project asking for Smart City advice. The project website has had over 6,000 new visitors since the last reporting period with half of the viewer's returning for more than one visit. The Facebook page has grown to 165 members who regularly post and share content. The next project newsletter is due in June and will be distributed at the forthcoming EPIC Peer Workshops taking place in Samos, Greece in July and Manchester, UK in August.

Establish close interaction with Smart City networks and execute cooperation activities	EPIC has established links with Smart Cities, Interreg IV8 North Sea Region Programme, Eurocities, Global Cities Dialogue and SOCITM and will work with these groups once the platform is live to promote the project. EPIC has also supported the drafting and launch of the Citadel Statement, a pan-European 'Call to Action' to help local gov deliver on the key objectives of the Malmo Ministerial Declaration	EPIC has worked closely with the following Smart City projects and Networks: • Attended launch of new *Citadel on the Move* smart cities project to explore ways of leveraging the EPIC Service Catalogue for the hosting of Citadels new services. • Meetings with the projects *Peripheria* and *Smart SDK* to look at ways resources and best practices can be shared to enhance the values of each other's projects.	EPIC continues to work closely with the Citadel project over sustainability planning. In addition: • EPIC Partner 21c was invited to share EPIC experiences and be a founding member of the *Pudong Smart City Research Institute* in Shanghai • EPIC contributed to the *United Nations* working group on eGovernment • EPIC participated in the *Zagreb Forum on Creative Cities in Europe* sharing knowledge about open innovation ecosystems and the use of cloud
Increase public awareness in the European Commission 's Smart City activities	EPIC has worked closely with the Smart Cities Portfolio set up by the European Commission and has taken the lead in (a) drafting the original press release about the Portfolio and (b) organising dissemination activities with the Portfolio members (like the recent Bled eGovernment conference panel on Smart Cities. EPIC will continue its support in promoting the Europeans Commissions Smart City activities throughout the project.	EPIC hosted a panel for the Smart Cities Joint Working Group at the Bled eGovernment Conference in June 2011, and has shared a stand with related projects at the Global Forum Conference in Brussels. In the numerous conference speeches that EPIC has featured in over the past year, the Commission's work on Smart Cities has been highlighted before EPIC has been introduced. In addition EPIC has been working to foster greater cooperation between the Commission and the Gulf in the area of Smart Cities.	EPIC continued its cooperation with the Smart City Joint Working Group – led by Manchester - through shared activities with the Eurocities Knowledge Society Forum (KSF) and other events, including but not limited to the Intelligent Communities Forum conference in New York, June 2012, Living Labs Summer School in Helsinki, August 2012, Smart Cities conference in Cyprus, Sept 2012, the Future Everything Festival: Manchester, March 2013 and the Future Internet Assembly, Dublin, May 2013. In addition cooperation with the Gulf States continued through meetings with the Kingdom of Bahrain.

Organise peer reviews in form of an event	Not a focus during this period. Work will begin in next period.	EPIC hosted and ran a smart cities workshop at the Bled eGovernment conference in 2011. The EPIC team will host a similar event towards the end of the project and are currently exploring potential events at which to do so.	EPIC has planned two final dissemination/peer review events for the end of the project. Event 1 will take place at the Samos 2013 Summit on Digital Innovation for Government, Business and Society. Event 2 leverages the power of the ENoLL European network by taking place in their summer school hosted by EPIC pilot partner Manchester in August.
Understand the markets for future deployment	Not a focus during this period. Work will begin in next period.	EPIC undertook a market analysis exercise which involved a combination of desktop research, informal interviews with key stakeholders at conferences and workshop discussions between the team in order to produce the Market Research Report D9.3.	Based on the outcomes of the Market Research Report as well as talks with key stakeholders and influencers, EPIC was able to refine its differentiation in the marketplace, identify new competitors and more accurately estimate market size. Enhancements to the Market Research are outlined in D9.4.
Chose an appropriate sustainability model	Not a focus during this period. Work will begin in next period.	A three pronged approach to sustainability was created and chosen by the Team as it offers the maximum flexibility for the project offerings to be taken up by Cities at different points of their smart city journey.	The sustainability approach was split into 5 potential business scenarios which EPIC Partners could choose to support. A series of face-to-face workshops, teleconferences and meetings with stakeholders helped to refine each solution.
Put the sustainability model into action	Not a focus during this period. Work will begin in next period.	Not a focus during this period. Work will begin in next period on pulling together the Business Case using feedback from the piloting. The pilots will form the centre pin of putting the sustainability model into action.	EPIC is following up on each of its potential business scenarios as highlighted by the setting up of a specific 'Community of Interest' in ENoLL and its entry into an incubation grant competition under the iMinds iStart scheme.

3.2 Events and Conferences

In order to build awareness of EPIC across Europe, the Consortium decided it was important to meet stakeholders and future potential adopters face-to-face in order to start building long-lasting relationships that can eventually be used to support future sales. Therefore, a key focus of the project was the securing of influential speaking slots at major events across Europe. As can be seen from the table below, EPIC was presented or represented at over 40 major eGovernment conferences over a three year period:

Event	Date	Activity
Bled eGovernment Conference, Slovenia	13-15 June, 2011	Hosted dedicated Smart Cities panel for the Smart Cities Joint Working Group
PICNIC Festival 2011, Amsterdam	14 September 2011	EPIC was present in a track session co-organised by ENoLL called Living Networks, Urban labs, as an example of user-driven open innovation applied in the Smart City context.
5th International Conference on Theory and Practice of Electronic Governance (ICEGOV2011), Tallin, Estonia	28 September 2011	Used EPIC as a prime example of how Living Labs can help co-create services through working with citizens and SME's to help a city become 'smarter'
"Future Internet – Smart Cities – Coming your way…", Brussels. Side event of the 3rd Innovation Summit	11 October 2011	A workshop, held in the European Parliament in Brussels, that discussed the linkage between Future Internet PPP and European digital cities, One session on the Smart Cities of the Future, another session on existing Smart City pilots where EPIC was present establishing links with the FI-PPP core platform (FI-WARE) and the relevant
eChallenges Conference, Florence	26-28 October, 2011	Promoted EPIC white paper through speech on a panel and networking
Future Internet Assembly, Poznan, Poland	26 October 2011	EPIC represented in one of the FIA sessions called "When Infrastructure meets the user" that addressed the need for broad based participation into the requirement specification and co-creation of the technology platform to support multiple use cases and add value for regional and European users, while advancing the implementation of the Digital Agenda in Europe. EPIC continued the dialog with the FI-PPP uses cases and the FI-WARE platform started during the workshop held in during the 3rd Innovation Summit

Global Forum, Brussels	7 November, 2011	EPIC represented on a dedicated stand and through project partners speaking on various panels
Public Sector Enterprise ICT Conference, London	15 November, 2011	Networking event, handing out leaflets and talking to cloud competitors
EU Ministerial Conference, Poznan	17 November, 2011	Delivered keynote speech on Living Labs and Social Media using EPIC as a best practice example
Smart City Workshop at the Institute of European Studies (IES) at the University of Brussels (VUB)	7 December, 2011	Gave a lecture on what is a smart city, the benefits of being smart and the sharing of best practice, using the EPIC project as a ground breaking example
ePractice Workshop, Seamless eGovernment	20 December, 2011	Presented EPIC as an effective way to create services and share them across borders
FIREBALL-SMART CITIES final workshop, Brussels	25 January, 2012	EPIC presentation during the final FIREBALL-SMART CITIES workshop held in Brussels on Jun 25th. The presentation was part of the session 3, moderated by Mr. Pekka Sauri (deputy Mayor of Helsinki city).
Fraunhofer Ministerial Meeting, Bonn	11 January 2012	Official visit from. Dr. Scheermesser from the Ministry of Innovation, Science and Research of North Rhine Westphalia. EPIC was presented which stimulated much discussion around the use of cloud computing in the public sector.
Euromediterranee Marseille Development Meeting, France	25 January, 2012	Introduced the benefits of using a cloud platform like EPIC to Marseille development agency at a meeting with local ICT SME's
Citadel on the Move Smart City CIP Project launch, Ghent	1 February, 2012	Attended the Citadel on the Move kick off meeting and explored ways the projects could support each other
Qitcom ICT Conference, Qatar	5 March, 2012	Gave speech on using Living Labs to help build smart cities with EPIC as the key example.

Bahrain eGovernment Forum	9 April, 2012	Presented EPIC updates to new delegates and
Conference Call with Smart City Pudong research Institute in Shanghai	May, 2012	Set up link with Smart City Pudong research Institute in Shanghai who have ICT experts interested in how EPIC has been deployed
CeDem 12, Krems	3 May 2012	Presented EPIC as a solution to help Cities work more effectively. Networked and distributed flyers and the White Paper.
ICONET-GCC, Abu Dhabi	6 May 2012	ICONET-GCC, is a European Commission funded project to develop and support the bi-regional dialogue between the Gulf Cooperation Council and EU Member States. EPIC was presented during a presentation focusing on smarter energy use.
Future Internet Assembly, Warsaw	10 May 2012	Presented EPIC and the Citadel project as a cost-effective means for public administrations to adopt for creating smarter cities.
Offentiga Lummet Conference, Uppsala	30 May 2012	Keynote address and presentation featuring EPIC entitled 'Turning Turtles into Gazelles,' discussing challenges and opportunities that Open Innovation presents for the public sector in terms of delivery more citizen-centric services.
Cloud Computing World Forum, London	12 June 2012	Networked. Checked out potential competitors, and distributed EPIC leaflets
Open Data Event, Flanders	15 June 2012	Presented EPIC with the Citadel on the Move project as Smart City Innovation ecosystems to senior Flanders civil servants. Established interest from Ghent in any future smart city cloud projects
Bled eConference	18 June 2012	Networked and shared EPIC updated with delegates who had attended last year's smart city workshop. Featured EPIC in an eParticipation presentation.

W3C Using Open Data Workshop	19 June 2012	Participated in the workshop to learn about standards for creating smart services using open data. Shared with delegates the idea that EPIC could be the smart services marketplace for all these newly created services across Europe.
Samos Summit eGovernance and Interoperability	2 July 2012	Delivered speech on Smart City innovation featuring EPIC. Established links with the GoForesight Institute to find a way to bring Smart City expertise to Eastern Europe. Arranged for EPIC to have a workshop at next year's event.
PICNIC Multimedia Festival, Amsterdam	17 September 2012	Included EPIC in discussions on smart city and cloud computing in Manchester.
Smart Cities Conference, Cyprus	24 September 2012	Presentation about Manchester's aspirations as a smart city and the role of cloud computing – included EPIC as an example.
Slovenia Forum on Energy Efficiency	20 September 2012	Presented EPIC during Smart City focused speech, in particular mentioning the energy pilot in Manchester.
Cambridge eInclusion and Digital Public Services	25 September 2012	Networking event, distributed EPIC brochures throughout the conference
ITAPA, Slovenia	25 October 2012	The Slovakian Ministry of Justice invited EPIC to deliver a keynote address about how Open Innovation and the Internet of Things hold the key to making cities smarter.
Smart Cities Exhibition, Bologna	30th October, 2012	Discussions about living labs in Manchester – included EPIC as an example
EUROCITIES Knowledge Society Forum (KSF) Conference and World Congress, Vienna	23rd Oct 2012	Manchester presented activity in projects including EPIC as a living lab example.
Global Forum, Stockholm	12 Nov 2012	Presentation featuring EPIC on how Smart Cities can use cloud and IoT to tap into the innovation potential of their SMEs to deliver more effective and efficient services.

EUROCITIES AGM, Nantes	9th Nov 2012	Included EPIC as an example of cloud activity.
Smart Cities: Planning and Operation of Future Urban Energy Systems, Manchester	5-7 Nov 2012	Three day course on smart cities and future energy. EPIC was included in discussions about smart cities and as an example of activity in action to address energy issues.
EU Presidency eGovONE Conference, Cyprus	5 Dec 2012	Presentation on eGovernment: What's in it for Citizens? Used Citadel as a powerful example of engaging citizens in the design of services (within the context of pre-determined policy) through open innovation initiatives.
Agoria Event, Brussels	14 Jan 2013	Cocktail event with Microsoft to discuss how the cloud approach could be used by a network of open innovation hubs to stimulate service innovation.
Horizon 2020 Workshop, Brussels	31 Jan 2013	Fed lessons learned from the EPIC project into discussions about the forthcoming 2020 agenda
ICT PSP Info Day, London	7 Feb 2013	Networked, met other practitioners to find out about competitive offerings coming up in the marketplace
Future Everything Festival, Manchester	21 March 2013	Included in presentations and discussions of Manchester projects and open data workshop.
BIS Smart City Event	3 March 2013	EPIC featured in a workshop entitled 'Smart Cities – The Need for Interoperability' hosted by the UK Government's Business Innovation and Skills Department
Zagreb Forum on Creative Cities & Europe	12 March 2013	Used address to promote EPICs Innovation approach and Roadmap as key starting points in any Smart City journey.
ONE Conference, Prague	18 April 2013	Presented EPIC as a Smart City Innovation ecosystem during an eParticipation Panel.
Global Forum Steering Meeting, Brussels	22 April 2013	Ensured Smart Cities and the creation of smart services are on this year's agenda.
Connected Smart Cities Workshop, Dublin	7 March 2013	EPIC presented in a workshop as well as on a joint Smart Cities Portfolio stand.

From analysis of the table, as shown in the chart below, the majority of the dissemination events involved the presentation of EPIC on a panel (52%), followed closely by EPIC being used for a keynote address or panel chair (33%), EPIC also featured on conference stands and in smaller meetings (15%).

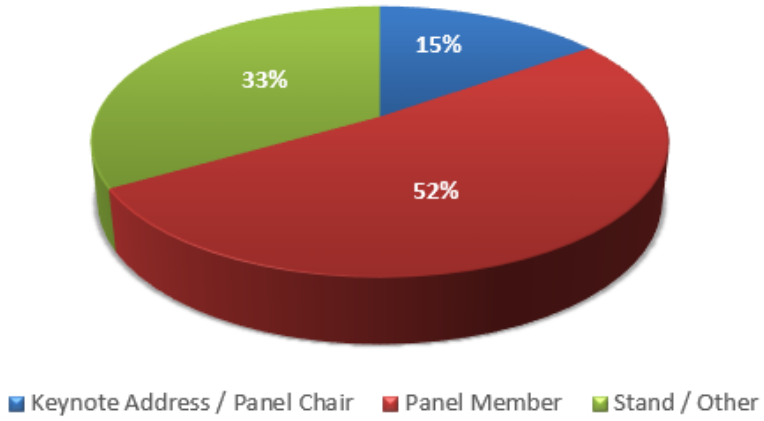


Figure 1: Dissemination Split by Activity

In terms of the focus of each of the events that EPIC attended, we can see that the majority of conferences were focused on the broad remit of eGovernment (48%), or the more focused topic of Smart Cities (41%), events focusing specifically on Cloud came to a smaller percentage (11%). This smaller segment was due to the fact that many Cloud conferences were privately hosted and charged large sums of money

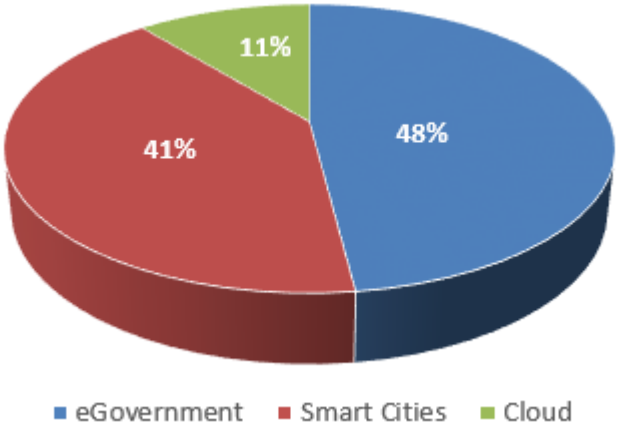


Figure 2: Conferences Split by Area of Focus

Website and Social Media

The project website – www.epic-cities.eu - and its social media channels were established in 2011. Google analytics was added to the website during the end first year of the project. As the analytic tool was not in function from the start, the actual visitor figures may be higher than anticipated.

Google Analytics gives the following statistics for the EPIC website (July 2011 – May 2012): The total number of visits was 8,188 with a total number of 22,198 page views. Figure 3 presents the number of weekly visits.



Figure 3: Weekly Visits to the EPIC Project Website

There were 5,729 unique visitors from 110 countries/territories (see Figure 3). The top four countries in the number of visits were Belgium (1,137 visits), United Kingdom (865), Spain (752) and France (748). Spain and the United States (496), were the top visiting countries outside the EPIC partner countries.

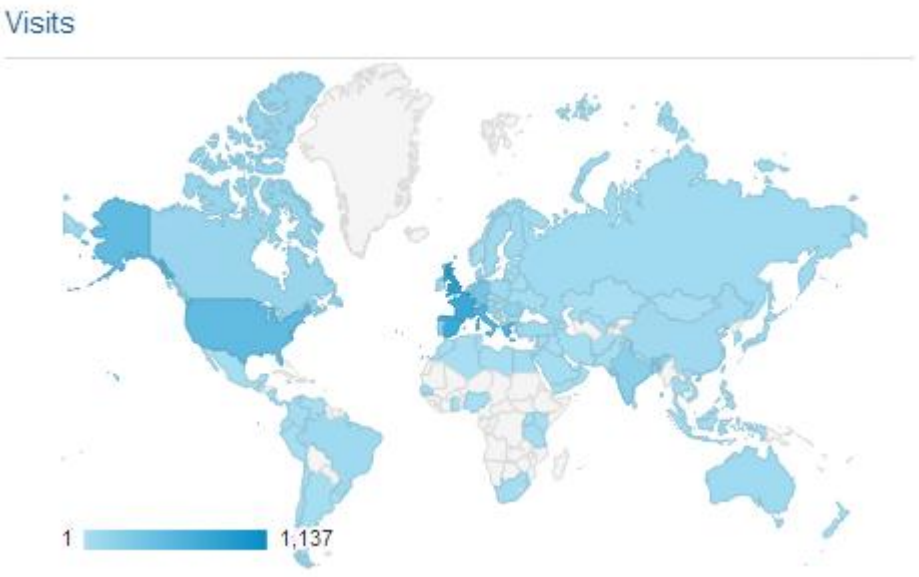


Figure 4: Visit Density per Country

Each visitor spent on average 3 minutes on the site and viewed on average 3 pages. Returning visitors spent over four minutes on the website.

The most viewed page was the home page (28.7% of all page views), followed by the Smart Cities page (11.5%), the Smart Cities Portfolio (7.2%), the Vision (6.03%) and Cloud Computing (5.2%). The least viewed pages were the ones that were most regularly updated – results and news.

		22,198 % of Total: 100.00% (22,198)	22,198 % of Total: 100.00% (22,198)
1.	/	6,383	28.75%
2.	/content/smart-cities	2,559	11.53%
3.	/content/smart-city-portfolio	1,603	7.22%
4.	/content/vision	1,399	6.30%
5.	/content/cloud-computing	1,170	5.27%
6.	/content/epic-partners	959	4.32%
7.	/content/approach	723	3.26%
8.	/results/publication	616	2.78%
9.	/results/deliverable	612	2.76%
10.	/news	565	2.55%

Figure 5: Number of EPIC Website Page Views

As Figure 6 presents, half of the visitors came to the site by clicking on EPIC from an internet search engine (mainly Google). Around a quarter of visitors came from direct access by typing the URL into a browser and a further quarter through referrals from other websites including ec.europa.eu, Citadelonthemove.eu and Apollen-pilot.eu.

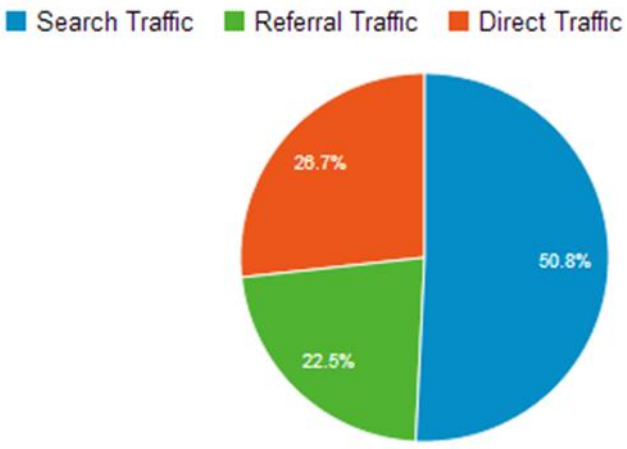


Figure 6: EPIC Traffic Sources

The pie chart below shows that out of these visitors, 30% came back more than once. This figure is to be expected for a website that is 'informative' in nature, rather than 'interactive'.

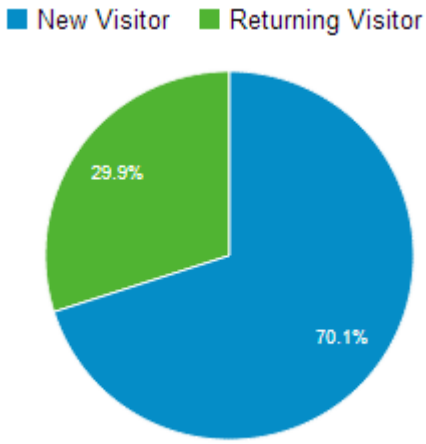


Figure 7: New v's Returning Visitors to the Project Website

In addition to the website the project utilised two social media channels, Facebook (Cloud and the City) and Twitter (Cloud in the City). Facebook was the most popular social media channel because status posts were linked to a particular person and debate was more easily encouraged. The Facebook grew to 165 members, with 33 users making regular posts. Of these posters around half came from the project team with the rest being outside the project. On average each post was viewed by around 71 members. The Twitter channel had more than 200 followers and mainly retweeted interesting content from other projects.

3.3 Smart Cities Portfolio Support

The Smart Cities Portfolio[1] was created as a Working Group with the objective of bringing together leading Smart Cities across Europe mainly through the 'Smart Cities' projects funded under the 2010, 2011 and 2012 Competitiveness and Innovation Programme (CIP) Objective: 'Open innovation for future Internet-enabled services in 'smart' cities':

[1] Smart City projects are all designed to help cities deploy ICT in new and innovative ways that enable them to become 'smarter' by developing the smarter, digital, greener and more inclusive economies that need to emerge after the recession. In particular, the projects are structured to enhance the role that the 'networked Living Labs approach' [2], which involves citizens and business alike in service design and creation, can play in supporting innovation in ICT and Internet-based services - especially for SMEs.

The Smart City projects were firstly convened on November 18th 2010 during the City of Helsinki's "Connected Smart Cities Conference – towards digital, sustainable and open communities"[2]: EPIC has highly contributed to all the activities organised from the official launch. ENoLL, as supporting organisation of Smart City portfolio has been heavily involved in the preparations and reports of all the Smart City portfolio event and activities. EPIC has contributed not only through ENoLL as an EPIC partner but also providing relevant content and speakers in all possible occasions. The table below describes all the relevant activities performed in the context of the Smart City Portfolio, EPIC contributions and evidence. Please note that some of these events have already been detailed in the overall Conference section.

No	Event	Description
1	Conference Connected Smart Cities, Helsinki, November 2010.	During the day, a wide range of those interested in future internet, user-driven innovation in city contexts especially through living labs enjoyed the opportunity of meeting and learning from each other; discussing and clarifying common goals and different experiences; hoping to shape concrete strategies for Smart City advancement. Among the speakers Prof. Dr. Pieter Ballon (EPIC, ENoLL Secretariat), Dave Carter (ENoLL Council member, MDDA) and Dr. Alvaro de Oliveria (ENoLL President) and the afternoon event was moderated by ENoLL Vice President Jarmo Eskelinen (Forum Virium Helsinki).
2	ENoLL, Eurocities matchmaking event, Brussels, Feb 2011	http://www.openlivinglabs.eu/event/enoll-eurocities-joint-matchmaking-event. Co-organised by ENoLL. Prof. Pieter Ballon presented EPIC in the agenda item: Experiences in the last call (success and lessons learned)

[1] http://cordis.europa.eu/fp7/ict/fire/connected-smart-cities/csc_en.html
[2] http://www.openlivinglabs.eu/news/%E2%80%98smart-cities%E2%80%99-centres-user-driven-open-innovation

3	Connected Smart Cities Workshop, Helsinki, August 2011	http://www.openlivinglabs.eu/news/enoll-drives-connected-smart-cities-network EPIC included in the ENoLL presentation in that event as an example.
4	PICNIC Festival, Amsterdam, September 2011	One of the tracks, organized together with Amsterdam Living Lab, Fireball, Open Cities and the European Network of Living Labs, was a special day at the focused on the contribution that living labs make in Smart Cities development, showcasing more than 20 presentations, state-of-the-art smart cities projects from the members of the European Network of Living Labs and other interesting initiatives on eHealth, durability and energy, mobility and open data. http://www.openlivinglabs.eu/news/what-picnic Prof. Pieter Ballon presented EPIC: The worlds of Living Labs, as user-driven innovation plaftorms, and Smart Cities, as public administration-driven initiatives to improve urban quality of life, are increasingly coming together. In his presentation, Pieter Ballon gives concrete examples of Living Labs acting within an urban context, and smart cities aiming to become innovation labs. He also sketches the way forward for Urban Labs if they want to become successful and sustainable hotbeds for innovation
5	Future Internet Conference, Poznan (October 2011)	Pieter Ballon (IBBT) presented snapshots of how the Living Labs approach is incorporated in one of the smart cities pilots, namely the EPIC project (European Platform for Intelligent Cities) and the APOLLON project, one of the first generation of CIP-projects doing Living Labs testing through the ENoLL community. In EPIC, three different applications are being piloted simultaneously in Manchester (energy monitoring), Issy-Le-Moulineux (3D city community platform for urban planning) and in Brussels (augmented reality application for expat relocation services). The common denominator for all these pilots is that they are all using the Living Lab approach. Programme: http://www.event.fi-poznan.eu/online/?view=session&session_id=260

6	Future Internet Assembly, Aalborg (May 2012)	ENoLL organized two workshops in conjunction with the Future Internet Week in Aalborg in May. The first pre-conference event was dedicated to the Connected Smart Cities Portfolio Working group, presenting many of the different Smart City-project, funded under the ICT PSP –programme of the European Union. On the second the Official FIA session "Smart city applications and services' addressing how to build Future Internet based applications and services in the smart city context from different perspectives. Video recording of the 1st session: http://vimeo.com/43658734, http://vimeo.com/43663886 Programme: http://www.fi-aalborg.eu/downloads/Session_SmartIP_ENoLL.pdf Video recording of the 2nd session: http://vimeo.com/43667717, http://vimeo.com/44644047 Programme: http://www.future-internet.eu/home/future-internet-assembly/aalborg-may-2012/21-smart-city-applications-and-services.html
7	User-driven Open Innovation ecosystems go really local … across borders. (Final Apollon event), Mechelen, May 2013	Although focused on the Apollon project results (contributor to the Smart City Portfolio), this event had an impact in the Smart City portfolio activities. EPIC was mentioned by ENoLL as an example of project. http://events.iminds.be/en/user-driven-open-innovation-ecosystems-go-really-local-%E2%80%93-across-borders
8	Connected Smart Cities workshop, Brussels, 2012	Private event for Smart City Portfolio. Presentation from EPIC and contribution to the different discussions.
9	Consultation workshop on FIRE in H2020 (Brussels, Sep 21)	http://cordis.europa.eu/fp7/ict/fire/events/20120921-fire-open-consultation/workshop/fire-in-h2020_en.html Although EPIC was not directly involved with a presentation, Smart City portfolio was, as well as ENoLL, who was very much involved in the discussions and the writing exercise of the final report of the session Smart Cities as Experimental Platforms. All the info can be found in the provided link.
10	FIA Dublin	Contributions from EPIC to the Connected Smart City session during pre-FIA with a presentation and providing promotional material for the session and the stand. http://www.fi-dublin.eu/pre-fia-workshop-list/

3.4 Conclusions and Lessons Learned

This chapter identifies the key lessons learned as they relate to the stated objectives of the Dissemination Work Package. Success factors will be used to bolster EPIC's ongoing sustainability:

WP Objectives	Lessons Learned

Plan and execute dissemination activities throughout the project lifetime across Europe	• Face to face engagement with key stakeholders is the most effective form of engagement
	  ○ Speakers and attendees at every conference should make every effort to identify and meet with target stakeholders
	• Interactivity is the key to effective online engagement
	  ○ News should feature prominently on the home page of the website to attract maximal attention
	  ○ Simply posting on sites like Facebook is not enough. Project partners must make a collective effort to engage in ongoing discussion and debate
	• It is difficult for EU projects to gain high profile access to commercially oriented conferences in the ICT world as speaking slots are generally reserved for sponsors
	  ○ Wherever possible, EPIC should try to 'piggy back' on the sponsorships of larger ICT players within the consortium
	• European dissemination activities have a strong cross over to the North American market but not Asia
	  ○ To ensure maximum exposure, EPIC should make an effort to focus targeted dissemination activities on key Asian markets such as South Korea and China

Establish close interaction with Smart City networks and execute cooperation activities	• Clustering with related projects provides a relatively quick and easy way to exponentially increase dissemination exposure
	  ○ EPIC should continue to pro-actively leverage the networks and relationships established via the Smart City network
	  ○ EPIC should leverage the ENoLL network to validate its products and brand
	  ○ EPIC should make a strong effort to use the ENoLL MarketPlace, in particular, to promote its commercial service offerings
	  ○ EPIC should leverage forthcoming network events such as the November 2013 Eurocities Conference with will gather mayors from across Europe to launch its 'go-to-market' campaign.

Increase public awareness in the European Commission's Smart City activities	• Stand alone EPIC dissemination activities such as speeches and pamphlets present a quick and easy way to showcase the Commission's wider Smart City agenda • Embedding EPIC within the Commission's Smart City portfolio of activities increases the projects overall credibility with key stakeholders such as public sector members of ENoLL and senior civil servants at the national and European level
Organise peer reviews in form of an event	• Organising peer review sessions in conjunction with established, high profile events provides more 'bang for the buck' ○ As high level attendance is guaranteed, project partners can concentrate on preparing top quality presentations and pre-arranging face-to-face meetings with key stakeholders ○ Leveraging an existing event also provides an opportunity for EPIC to maximise its exposure on multiple levels i.e. speaking slots, workshops, demos
Understand the markets for future deployment	• There is no substitute for talking one-on-one with potential buyers, including public sector project partners ○ Personal relationships are key to accessing key decision makers ○ Cold calling is ineffective as public administrators want the confidence of knowing that an offering is credible amongst their peers ○ Speaking opportunities and sponsorship at public sector events is key to building personal relationships • There is currently no market for pan-European sales of Smart City applications to small-to-medium sized cities ○ EPIC's pioneer status presents an opportunity in terms of a lack of competition ○ On the other hand, it presents a challenge in terms of the need to create market awareness and understanding ○ Again, personal relationships and peer-to-peer credibility are key to success

Chose an appropriate sustainability model	• Don't underestimate the challenge of pan-European procurement
	  ○ Each country and indeed city has differing procurement rules and needs making a one size fits all model extremely difficult when it comes to public services
	• In charting sustainability, it is critical to get input from all project partners
	  ○ Private sector partners will be able to provide first hand strategic insight into the marketplace and effective sales and marketing tactics
	  ○ Public sector partners will be able to let the consortium know what the public sector truly needs and which tactics are most likely to succeed or fail

Put the sustainability model into action	• It is never too late to pursue sustainability
	  ○ IPR issues should be resolved at the start of the project
	  ○ The consortium should be clear from the outset which partners are and are not interested in engaging in long-term commercial activities
	• Achieving sustainability requires long term commitment and activity from partners
	  ○ Partners need to be able to share their skills, resources and networks in pursuit of start up opportunities

4 EPIC Sustainability Approach

4.1 Methodology

Armed with knowledge from the Market research phase, WP6 and WP9 decided that in order to create a Business Roadmap and Business Plan for EPIC, a more collaborative approach was needed in order to extract valuable information from partners – therefore a series of sustainability phases were set.



Figure 8: Four Phases of Business Planning

Brainstorming
The first phase involved extracting thoughts, ideas and experiences from partner stakeholders through a detailed interview process. The results were consolidated and used to prepare a sustainability workshop where the results of the interview process were shared. Patterns were established and informed brainstorming about future business scenarios could take place.

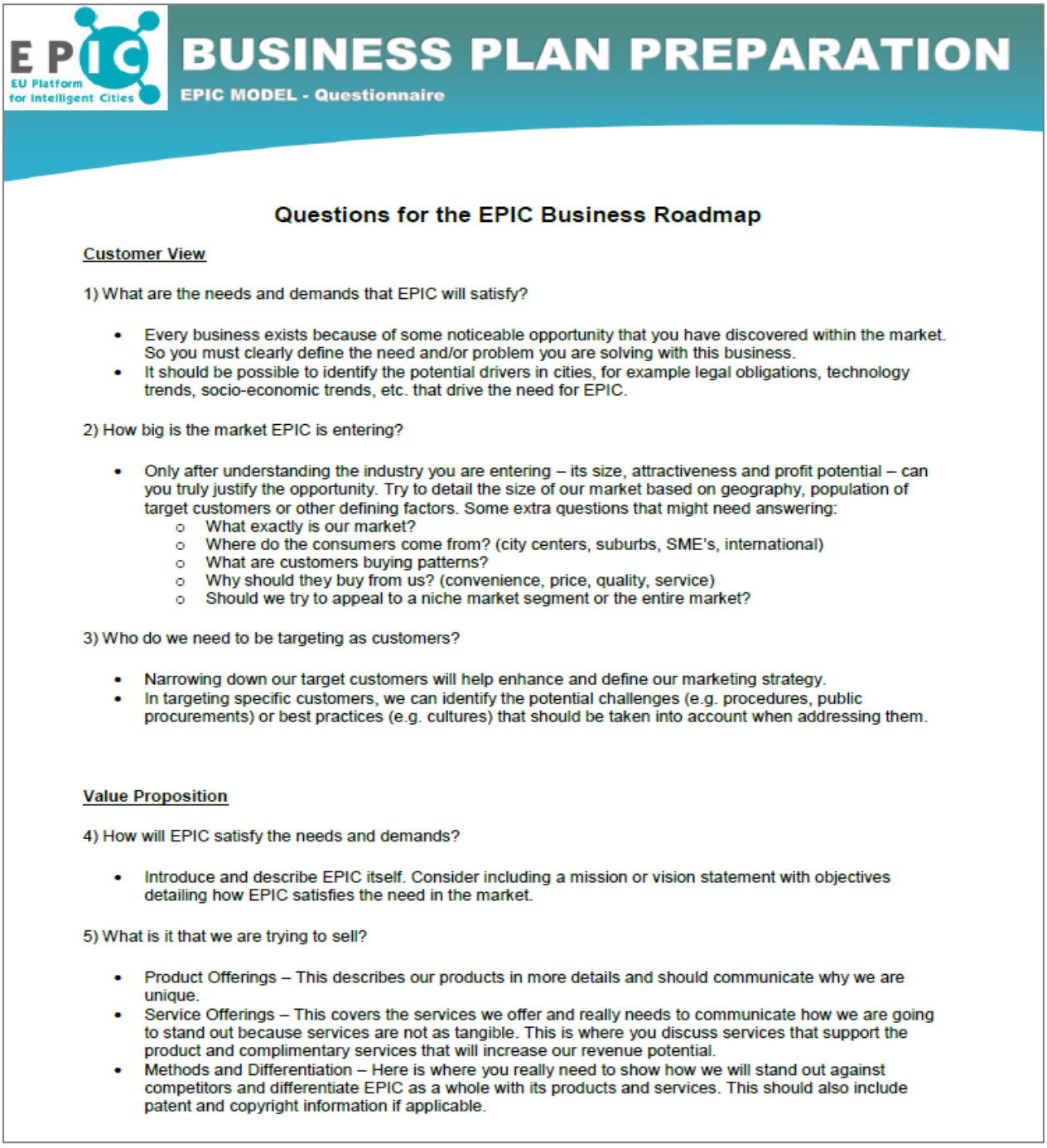
Consolidation
Once a range of sustainability scenarios were created and written up, Partners had chance to vote to join one or more of the scenarios that they would be willing to support in order to explore and draft a future Business Plan.

Commenting
The third phase involved discussions and activities within the Scenario Working Groups to start drafting the business plans. The EPIC Roadmap for Smart Cities (D6.3) and this deliverable (D9.4) was drafted during this process.

Finalisation
The final phase involves ensuring structures are put in place to ensure the continuation of EPIC after the end of the project as well as the updating of D9.4 (through the addition of Workshop Reports as Annexes) based on feedback from the final dissemination workshops.

4.2 Stakeholder Interviews and Results

As outlined in the Brainstorming Phase a three part interview was conducted by WP6 and WP9 of all fourteen project partners to gain a more detailed understanding of the customer view, value proposition and operation view that a future EPIC business model could have.



EPIC EU Platform for Intelligent Cities

BUSINESS PLAN PREPARATION

EPIC MODEL - Questionnaire

Questions for the EPIC Business Roadmap

Customer View

1) What are the needs and demands that EPIC will satisfy?

- Every business exists because of some noticeable opportunity that you have discovered within the market. So you must clearly define the need and/or problem you are solving with this business.
- It should be possible to identify the potential drivers in cities, for example legal obligations, technology trends, socio-economic trends, etc. that drive the need for EPIC.

2) How big is the market EPIC is entering?

- Only after understanding the industry you are entering – its size, attractiveness and profit potential – can you truly justify the opportunity. Try to detail the size of our market based on geography, population of target customers or other defining factors. Some extra questions that might need answering:
  - What exactly is our market?
  - Where do the consumers come from? (city centers, suburbs, SME's, international)
  - What are customers buying patterns?
  - Why should they buy from us? (convenience, price, quality, service)
  - Should we try to appeal to a niche market segment or the entire market?

3) Who do we need to be targeting as customers?

- Narrowing down our target customers will help enhance and define our marketing strategy.
- In targeting specific customers, we can identify the potential challenges (e.g. procedures, public procurements) or best practices (e.g. cultures) that should be taken into account when addressing them.

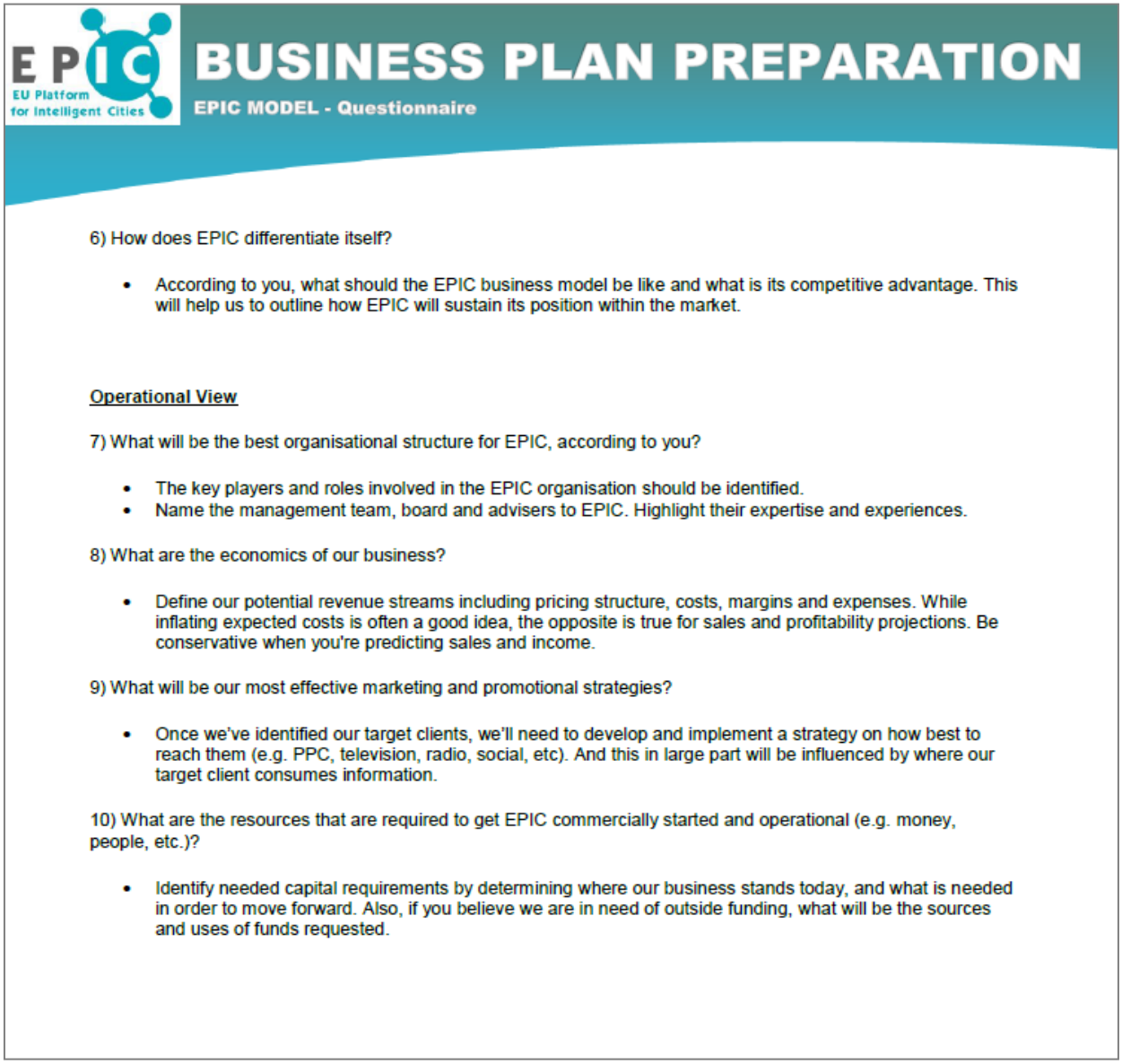
Value Proposition

4) How will EPIC satisfy the needs and demands?

- Introduce and describe EPIC itself. Consider including a mission or vision statement with objectives detailing how EPIC satisfies the need in the market.

5) What is it that we are trying to sell?

- Product Offerings – This describes our products in more details and should communicate why we are unique.
- Service Offerings – This covers the services we offer and really needs to communicate how we are going to stand out because services are not as tangible. This is where you discuss services that support the product and complimentary services that will increase our revenue potential.
- Methods and Differentiation – Here is where you really need to show how we will stand out against competitors and differentiate EPIC as a whole with its products and services. This should also include patent and copyright information if applicable.



BUSINESS PLAN PREPARATION

EPIC MODEL - Questionnaire

6) How does EPIC differentiate itself?

- According to you, what should the EPIC business model be like and what is its competitive advantage. This will help us to outline how EPIC will sustain its position within the market.

Operational View

7) What will be the best organisational structure for EPIC, according to you?

- The key players and roles involved in the EPIC organisation should be identified.
- Name the management team, board and advisers to EPIC. Highlight their expertise and experiences.

8) What are the economics of our business?

- Define our potential revenue streams including pricing structure, costs, margins and expenses. While inflating expected costs is often a good idea, the opposite is true for sales and profitability projections. Be conservative when you're predicting sales and income.

9) What will be our most effective marketing and promotional strategies?

- Once we've identified our target clients, we'll need to develop and implement a strategy on how best to reach them (e.g. PPC, television, radio, social, etc). And this in large part will be influenced by where our target client consumes information.

10) What are the resources that are required to get EPIC commercially started and operational (e.g. money, people, etc.)?

- Identify needed capital requirements by determining where our business stands today, and what is needed in order to move forward. Also, if you believe we are in need of outside funding, what will be the sources and uses of funds requested.

Figure 9: Stakeholder Interview Questions

The following conclusions were made based on the results of the consolidated interviews (see Annex 1: Consolidated Business Model Feedback from Consortium for more details):

Organisation: *Solution could be owned by a new company*

- Shareholders involving partners beyond the consortium
- Shares be linked to the investment of overall solution – promoting, selling etc..
- Daily management team needed with employees
- Board managed by key shareholders – board of trustees

Product: *ICT in a cloud environment to sell to public sector*

- Customise the solution to specific problems in the city
- Can't see the added value of the platform yet
- Is the platform necessary to sell the solutions?

Structure: *Resources to be taken into account*

- Cost of the start up
- Operational day to day cost
- Promotional costs
- How to bridge gap between Commission funding and signed contracts

Resources: *Come from those investing in the company*

- Both financially and in time
- Look at new EU funding as an option for business incubation

Marketing: *Sell to small to medium sized cities*

- Usually have small ICT budgets so a PAYG model could enable them to experiment
- Can we bring down their IT costs?
- Revenue: look at Navidis numbers - 100k per city

4.3 Sustainability Workshop and Results

4.3.1 Organisation

On Thursday, November 29th 2012, a workshop was organised at the Deloitte offices in Diegem, Belgium with all members of the EPIC consortium, in order to take the results of the Stakeholder Interviews and identify, discuss and define possible options for an EPIC business plan for commercial continuation after project end.

The detailed objectives for the workshop was to develop a number of agreed options for the following topics:

- **The value proposition of EPIC** – the types and definitions of possible products and services to be delivered to customers
- **The customers to be targeted with EPIC** – the types, segments, geographies for potential customers
- **The structure for an EPIC organisation** – the roles and responsibilities, the key activities and capabilities, the possible partners for an EPIC organisation

The agenda of the workshop was as presented in the following table:

Topic	Timing
Introduction	9h00 – 9h30
Brainstorm on initial business model feedback from consortium	9h30 – 10h45
Break (15')	
Brainstorm on possible business scenarios for EPIC	11h00 – 12h30
Lunch (60')	*12h30 – 13h30*
Intro	13h30 – 13h45
Discussion on value proposition and customer segments	13h45 – 15h00
Break (15')	
Discussion on potential EPIC organisational structure and consolidated	15h15 – 16h30
Wrap-Up and Closure	16h30 – 17h00

Participants to the workshop were as follows:

Name (Organisation)	Name (Organisation)
Pieter Ballon (iMinds)	Philippe Perennez (Navidis)
Hugo Kerschot (IS-Practice)	Enrico Cavigliasso (Immoweb)
Jiri Bouchal (IS-Practice)	Guilhem Rouanet (Immoweb)
Marc Van Gastel (iMinds)	Aline Custodio (Issy Media)
Bernard Bouttefeux (IBM)	Pavlos Kranas (NTUA)
Shenja van der Graaf (iMinds)	Bill Hymas (IBM)
Ana Garcia (ENoLL)	Wilhelm Stoll (IBM)
Anna Kivilehto (ENoLL)	Susie Ruston (21c)
Katharine Fuller (BCU)	Tim Paridaens (Deloitte)
Wim Vanobberghen (iMinds)	Michel Dirkx (Deloitte)

The well-known Business Model Canvas method was the chosen method for organising the workshop. This Business Model Canvas is described in the book Business Model Generation

by Alexander Osterwalder & Yves Pigneur. In this approach, Osterwalder suggested the following working definition of the business model:

"*A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.*"

As developed by more than 470 participants, a business model canvas is put forward that provides a framework to facilitate the discussions on the elements of a business model. The Business Model Canvas is shown in the following figure and can be found on the website: http://www.businessmodelgeneration.com/canvas

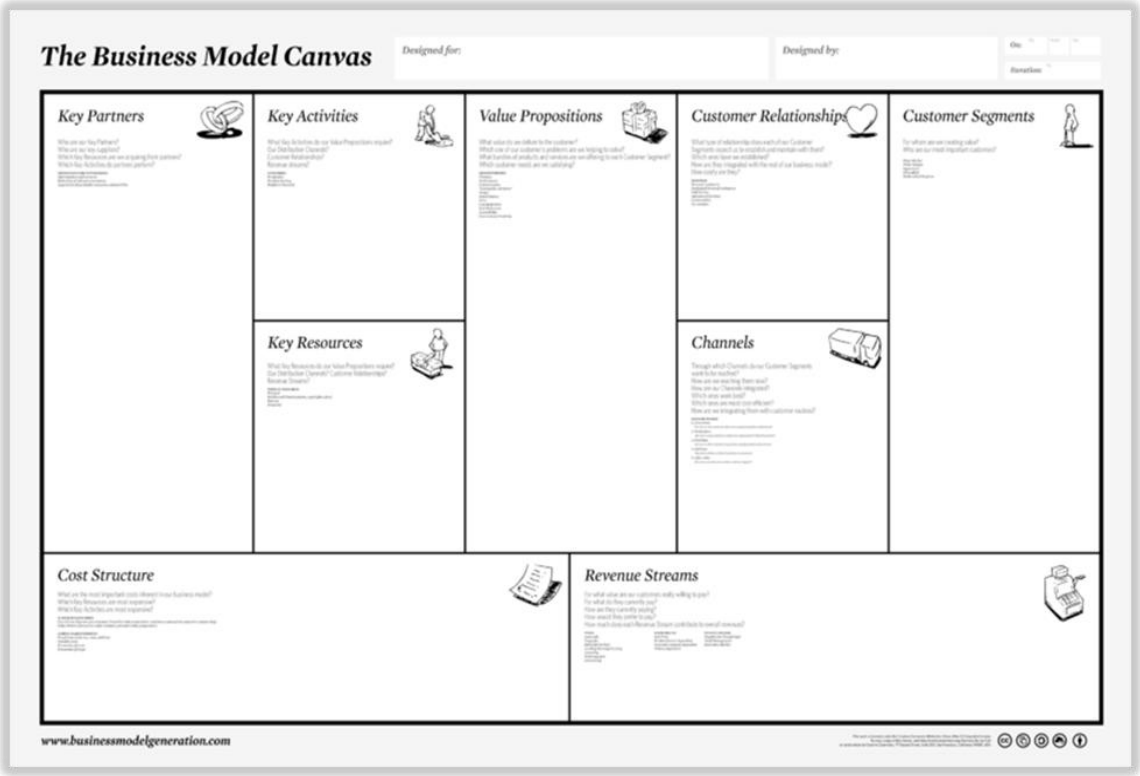


Figure 10: Business Model Canvas Approach

4.3.2 Results

During the workshop, five different business scenarios were identified for future sustainability:

1. **Training and support scenario**: including the roadmap and consulting services, and potential services at European Government level
2. **Service catalogue scenario**: including the initial development of new cloud services which could be later added to the service catalogue
3. **Information store scenario**: including the integration of multiple open data sources and commercial data sources
4. **Platform delivery scenario**: including the cloud platform as such, which could be used for the development of new city solutions in the city itself
5. **EPIC community scenario**: including the establishment of an EPIC community for collaboration between cities, SMEs, open development community, EU initiatives, citizens, etc.

Consortium members then moved into groups and explored each scenario in detail using the Business Canvas Model approach. The results of which are outlined below (see the Annex 2 for canvasses pictures):

4.3.2.1 Scenario 1 – Training and Support

Scenario 1 – Training and support	
Value Proposition	• Providing support on the development of a smart city strategy and the implementation of the EPIC roadmap • Providing expertise on the EPIC platform, including training and technical support
Customer Segments	• Customers would primarily include cities, clusters of cities and regions for requesting the training and support services • Also utility companies, service providers or technology providers could be customers for the technical or platform support, in order to develop new services and become a potential partner • European institutions could be customers for the higher level roadmap and strategy support, for dissemination towards European cities
Channels	• Contacts should be established with the customers through European expert groups, existing or new Smart City communities, the research and academic communities and the EPIC partners
Relationships	• EPIC could build relationships in terms of partnerships or trusted advisors with the customers
Revenue Streams	• Revenues would be generated through fees from support services, • Possible to have free support and consultancy services, which would generate returns based on implementations of services on

	the EPIC platform, and possible support contracts • Subsidies could be provided for the establishment of the communities and relationships with the customers, or the development of new services
Key Partners	• Consultancy companies and academic experts would be the primary partners in delivering the support services • Service providers could become partners in providing the technical and platform support to cities and other service providers • European networks (e.g. ENoLL) and the European Commission and national institutions could be partners in establishing the relationships and sharing best practices
Key Activities	• Organising training sessions and providing technical support • Promotion and community building activities • Develop the necessary documentation and operational material for providing the strategy, technical and platform support services
Key Resources	• A knowledge base on smart city strategy and EPIC platform, and on city intelligence • Human resources including an IT manager, business experts and technical experts
Cost Structure	• Mainly contractors for providing the strategic and technical support • Operational costs for establishing and maintaining the knowledge base

4.3.2.2 Scenario 2 – Service Catalogue

Scenario 2 – Service catalogue	
Value Proposition	• Cities need to deliver high quality services to meet citizen needs more cost efficiently, and citizens want better services • Achieve by providing instance of EPIC platform, allow them to choose which smart services to offer, and provide accounting and business reporting elements • SME's need to be able to create new services and reach new markets • Achieve by giving access to development platform, allow them to publish services to Service Catalogue and providing accounting and business reporting elements • Achieve by providing access to platform and chosen services,

	accounting system useful for future proofing
Customer Segments	• Citizens • SMEs • Cities
Channels	• Use of existing channels towards cities (e.g. ENoLL network)
Relationships	• EPIC to have a direct relationship with Cities and SMEs including provision of support • EPIC to have an indirect relationship with Citizens, they call the City if they have a problem
Revenue Streams	• Consultancy fees from Cities for the roadmap • Licensing an instance of the Platform (although could be for free) to Cities • License/use fee from SME's to use development environment and publish services • Cities could receive revenue from cost savings and charging citizens for specific services (e.g. pay per use) • SMEs could receive revenue from Cities using services as % revenue or pay per use
Key Partners	• Service catalogue infrastructure provider • Service catalogue manager • SME's (outside of consortium) • PR & Marketing team
Key Activities	• Deliver service catalogue framework • Create new services to be added to the service catalogue • Produce guidelines and T&Cs for service catalogue use • Support and manage the service catalogue • Adapt the service catalogue for future use • Promoting the EPIC service catalogue and platform
Key Resources	• Service catalogue
Cost Structure	• Main costs would include product development, technical support, marketing, etc. • All underpinned by legal and financial resources

4.3.2.3 Scenario 3 – Information Store

Scenario 3 – Information store

Value Proposition	• Aggregation of relevant information for reaching customers at the right moment and place • One stop shop for city administrations and other customers, as primary source of data
Customer Segments	• All different commercial entities (e.g. energy, banking, car intelligence, sport facilities, culture, citizen services, transport, food & beverages, shops, grosseries, etc.) • Targeting web developments
Channels	• Take advantage of partners within the EPIC platform
Relationships	• Through commercial partners (e.g. Carrefour, ING, etc.)
Revenue Streams	• Complex situation – fee per click, exchange deals with cities
Key Partners	• All data providers (e.g. banks, retailers, supermarkets, etc.) • Open web development communities, living labs or any other service provider
Key Activities	• Act as a broker of data and services
Key Resources	• Data and information
Cost Structure	• Exchange deals

4.3.2.4 Scenario 4 – Platform Delivery

Scenario 4 – Platform delivery	
Value Proposition	• Infrastructure set for a number of services • Platform as enabler for services (e.g. data warehouse) • Provide capabilities to standardisation of model • Access to audience, providing expertise and potential cost reduction and customization
Customer Segments	• City or group of cities • Citizens • Large companies (e.g. utilities) and SMEs, related to the provided services in the city
Channels	• Sales to cities and public communities and Living Labs

Relationships	• Community management • Technical references and support
Revenue Streams	• Fixed price for the platform – core services provided for free to the city • Fixed fee for some services (e.g. yearly), charging a cost per use • Charging for advertising or promotion
Key Partners	• Need access to maximum data for the platform – open data initiatives • Group of influencers for cities – encourage take up • Infrastructure providers – to enable platform instances in every country
Key Activities	• Establishing interoperability between systems and integration with city systems • Providing training and assistance for development and set-up of the platform
Key Resources	• Initial implementation of a first platform instance (e.g. Tirgu Mures)
Cost Structure	• Cost structure (1) infrastructure and (2) people resource and support (or outsourcing)

4.3.2.5 Scenario 5 – Community of Interest

Scenario 5 – EPIC community scenario	
Value Proposition	• Become the Gartner or Forrester for public services in the cloud • Be a community leader – using a matrix structure of sub-groups against topics • Platform should integrate services and offer long-term services to existing clients (e.g. for SMEs) • Dissemination and organising events to bring actors and players together to talk about solutions rather than problems, describe the 'to be' scenario based on the Roadmap • EU community as leverage for our target groups, and focus on discussing the solutions, providing expert answers and roadmap • Experience sharing between communities to help with troubleshooting starting point for consultancy, and leveraging existing services on a European scale

Customer Segments	• Cities, regions, provinces, local communities • European Commission DGs – be a customer and join • SMEs, utility companies or operators
Channels	• Telco players, banks, etc. • Social media • Existing networks such as ENoLL, Major Cities of Europe (Eurocities), smart city forums, etc.
Relationships	• Built through the channels and smart city initiatives
Revenue Streams	• Membership fees • Living Lab consultancy • Participation in new innovation projects, or proposals for EC/FP7/FP8 programmes • Community work leading to direct sales • Conference fees
Key Partners	• Governments, and need for partners with a European reach? • Industrial, academic, SME's, platform provider, consulting partners
Key Activities	• Build a matrix ecosystem, and leverage from countries to EU level • Establish rules of engagement • Engage the open data communities
Key Resources	• Letters of Intent • Terms and Conditions • Platform developers and data providers • Subject matter experts (e.g. scientific board) • Steering committee and technical board
Cost Structure	• Overhead and operational costs • Marketing • Platform collaborators/experts fees • Knowledge management exchange

Photos of the original canvas brainstorms can be found in Appendix 1 of this document.

4.4 Consolidated Scenarios

After the workshop, the five business scenarios were analyzed and written up in the table below. Partners were asked to read through each scenario before choosing the options that they would like to help further develop into a business case.

Business Scenario	Scenario Description	I wish to help develop the Bus Case
1. Training and Support 	**EPIC** is a Smart Cities Consultancy that generates revenue by providing a set of training and support services to customers wishing to either start or further their smart city journey. The **EPIC** Smart Cities Roadmap methodology provides the core of the consultancy offering which enables customer to create their own Smart City vision and programme. The consultancy will also help customers to populate their own version of the EPIC platform tailored for their city needs.	☐
2. Service Catalogue 	**EPIC** is the premier organisation for creating and promoting new innovative smart city services that work across borders. The Team provides technical support to cities in setting up an instance of the **EPIC** platform for service development purposes. The City and its SME's use the development platform to create and publish new services to the Service Catalogue. Cities can access and deploy services from the catalogue for a fee. SME's would make revenue from selling their services to multiple cities across Europe, of which **EPIC** would take a % share.	☐
3. Information Store 	**EPIC** provides a unique data and services brokerage system for Cities. The **EPIC** platform captures and aggregates user generated data about Citizens interactions with the city which can be combined with other commercial data to provide relevant customer information for Cities and their businesses. In addition, the platform allows the targeting of users with specific city services or adverts at appropriate times of use which generated revenue through a pay per click model.	☐

4. Platform Delivery 	**EPIC** licenses its basic technical platform to cities at zero cost. The platform acts as an enabler for **EPIC** to sell additional value add services for a fee. From service applications to data warehousing, **EPIC** provides an end-to-end solution for cities to manage their services more cost efficiently in a Cloud environment. Cities choose **EPIC** due to the free basic platform and the fact that they can benefit from a wide range of innovation and services from cities across Europe.	☐
5. EPIC Commun-ity 	**EPIC** is Europe's leading Cloud and Smart Cities research, consultancy and advisory organization. **EPIC** delivers technology and policy related insight for public sector clients to make the right cloud based services decisions for their own smart city challenges. The membership based community brings experts and practitioners together to discuss public sector ICT solutions, standards and the Roadmap for smarter city working. Revenue is generated through membership fees, project funding, consultancy and events.	☐

The results of the voting from each Partner can be seen in the table on the following page, along with key feedback from the initial Stakeholder Interviews. There was a fairly even spread of interest in all the scenarios therefor it was decided that two Working Groups would be established to explore two business models under the following headings:

1. Commercial Scenario (contains elements of scenarios 1 – 4)
2. Community of Interest (based upon scenario 5)

The following chapters provide a high level business model for each of the two working groups.

Partner Short Name	Sc1:	Sc2:	Sc3:	Sc4:	What's my organisations ROLE in the EPIC business organisation	What' my organisations business OFFERING	What's my organisation NEED from EPIC business organisation	What's the MARKET potential for the EPIC business organisation	REMARKS
iMinds	1	1	1	1					Need for "official" statement of organisation
ISP	1	1	1	1	Manage the organisation and business development around new services		Infrastructure, people, competencies, sales force, marketing force in a legal business or consortium format		
21C	1	1	0	1	Facilitation around training, service delivery and consultancy and communications	PR and marketing expertise	New sales focused website. Need help from the tech partners to describe products so we know what to sell and at what cost. Need partners to use their contacts to secure introductions to new cities	Need to decide upon EPICs USP and define the actual products	21c is flexible and can adapt to a number of different non-technical roles
DEL	1	1	0	0	Service delivery and consultancy	Provide Roadmap and Business Case for services element	Need cities to link to, services added value	Need to look at own strengths and build our value from that. Research shows that cities are looking for cost effective solutions that are readily available.	Deloitte will not be a legal partner, but will partner with the business consortium to sell services.
ATC	1	1	1	1	Consultancy and implementation services for scenario 3. Advisor and Technical Support.	Develop and offer Web Services and application portlets, customised to user needs. Development of mobile applications, as an alternatine access channel	Access to the EPIC platform and support from platform owners. Going for open standards implementation for the EPIC platform is crucial	Cities of the future should provide added value and interoperable services for their citizens, taking into account that the implementation and usage costs should be minimised, both for citizens and the cities themselves, which have to build innovative applications based on the reusability of their own solutions. Given the current maturity of the European cities and the directives of the DAE, the potential for using EPIC platform is expected to be high	
IBM	0	1	1	1	Involvement in scenarios 2, 3 and 4	Supply additional services and applications to Service Catalogue, technology, and expertise in big data and analytics	Need a strong business case to interest IBM to invest in EPIC Ltd. Can invest in a strong marketing event like EuroCities in November		IBM Belgium needs us to finalise a business case quickly
FKIE	1	0	0	0	Consultancy for Web Services and Semantic Modules; technical support	Web Service experience, semantic technology experience	Network of technological partners and Cities	Cities need to (cost) efficiently provide modern IT based applications for citizens and SMEs. New coming Cities can access experience through EPIC Ltd. Consultancy services. EPIC Ltd. Is properly linked in a network of management partners, smart cites and software and advanced technology developers. Thus it is able to rely on technical partners whenever necessary.	
NAVIDIS	1	1	1	1	Smartcity Solution provider	3D Middleware + API + Business Process + Production Plan	Clear Partnership Commitment, Shared or not Leadership, a contractualized umbrella organisation, equitable sharing of economical and business costs&benefits	Considering we have about 3000 cities across Europe, the potential is greater than 500 M€ and then we can address the worldwide market. With EPIC the city is in your hand and local services at your fingertips.. With EPIC people living in the city can access information and services from anywhere, at any time and with any device... Any new solutions and services can be developed on demand of the City players or companies and embedded into the platform as application or in the "Web Services Catalogue".	
BCU	1	0.5	0.5	0	Training, user needs and requirements assessment, proofs of concept for moving forward	Will engage with cities and pass proofs through the	Where to register EPIC Commercial? Maybe just a governance vehicle and business is delivered by a Partnership agreement?	Cities understand they need to be smarter. Smarter agenda often linked to digital agenda. Need to be able to develop and sustain long term relationships to help cities understand requirements before getting to procurement. We should note that this activity will be 'slow burn'. New trend in cities to open up data as web apps for SMEs and citizens to consume. Therefore EPIC may have a role in helping cities to open and share public data.	Typically universities do not sell commercial products. Should EPIC be a social enterprise to help Cities on their smart city journey, rather than a profit making entity?
IMMO	0	0	1	0					

Figure 11: Partner Voting and High Level Interview Results

5 Post-EPIC Business Plan – Commercial Scenario

5.1 Idea and Products

EPIC - the "European Platform for Intelligent Cities"- is more than just an IT platform - it is a one stop shop were medium sized Cities in Europe (50.000 – 500.000 inhabitants) can find real, affordable solutions (products and services) to materialize the "Smart Cities" concept in an highly achievable and cost-effective manner.

Thanks to EPIC, the "Smart City fashion trend" in policy will no longer remain the preserve of big cities with big ICT budgets. Instead, the EPIC Smart City roadmap, service catalogue and cloud platform will enable every city in Europe to access and deploy innovative Smart City applications that meet their budgets and needs.

"Intelligence" is the basic material to become smart. EPIC Ltd will meet this need by offering city managers a roadmap to support their journey to become a smart city in an intelligent way. The Roadmap consists of a short-term assessment exercise from vision budget under the public procurement threshold. Secondly EPIC Ltd. will have as an asset a cloud platform (currently based on IBM infrastructure) that can deliver Smart City solutions "as a service": it will be a reliable high end solution with robustness, security, user management as a service build in.

The Roadmap and Cloud Platform provide foundational support for EPIC Ltd. core business offering: a market place for Smart City services. In this market place, EPIC Ltd. brings together service providers (from private and public sector) and information/data providers (from private and public sector) in order to aggregate "Smart City services" with added value for citizens, city visitors, businesses in the city and the city itself. This market place is technically underpinned by the EPIC platform where web services (based on open standards like JSON, SOAP...) combine with external databases and are made available by portlets (ready to be consumed by desktop or mobile devices). This resulting "product catalogue" forms a unique sales proposition of EPIC Ltd.

No data must be stored in the EPIC platform. Instead EPIC provides "connectors" between interesting data and services and "up-sale" these services with added value. One example to make EPIC's USP clear: the EPIC project combined the "real estate" data of Immoweb (a commercial company) with the open data POI's (points of interest) of the Brussels Region. This new service made it possible for new inhabitants of Brussels to find a house or apartment near appropriate public transport, children schools, as well as the availability of different "commercial" services nearby: supermarket, bank, taxi…

This new service created added value for Immoweb (improvement of their real estate service), the City (promoting the city for new-comers) and the different "commercial" point of interests (banks, supermarkets fighting for the eyeballs of new clients in the virtual world). The added value will be accounted for in the EPIC platform in a split-payment, clicks account sales model. The re-use and/or upsale possibilities of for example "point of

interests" are numerous; what works for one city can be duplicated at low cost for numerous cities in Europe.

Another asset is the middleware providing a symbolic 3D map of the city with high value-added design on which any kind of rich information can be published from GIS or any other databases, e.g. Point of Interests, and also visualized the flow of information as the consumption of energy, circuits of water distribution or electricity, the flow of traffic, the news about a specific location, etc.

Another key product of EPIC Ltd will be the "Service Catalogue" as counter of available webservices, portlets and databases: raw material for creating new services. A City and its SME's use the EPIC platform to create and publish new services to the Service Catalogue. Cities can access and deploy services from the catalogue for a fee. SME's would make revenue from selling their services to multiple cities across Europe, what is proved within the EPIC project.

The EPIC Ltd. competence and resources will promote this market place all over Europe (as a start, we consider EPIC a global market proposition). From a business development point of view EPIC Ltd. can rely on the EPIC community, consisting of European network of Cities related to the EC and the Smart Cities portfolio initiative (a sustainable initiative of Smart City European projects). Among others EPIC project partner ENoLL (representing more than 200 cities operation a Living Lab infrastructure) and Eurocities (representing more then 250 larger cities in Europe). Besides business development and marketing competence, EPIC Ltd. will have technical knowledge and resources available to support cities, services and data providers to create the technical components to connect with the EPIC platform as well as consultancy capacities.

EPIC "Smart City in a Box" provides an achievable one-stop shop for cities wishing to start on their Smart City journey, offering: (1) the Roadmap for how, where, when, and why to get started; (2) the product; (3) the platform; (4) the business model.



Figure 12: EPIC Product Solution



Figure 13: Benefits of EPIC Solution

5.1.1 Product 1: Roadmap

The EPIC Roadmap is an action plan describing the planned series of actions, tasks and steps in becoming a 'smart city'. The EPIC Roadmap presents six 'phases' or steps which cities can follow to develop a 'smart city' vision. The Roadmap guides cities through the process of understanding their needs and ambitions, defining concrete project plans, implementing new systems and finally operating smart city services. Each phase of the EPIC roadmap provides a series of concrete results and indicators which allow administrators to accurately measure, assess and evaluate their progress. An overview of the different steps and objectives in the EPIC roadmap for smart cities is provided below.

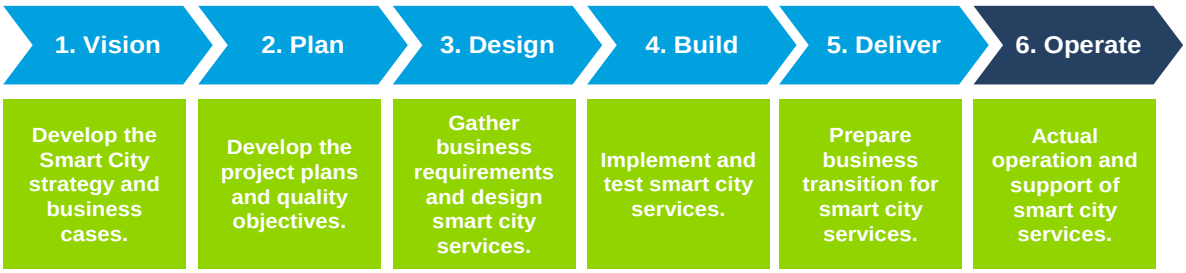


Figure 14: Introducing the EPIC Roadmap Objectives and Results

In addition to providing a step-by-step guide for implementing smart city services, the EPIC roadmap provides cities with a way to access the functionality of the EPIC Platform. The EPIC Roadmap allows the platform to 'soft sell' the EPIC platform as an appropriate tie-in to Smart City service delivery.

5.1.2 Product 2: Cloud Environment

The EPIC cloud environment is a web-based platform and solution stack (set of solutions which can be run directly without the need for downloading). The current platform environment supports in particular the SOAP standard (by W3C)[3] for web services. This SOAP standard uses the XML format for requesting and receiving information between different IT systems. The EPIC Environment also incorporates the REST standard[4] for serving mobile applications. The EPIC Cloud Environment is based on a suite of technologies provided by IBM. The technology elements of the EPIC platform are articulated in the figure overleaf. This figure expresses the elements of the EPIC cloud architecture. The following technologies (presented here in summary with full articulation in D3.1) have been deployed to achieve the cloud architecture:

[3] See reference to SOAP standard from W3C (http://www.w3.org/TR/soap/)
[4] See reference to RESTful web services on Wikipedia (https://en.wikipedia.org/wiki/Representational_state_transfer)

- Portlets and Web sites, Mobile devices enablement → WebSphere Portal Server
- Forms → Lotus Notes Forms
- Business processes → WebSphere Process Server
- Stakeholder service rules→ ILOG Rules (JRules)
- Integration of services, integration of external and internal interfaces - WebSphere ESB
- Web services → WebSphere Service Registry & Repository
- Authorization, authentication and identification of platform users with their roles and groups → TFIM based on Directory server
- Development environment → WID

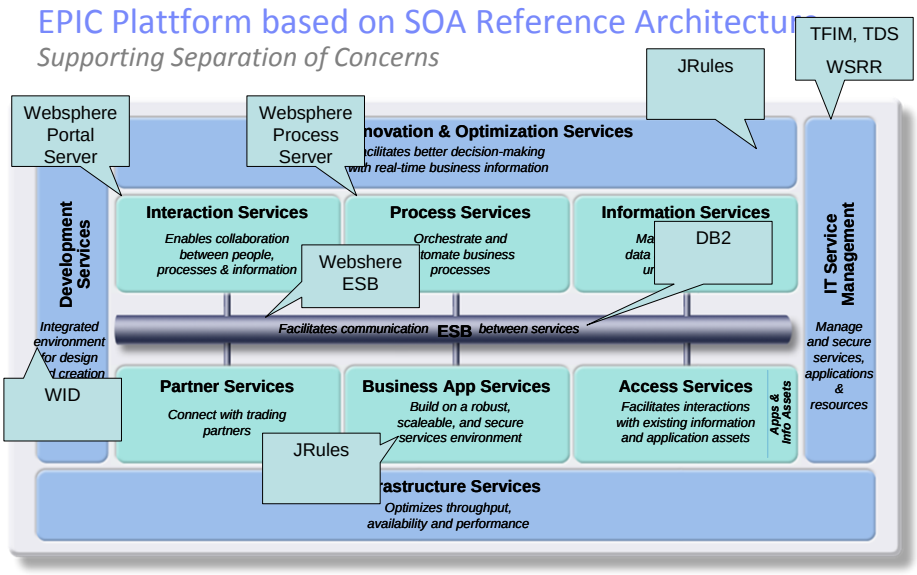


Figure 15: EPIC Platform Based on SOA Reference Architecture

To develop the smart city services on the EPIC platform (as is shown in Figure 16 below), the cloud environment uses 'portlets'. A portlet is a user interface which allows multiple services to be accessed using a single platform. In this respect, EPIC portlets function as an adaptor layer between the basic infrastructure of the cloud service environment and the services on the EPIC catalogue. The following figure provides a simplified visualisation of the architecture:

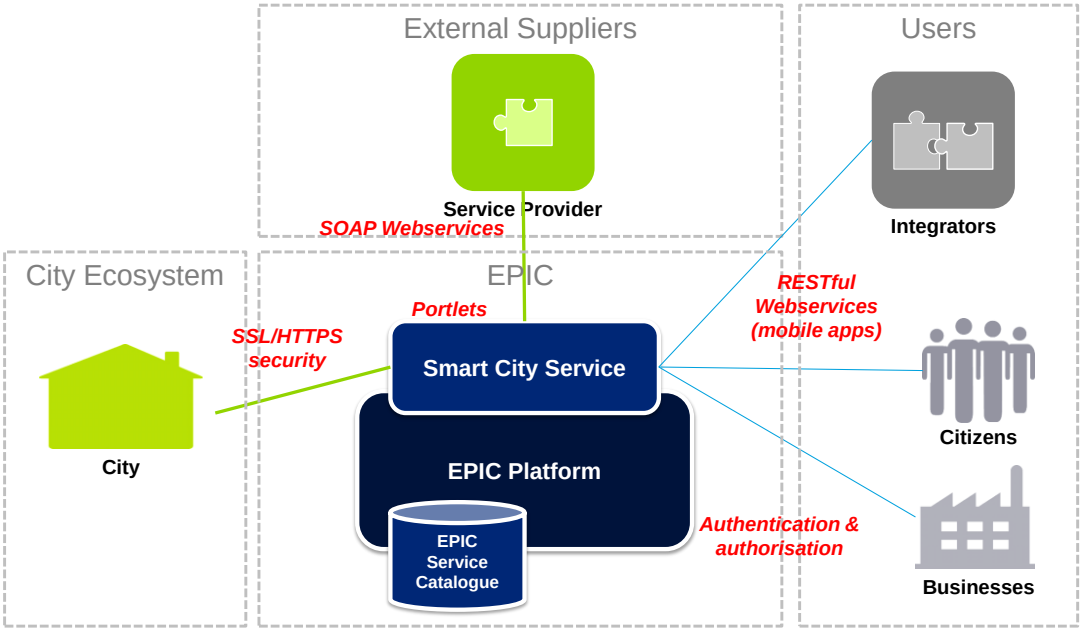


Figure 16: Overview of Technologies and Standards for EPIC Platform and Services

The security of the EPIC cloud service environment is currently governed by a limited encryption or security system applied for the access to external data sources from city administrations. However, specific security measures (e.g. SSL encryption and authentication mechanisms) are being applied for the integration of data streams from non-public sources to counter the increased risks associated with these datasets. For the access through mobile applications, the RESTful services apply both HTTPS security encryption and authentication measures.

In discussing the user identity and access control for the EPIC platform, this is currently performed as part of the platform components (i.e. IBM WebSphere components). The users of the smart city services would be able to register and access these EPIC services according to the specific conditions defined for each service. These access controls can be managed and adapted by the platform administrators and the particular service providers.

5.1.3 Product 3: Service Catalogue

The EPIC Service Catalogue has been realized based on IBM WSRR. The frame is populated with actual information on the services/applications deployed on the platform. The population takes place in two phases. In the first phase all web services of the EPIC have to be registered. For this the available documents on the web services had to be loaded into the catalogue. This is done for a WSDL typed description of the EPIC user management service as shown in the figure below:

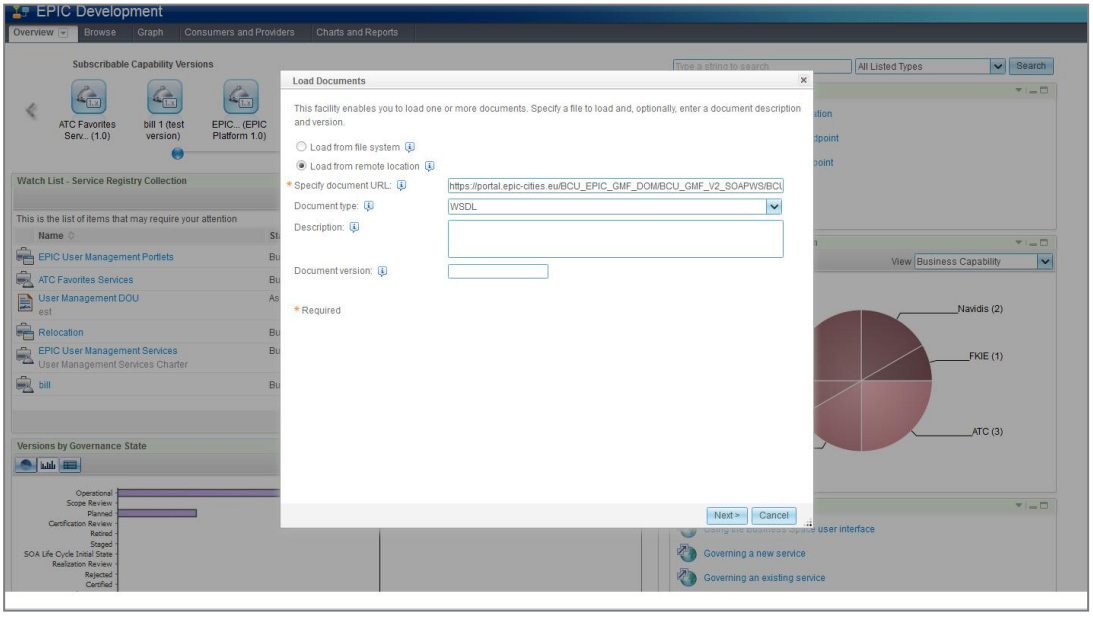


Figure 17: Service Catalogue: Load Document

WSRR automatically produces out of the selected document specific catalogue documents according to the bottom level of the underlying architecture model and links the documents. The result is shown below.

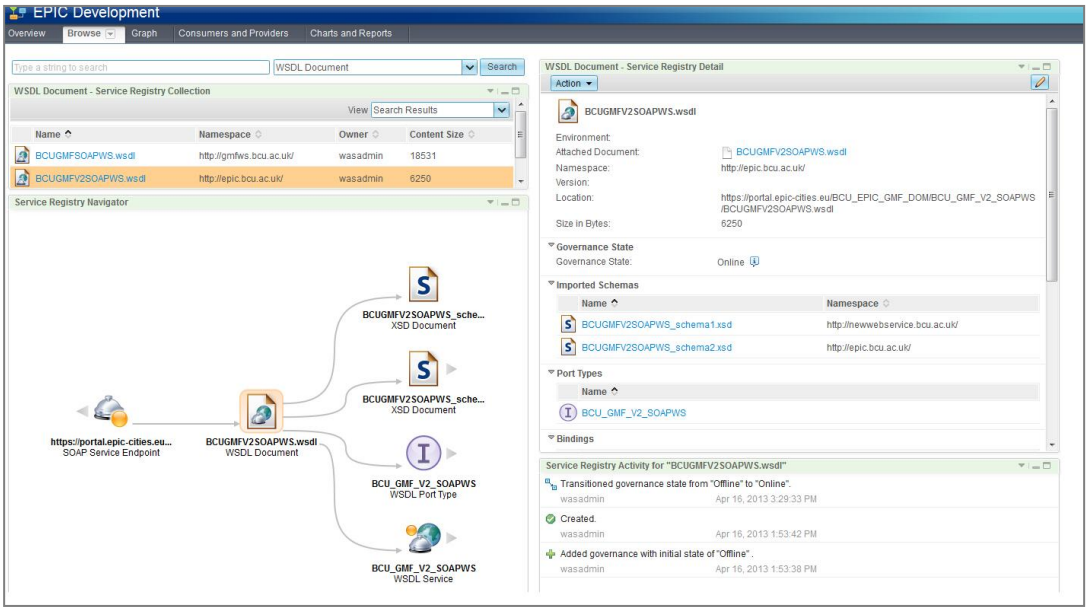


Figure 18: Service Catalogue Documents Generated by WSRR

This has been done for each web service available at the EPIC platform to populate the Service Catalogue with all the information needed for the bottom architecture level. In phase 2 the business services which shall be offered via the catalogue have to be created on base of

the bottom level information. The creation starts at the top level of the architectural model with the screen shown below.

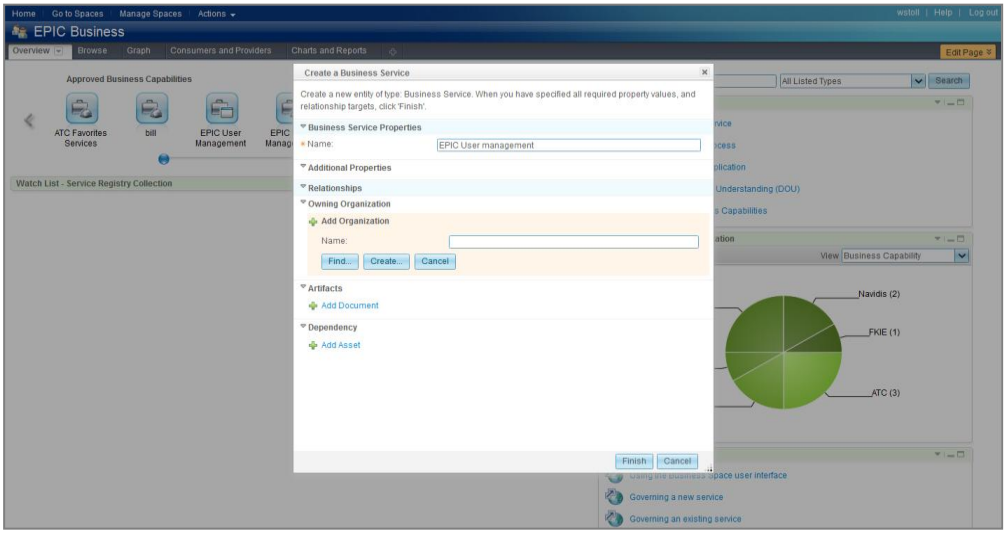


Figure 19: Service Catalogue – Creation of a Business Service

As outlined information on the business service is requested by this screen and following screens. This way by navigating through the architecture model all business service information is gathered by WSRR. In the final step the business service is linked to documents produced in phase 1. Till now 12 business processes have been created. Information on the business service is given to the user via the screen shown in Figure 20, where as an example the Relocation Service is used.

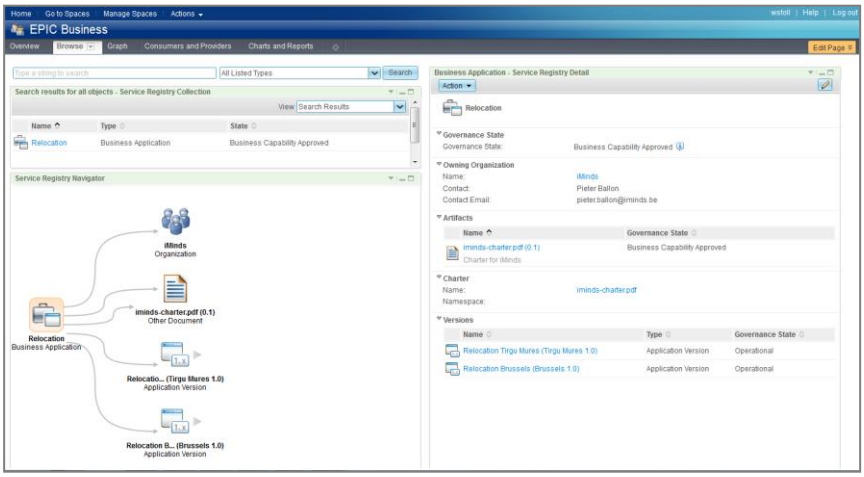


Figure 20: Service Catalogue – Relocation Service

5.2 Market

EPIC helps small and medium sized cities across Europe take advantage of the same Smart City innovations as larger cities at a fraction of the cost. In an era of fiscal austerity, cities are under increasing pressure to offer more for less. EPIC's cloud-based web services platform allows cities to access and deploy innovative Smart City applications without spending hundreds of thousands of Euros on costly procurements and systems. Leveraging the cost advantages of the cloud, EPIC's market place for Smart City services brings together service providers and information/data providers from private and public sector to aggregate scalable, cost-effective and easy to access Smart City services that make cities better places to live, visit and work.

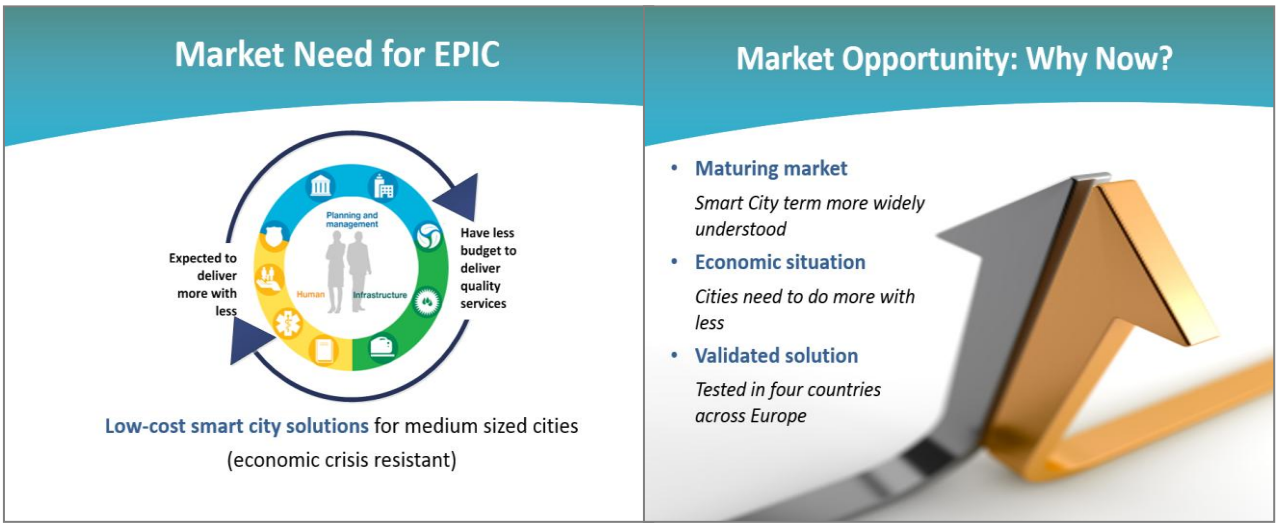


Figure 21: Market Need for EPIC

5.2.1 Target Market

- Mayors, CIOS and Strategy Officers in small to medium sized European cities
- Targeted private sector entities with offering that can benefit from EPIC services

5.2.2 Marketing Objectives

- To establish EPIC LTD as the premier source for Smart City products, services and consultancy to small and medium sized cities
- To generate strong word-of-mouth credibility amongst public sector purchasers
- To showcase the commercial value of EPIC Ltd. services to private sector actors

5.2.3 Marketing Messages

EPIC Ltd will focus marketing material around the following 3 core messages:

1. EPIC helps small and medium sized cities across Europe take advantage of the same Smart City innovations as larger cities at a fraction of the cost.
2. EPIC's market place for Smart City services features scalable, cost-effective and easy to access Smart City services that make cities better places to live, visit and work.
3. EPIC's cloud-based web services platform allows cities to access and deploy innovative Smart City applications without spending hundreds of thousands of Euros on costly procurements and systems.

5.3 Operations

EPIC Ltd. will be promoted across Europe by core members of the EPIC Ltd. team – all of whom know the product intimately and have direct access to Public Sector purchasers. Thus rather than commissioned salespersons (who often have limited product knowledge and direct access to purchasers), EPIC Ltd. will leverage the extensive collective expertise and professional networks of the EPIC team to drive sales.

The EPIC Ltd. team is deeply embedded within the European 'Smart City' community, including the European Commission's Smart City Working Group which represents the portfolio of all Smart City projects funded by the Commission. These 'Smart City' connections are supplemented by the sales reach of the European Network of Living Labs (ENoLL) which represents more than 200 cities across Europe and Eurocities which represents over 250 of Europe's largest cities.

The EPIC team will use the above networks to reach potential Public Sector purchasers directly and generate new points of contact. In addition, EPIC Ltd will use the EPIC Product Service Catalogue and ENoLL Market Place to broaden its sales reach in a targeted and cost-effective manner.

EPIC will rely heavily on online marketing, but also use a showroom in Brussels to demonstrate its state-of-the-art offerings. Online sales efforts will be bolstered by hands-on product demonstrations at key strategic events such as the annual EuroCities conference.

Finally, EPIC will use personal contacts and direct outreach to target commercial entities that can benefit from EPIC services such as real estate agents and banks in the case of the EPIC Relocation Service.



Figure 22: EPIC Marketing Strategy



Figure 23: Estimated Market Size and Potential Share for EPIC to Aim Towards

5.4 Management of IPR

In order to deal with the repercussions of exploiting the Foreground generated within the EPIC project in successful products or services based on sustainable Business Models we need to start from a couple of basic definitions used within the legal framework implemented in the project. This framework is basically laid down in two contracts: the Grant Agreement (GA) between the European Commission and the EPIC Beneficiaries and the Consortium Agreement (CA) concluded between the EPIC Consortium partners.

Within those contracts, two basic terms are important in determining how to handle the ownership of ideas and technologies. Basically, in determining what brings value to a new product or service, we have to start by assessing the different components of the service (assembled together by the different partners), and their status. They can be either Background, Foreground or Joint Foreground.

"Background" means information that is held by the parties prior to their accession to this Grant Agreement, as well as copyrights or other intellectual property rights pertaining to such information, the application for which has been filed before their accession to this Grant Agreement and which is needed for carrying out the project or for using Foreground. (excerpt from the CA).

"Foreground" means the results, including information, generated in the course of the project, whether or not they can be protected. Such results include rights related to copyright, design rights, patent rights, plant variety rights, or similar forms of protection. (excerpt from the GA, confirmed in the CA).

As a starting point, Background is identified beforehand and is owned by the party that has contributed it to the EPIC project assets. The CA lays down the Access Right Structure, which guarantees that this Background are still accessible for partners using them as building blocks for new products or services. As a base reference, when a party needs the Background of another party in creating a product based on its own Foreground, the CA states that "the terms and conditions governing the use of and access to such commercially available product shall be the prevailing terms upon which the product is commercially available to the public. "

Another base rule states that Foreground generated by the efforts of a party is owned by that party. This means that in business modelling, a party which has developed a product or service on their own, can define the business model on their own, given that they negotiate viable terms for any Background products or technologies they need. If a product or service is composed on Foreground owned by different parties, they will have to negotiate a common business model using traditional IP and asset valuation tools as e.g. revenue splits, licensing fees (be it one-time licensing fees or recurring ones), or going into joint ventures.

Please note that both Background and Foreground have been defined regardless of whether or not there is a legal protective measure in place for the generated materials and ideas. This means that in discussing go-to-market-strategies, all input has to be evaluated. Protected ideas can of course be valuated more easily than non-protected ideas, but the Consortium Agreement and the Grant Agreement at least provide basic protection for all idea owners.

Things get a little bit more complicated if we run into Foreground which is generated by different partners collaboratively and "if the contributions to or features of such jointly owned Foreground form an indivisible part thereof are such that under applicable law it is not possible to separate them for the purpose of applying for, obtaining and/or maintaining and/or owning a the relevant patent protection or any other IPR protecting or available to protect such Foreground".

Concretely, this means that if you want to protect Foreground using legal means, but you are unable to do so separately, the Consortium Agreement states that you have to protect it jointly. Ownership of the resulting legal titles are then shared, as are the costs associated to the protective measures. In this case, the parties concerned are obliged to negotiate a Joint Ownership Agreement, to detail how they will manage this process. This obligation is a requirement for legal protective measure, but does not inhibit commercial exploitation of the product or service.

With these ground principles concerning Intellectual Property Rights, agreed upon by all partners, we believe there is a solid starting point which protects the interests of the contributors to the innovation, but also maximizes the opportunities of reaching agreements on joint exploitations of ideas. However, we are aware that each product idea or service will have to be carefully examined to identify the relevant stakeholders and engage them in the process of generating a viable business model agreed upon by all partners.

5.5 Financial

5.5.1 Pricing Models Review

Developing a successful revenue model is the first building block to achieve a solid financial aspect to a business model. Although current cloud computing literature frequently considers pricing structures of cloud services, the discussion rarely covers more than the accepted pay per use pricing options (so called 'as a service' models[5]). However, pricing is one of the more critical decisions that a city will make whether planning the introduction of a new IT service or repositioning an existing IT service. EPIC will leverage the deep insights developed through close consultation with service providers to carefully consider the most appropriate financial model(s) to pursue. EPIC begins with the understanding that traditional pricing mechanisms such as cost-plus pricing may be inadequate in an on-demand services environment due to several changing factors such as shortened contract durations, reduced switching costs, weaker customer lock-in, uncertain demand, and shorter life cycles.

Osterwalder (2004) defines the revenue model as an element that "measures the ability of a firm to translate the value it offers to its customers into money and incoming revenue streams." Also, a revenue model "can be composed of different revenue streams that can all have different pricing mechanisms." Furthermore, the traditional approaches to pricing have generally been quite operational but there should also be a strategic planning level on pricing. Linking this to Osterwalder's ontology, it could be argumented that our EPIC revenue model refers to the strategic planning cycle and the pricing mechanism itself to

[5] http://www.zdnet.com/blog/saas/the-as-a-service-business-model/896

operational planning. Osterwalder differentiates between three main categories of pricing mechanisms:

Category	Pricing Mechanism	Description
Fixed pricing	Pay per use	Customer pays in function of the time or quantity he consumes of a specific service.
	Subscription	Customer pays a flat fee in order to access the use of a product or to profit from a service.
	List price / menu price	A fixed price that is often found in a list or catalog.
Differential pricing	Service feature dependant	Price is set according to service configuration. Includes also bundling of different services.
	Customer characteristic dependant	Price is tailored to the characteristics of every single customer.
	Volume dependant	Differentiates prices on the basis of purchased volumes.
	Value-based	The final price will strongly depend on the customer's valuation of a value proposition.
Market pricing	Bargaining	The price outcome depends on the existing power relationships between the parties involved.
	Yield management	The best pricing policy for optimizing profits is calculated based on real-time modeling and forecasting of demand behavior.
	Auction	Price is set as buyers bid in increasing increments of price.
	Reverse auction	Price is set as sellers bid in decreasing decrements of price.
	Dynamic market	Price is the outcome of a large number of buyers and sellers that have indicated their price preference, but are not able to influence this price as individual sellers.

Figure 24: Pricing Mechanisms (Osterwalder 2004)

- Fixed pricing mechanisms produce prices that do not differentiate in function of customer characteristics, are not volume dependent, and are not based on real-time market conditions.
- Differential pricing refers to pricing mechanisms that produce prices that are either based on customer or product characteristics, are volume dependent, or are linked to customer preferences, but not based on real-time market conditions.
- Market pricing stands for pricing mechanisms that produce prices based on real-time market conditions.

The Pay per use mechanism falls under 'Fixed Pricing' and is widely hyped to be one of the key changes that the cloud brings to IT services business. With pay per use mechanisms, capacity units such as number of transactions, gigabytes of storage or memory or units per time such gigabytes of memory per hour are associated with resources and assigned fixed price values and customer pays according to his metered usage of resources. Pay per use pricing is typically used with IaaS and PaaS services and its benefit is that it allows customization to specific application needs – something that could be very beneficial to the EPIC Business model. However, it bears noting that quantification of resources and measurement of dynamic usage may be challenging task with cloud services. Since Pay per use can be a preferred method of working for EPIC, one needs to examine further which various pricing mechanisms are possible. Other possibilities might include i.e.an ISV Club Membership fee, per unit price per consumer, integration with Back-office (Middleware

costs!), Back-Office unique services (i.e. SAP in a Cloud, etc.) – all needed to guarantee a ROI model for the vendor also.

Denne (2007), Prodan and Ostermann (2009) and Yeo et al. (2009) propose various advanced ways to implement such pay per use pricing mechanisms, here summarized in Table 2:

Implementation	Description
Time-based pricing (Subscription pricing)	Pricing is based on consumed time units. The difference to the actual subscription pricing mechanisms discussed below is that customer does not sign a fixed contract.
Peak-level pricing	Pricing is based on peak consumption within a defined window.
User-based pricing	Pricing is based on the number of distinct users presenting themselves to the system.
Ticked-based pricing	Pricing is based on fixed price electronic tickets that services provider issues for use of the service (for a specific period of time).
Integral pricing ("under the curve")	Pricing is based on peak utilization of defined capacity unit divided by average utilization.
Overage charges	Pricing changes if customer exceeds the average consumption of the service.
Consumption commitments	Pricing is based on estimated average consumption and exceeding or undercutting the consumption commitment affects the price.

Figure 25: Various Pay Per Use Pricing Mechanisms

In this pricing mechanism, customers prepay for a certain amount of capacity units that have to be consumed usually in a certain period of time and overcharging is applied if customer exceeds the quota of prepaid units.

Youseff et al. (2008) and Weinhardt et al. (2009b) discuss subscription pricing with cloud computing and Denne (2007) mentions pricing based on pre-purchase of services. With a subscription mechanism, the customer subscribes (i.e. signs a contract) for using a pre-selected combination of service units with a fixed price for fixed time period such as month. In a subscription model, pricing is per unit of time and not per unit of consumption. Subscription pricing is most widely used with SaaS services and it allows prediction of customers' periodic expenses but lacks accuracy of charging users what they have used.

Youseff et al. (2008) discusses tiered pricing, which could be understood as a service feature-dependent pricing mechanism. With a tiered pricing model, each tier offers fixed computing specifications (e.g., storage, memory allocation, CPU type and speed) and SLA at a specific price per unit time. For example, Amazon Web Services (2010) sells various different types of instances of capacity such as standard, high-memory, and high-CPU. Each different instance type packages resources such as storage and memory together differently. Tiered pricing comes very close to bundling, which is the sale of two or more

products/services in a package with differentiating the unit prices according to contents of the package.

Weinhardt et al. (2009b) discuss "dynamic pricing" referring to mechanisms, in which the target service price is established as a result of dynamic supply and demand, for example by means of auctions. For example, Amazon Web Services has introduced so-called Amazon Spot Instances (http://aws.amazon.com/ec2/pricing) to allow customers to bid their unused capacity. Amazon runs the customer's instances as long as the bid price is higher than the spot price, which is set by Amazon based on their data centre utilization (Amazon Web Services 2010).

Weinhardt et al. (2009) discuss revenue management, which is another name for yield management, for the cloud. Yield management refers to allocating scarce resources and optimizing profits as a result of selling more with higher prices by influencing consumer behavior. For example, services providers can dynamically vary the price according to some variable such as time of the day to create incentives for customers to run their jobs during times of low utilization.

Yeo et al. (2009) discuss dynamic market mechanisms by suggesting a federation of cloud by forming a global cloud exchange, where customers can bid resources in the same manner as other commodity exchanges. The cloud brokers acting on behalf of customers identify suitable cloud services providers through the cloud exchange and negotiate with cloud coordinators for allocation of resources. In other words, the cloud exchange would act as a market maker for bringing together services providers and customers. Such a model might be too far-fetched for the EPIC case however, since the public sector environment is a heavily regulated one.

It is definitely noteworthy that fixed pricing mechanisms, in particular pay per use and subscription, are currently most widely used in cloud services, so that could be our preferred choice for EPIC as well. Although market pricing mechanisms could achieve more economically efficient allocations and prices, both users and providers still prefer simple, fixed mechanisms in which it is easy to predict payments. Charging fixed prices based on metered usage is simple to understand and straightforward for users, but does not differentiate pricing to exploit different user requirements in order to maximize revenue.

Market-based pricing mechanisms are starting to evolve but it is questionable whether they become popular enough in the end, and probably not in a public sector environment such as for EPIC. Also, there are many factors such as economies of scale, shared infrastructures, reduced deployment costs, and free and open source that foster decreasing prices. But in order for the EPIC services providers (and EPIC itself) to secure profits in the future we must provide value-adding solutions instead of just separate products. Services providers must establish long-term commitment that allows them to become familiar with the customer's needs and create more value to customer. And there should be a clear benefit of these services being offered/integrated in a common platform so synergies for the cities' administration and the end-users can be found.

Harmon et al. (2009) discuss revenue models, or what they call pricing strategies, for cloud services and distinguish between cost-based pricing and value-based pricing. They argue that pricing of IT services has traditionally focused on covering costs, achieving desired margins, and meeting the competition. Similarly, pricing of IT services is still strongly similar to pricing in the retail industry; hardware equipment is priced per-unit basis and IT services with fixed-price contracts. In contrast to cost-based pricing, value-based pricing considers customer's perceived value from the service they receive rather than provider's costs and short-term value. The goal of value-based pricing is to set prices that facilitate the development of customer relationships and creation of long-term value for the customer, which, in turn, enables the achievement of the service provider's financial and strategic objectives. Value-based pricing takes account also other than economic customer value driver. Figure 26 describes the most common cost-based and value-based pricing mechanisms for IT services that can also apply to the EPIC business model:

Pricing Strategy	Pricing Mechanism	Description
Cost-Based	Flat pricing ("all you can eat")	Fixed price for unlimited use of service, typically without up-front fees.
	Tiered-pricing	Pricing is based on package of services.
	Performance-based pricing	Pricing based on theoretical throughput of the system such as MIPS (Million Instructions per Second).
	User-based pricing	Pricing is based on the number of users that utilize a collection of service capabilities over a given period of time. • Per-user pricing • High water mark pricing • Per-seat pricing
	Usage-based pricing ("pay-as-you-go")	Pricing is based on customers' actual usage on a transaction basis.
Value-Based	Penetration pricing	Market segments where buyers have high price sensitivity are targeted. • Low-price leader • Experience curve pricing • Bundling
	Skim-pricing	Market segments where buyers are relatively insensitive to price and have high search costs are targeted. • Price signaling • Reference pricing • Image/prestige pricing
	Hybrid pricing	Combines elements from penetration and skim-pricing. • Cost-plus pricing • Complementary pricing • Premium pricing • Random discounting • Periodic discounting • Second-market discounting

Figure 26: Cost-based and Value-based Pricing Mechanism (Harmon et al. 2009)

5.5.2 Proposed EPIC Pricing Mechanism

EPIC understands that the pricing model chosen for the sale of platform and services must reflect the expectations and desires of business customers. EPIC further identifies that the primary pricing trend of cloud computing has been a desire among customers to decrease the proportion of capital expenditures (CAPEX) and increase the proportion of operational expenditures (OPEX) allocated to ICT. The trend toward OPEX spending also reflects the desire to pay only for the services and infrastructure you actually use. To exploit this trend, EPIC will deploy a 'pay per use' pricing model.

EPIC recognises the associated risks with developing a pay-per-use mechanism. Pay per use pricing significantly changes the risk-sharing model between the services provider and the city/customer as the customer's commitment decreases. In addition, pay per use mechanisms could have decreasing effect on services provider's incoming cash flows.

The EPIC pricing mechanism is proposed in the next figure (Figure 27). The model suggests that a typical cloud service has three primary price components:

1. **Start-Up Cost (One-off charge)** – The Start-up cost is a reflection of the expense incurred by establishing the service. There may be also additional one-time charges if the service has some attributes that customer is able to change after the service is implemented and bring additional work to the services provider.
2. **Availability Cost (Subscription Service)** - The availability cost covers the elements of the service which must be reserved at all times to facilitate on-demand use. For example, in case of an e-mail service, availability is the cost incurred from having the mailbox and ability to send e-mail even if the user does not actually send any e-mail. The pricing mechanism for availability component is subscription, which means that the customer signs a contract for using the service for a certain period such as a month, etc.
3. **Operating Costs (Pay-per-use Service)** – The Operating costs is the 'unit' cost of operating the service to the client's specification. For example, a cloud computing programme could be charged either by time unit (hours used), computing unit (CPU cycles) or usage unit (application requests). The use of the cloud service is priced with a pay per use pricing mechanism. There is some predefined capacity unit to be measured and a customer pays in relation to his actual usage of capacity.

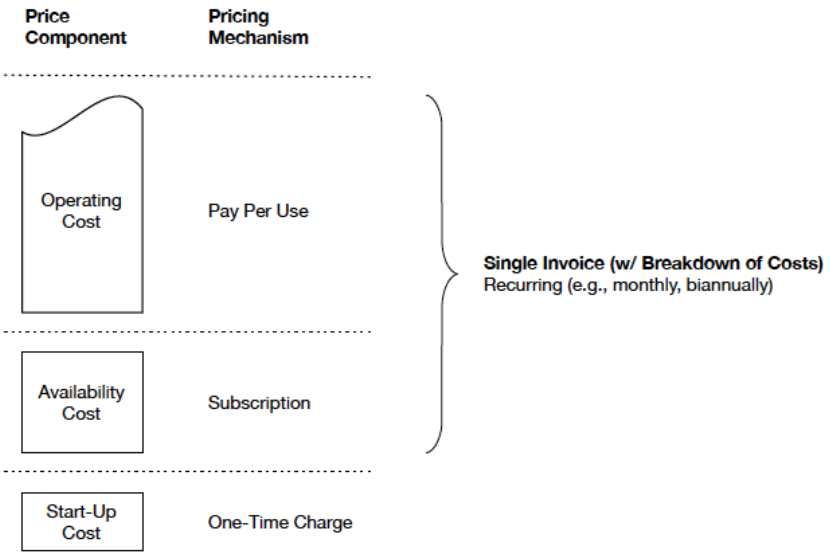


Figure 27: Generic Pricing Mechanism for EPIC Services

The above figure highlights that the operating cost price component is variable for a cloud-based service such as EPIC as the demand for services may expand or contract at short notice. The availability cost is fixed by the cost of maintaining the cloud solution. However, the availability costs can be reduced by migrating to a larger/ lower cost cloud provider which achieves superior economies of scale. Finally, the Start-Up costs in the case of EPIC are fixed as the cost of establishing the entity which vends the solutions. The cost of the infrastructure has already been covered by EC/ partner funding and is therefore external to the considerations of this pricing model.

Based on the above considerations, the EPIC model will generate an offering to the consumer under the following price conditions:

Offering Element	Pricing Model	Price
EPIC Roadmap	Free Publication	Free to Use
Cloud Environment	Subscription Service	TBC [Price of Basic Cloud Solution/ Additional Unit Cost per Customer]
Cloud Services (Service Catalogue)	Pay-per Use	Flexible (Per Service) [Unit price of individual service + Unit cost of service operation]

The above pricing model provides a general overview of the rationale for pricing EPIC offerings. The final price will reflect a number of additional factors which will be determined during the course of business set-up. Factors which affect final pricing include (but are not limited to):

- Costs of establishing legal entity to vend EPIC solution
- Exact cloud solution chosen to host the EPIC cloud environment
- MarCon costs of promoting solutions to customers
- Price expectations and financial health among customer demographics
- Competitor behaviours and pricing structures
- Economies of scale offered by increased platform uptake

EPIC understands that successful product pricing requires a flexible approach which adapts to the rapidly changing market environment of Smart City services.



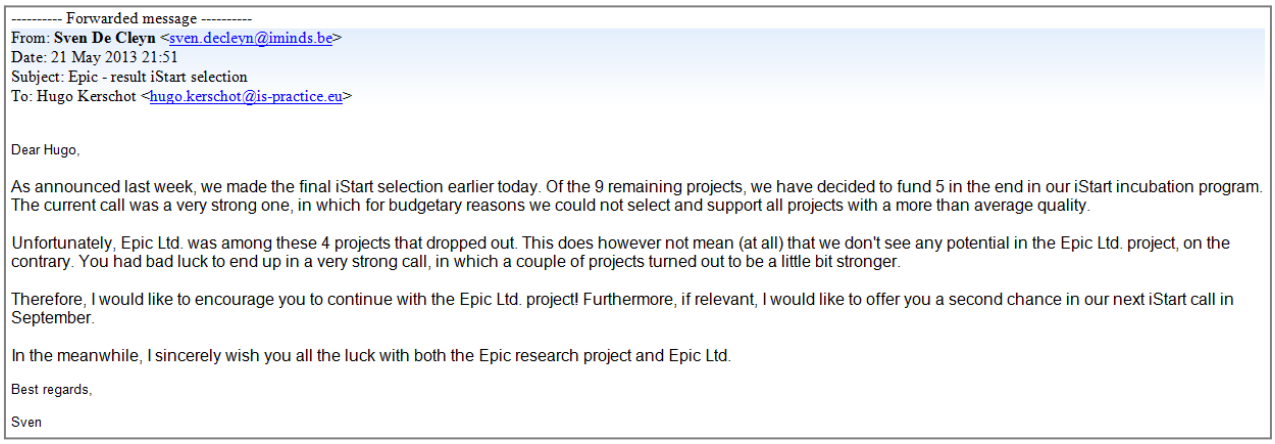
Figure 28: Estimated Minimal Start Up Costs for Beginning New Venture

5.6 Next Steps

Members of the EPIC Consortium are currently preparing for submission of the EPIC Business Model to the iStart Business Incubation Grant competition[6]. Upon successfully passing the iStart review process, the team will receive potential funding of up to €100,000 along with business mentoring to start an official EPIC venture.

A business plan was originally submitted by IS-Practice, ATC, 21c and Navidis to an earlier round of iStart grant giving in May 2013. The plan passed the first selection round and was invited to pitch the business model to a panel of entrepreneurs and investors.

Unfortunately, EPIC was not selected for a grant at this stage, as the panel felt that the other 'pitchers' did not have any IPR issues to contend with. However, they noted that EPIC is a worthy idea and encouraged the team to resubmit during the next round of the competition in September.



---------- Forwarded message ----------
From: **Sven De Cleyn** <sven.decleyn@iminds.be>
Date: 21 May 2013 21:51
Subject: Epic - result iStart selection
To: Hugo Kerschot <hugo.kerschot@is-practice.eu>

Dear Hugo,

As announced last week, we made the final iStart selection earlier today. Of the 9 remaining projects, we have decided to fund 5 in the end in our iStart incubation program. The current call was a very strong one, in which for budgetary reasons we could not select and support all projects with a more than average quality.

Unfortunately, Epic Ltd. was among these 4 projects that dropped out. This does however not mean (at all) that we don't see any potential in the Epic Ltd. project, on the contrary. You had bad luck to end up in a very strong call, in which a couple of projects turned out to be a little bit stronger.

Therefore, I would like to encourage you to continue with the Epic Ltd. project! Furthermore, if relevant, I would like to offer you a second chance in our next iStart call in September.

In the meanwhile, I sincerely wish you all the luck with both the Epic research project and Epic Ltd.

Best regards,

Sven

Figure 29: Email Notifying EPIC of the Outcome of the iStart Business Incubation Competition

Between now and the end of the project, the Consortium will work together to formalize IPR use, and will further develop the 'start up' business plan including refining the financials for use for the iStart incubation initiative and/or other grant programmes. The list of activities to be undertaken is detailed in Figure 30.

The team is drawing up a list of Venture Capitalists in the UK that members of the Consortium have links to, so pitches can be set up. The aim is to get the new venture up and running as quickly as possible, however to do so a minimum amount of capital has to be raised.

[6] http://www.iminds.be/en/entrepreneurship/incubation



Figure 30: EPIC Next Steps

6 Post-EPIC Business Plan – Community of Interest Scenario

As previously indicated the initial description of this scenario (scenario 5) was: "EPIC is Europe's leading Cloud and Smart Cities research, consultancy and advisory organization. EPIC delivers technology and policy related insight for public sector clients to make the right cloud based services decisions for their own smart city challenges. The membership-based community brings experts and practitioners together to discuss public sector ICT solutions, standards and the Roadmap for smarter city working. Revenue is generated through membership fees, project funding, consultancy and events"

This scenario was partially discussed by all the EPIC partners in the 1st teleconference held to assess the interest and contributions of all partners in each of the business scenarios. A second teleconference was held with the EPIC partners interested in shaping out this potential option for Post-EPIC business plan with a common conclusion explained below. The main areas of discussion were:

1. Type of organization: profit (business value) or non-profit (social value)
2. Competition and how to make a difference with existing communities.
3. How to rely on other existing communities

As a reply to the first point above, the EPIC partners interested in this option decided to apply the Community scenario as a non-commercial scenario, developed in parallel to the commercial scenario described in chapter 4, but establishing a strong link between both scenarios creating a single EPIC ecosystem.

Regarding to the competition, although it was not the purpose of this exercise to do a detailed assessment of existing communities that could "compete" with the EPIC community, some other communities were identified as potential competitors: Smart City Stakeholder platform (http://www.eu-smartcities.eu/) (non-commercial scenario), Citymart (http://citymart.com/Default.aspx) (commercial scenario), City Protocol society (http://www.cityprotocol.org/vision.html) (non-commercial scenario).

The third point of discussion ("rely on existing communities") provided the answer in the way to move forward. In one hand EPIC has relied on the Connected Smart Cities community (Smart City portfolio, described in chapter 2.3 of this document), as a multi-stakeholder sharing community that works now towards its continuation in Horizon 2020. On the other hand EPIC relies on the ENoLL community, a community of more than 300 Living Labs in Europe and all over the world. Each of these Living Labs integrates a whole innovation ecosystem, more and more associated to the city and regional context (urban and living labs).
As a non-commercial scenario, the community scenario does not release products but offers services to its community. The "Market" is the targeted community.

ENoLL is a supporting entity of the Smart City portfolio/Connected smart city network, being both communities complementary to each other. ENoLL, as a well-established and sustainable community-based organization, establishes the main foundations of the Post-EPIC community through a Smart City Working Group that crystalizes as a community in the activities jointly performed with the Connected Smart Cities Network, but that is also able to offer specific services to the community members and establish a link with the commercial post-EPIC scenario, mainly offering the existing ENoLL Knowledge center[7] and Market place.

FIA Dublin 2013, especially during the Connected Smart City workshop, was the place were the first conversations in this direction took place. ENoLL Summer school 2013[8] with a special session dedicated to EPIC in the Smart City track will finally consolidate and formalize the post-EPIC business community scenario.

In the subchapters below more information is provided about the ENoLL WG community solution.

6.1 Products

ENoLL is offering services to its members of the Open Living Labs Community: Services can be classified in 3 different types based on their access cost, effective members (5000 EUR/yearly), associated members (5000 EUR/yearly) and adherent members (administrative fee of 500 EUR). All information about the services provided by ENoLL can be found here: http://www.openlivinglabs.eu/enoll-services

6.2 Market

For the post-EPIC scenario: Urban Living Labs (cities, SMEs, research and innovation organisations, citizen representatives, etc) mainly in Europe but also all over the world.

6.3 Operations

The European Network of Living Labs (ENoLL) is both an open community and a legal non-profit association. The ENoLL international non-profit association, as the legal representative entity of the network, is headquartered in Brussels. The ENoLL Office manages the operational aspects of the network: community management, projects, services to members, communications and dissemination, strategic alliances and support to the

[7] http://knowledgecenter.openlivinglabs.eu/
[8] http://4thenollsummerschool.wordpress.com/

policy and strategic direction. Specific thematic domains and working groups are created according to the different interests of the community.

6.4 Management

As any other association, ENoLL has a Board of Directors (ENoLL Council) voted yearly by the ENoLL General Assembly. The ENoLL Council is represented by the ENoLL President, the ENoLL Secretary and the ENoLL treasurer.

6.5 Next Steps

EPIC will be represented during the upcoming ENoLL Summer school (August 2013, http://4thenollsummerschool.wordpress.com/) and special EPIC workshop will be held within the Smart City track, to among other things discuss this post-EPIC scenario with the community to incorporate feedback from it and to formalize the scenario in collaboration with the Smart City portfolio, with a final public announcement during the ENoLL Conference day in August 30th.

7 Final Project Workshops

7.1 EPIC @ Samos Summit: Digital Innovation for Government, Business and Society

Background
On Wednesday, July 3, 2103, EPIC will host an end of project workshop at the upcoming 2013 Samos Summit.

The Samos Summit is being organised by EPIC Partner NTUA and will be held in Doryssa Hotel, in Pythagorion, Samos on 1st – 3rd July 2013 and is co-organised by the University of Aegean, the Greek Interoperability Centre of the National Technical University of Athens, the ENGAGE project on Open Data, the NOMAD and PADGETS projects on Social Media policy making (co-funded by the European Commission).

Objectives
The workshop is designed to:

- Showcase EPIC project results
- Inform new public and private sector stakeholders about the EPIC platform and marketplace

Rationale
EPIC chose the 2013 Samos Summit Digital Innovation for Government, Business and Society to feature its end of project workshop because the event offers an unprecedented opportunity to see, interact with and engage high caliber experts from research institutions, administrations and enterprises across Europe as well as cutting-edge European ICT research projects and initiatives.

EPIC further chose Samos, not only because NTUA is a project partner, but because the Summit will also feature a special Summer School on Open and Collaborative Governance which enable EPIC team members to offer younger members of the European research community an in-depth project workshop on the EPIC technical platform and roadmap.



Agenda

Following represents a high level overview of the EPIC presence at Samos. Though please note the agenda is being finalized and workshops may change days:

Date	Format	Description
3 July	**Plenary Speech**	Introduction to EPIC and Invitation to the 'Show and Tell' Workshop Dr. Julia A. Glidden, Managing Director, 21c Consultancy
3 July	**Special EPIC Workshop**	End of Project Workshop Featuring: • Live demonstrations of the EPIC Platform • Featured demonstrations of EPIC apps • Detailed discussions of the EPIC Roadmap for becoming a Smart City • Promotion of the EPIC Marketplace • Proactive Stakeholder Engagement ***All Consortium members
5 July	**Summer School Tutorial***	**Session I**: A roadmap for smart cities: Leveraging cloud computing for delivering smart city services Michel Dirkx, Senior consultant - Technology Strategy & Architecture Deloitte Consulting Belgium **Session II**: EPIC under the covers: What technologies make it work ? William J. Hymas, IT/Specialist – Enterprise Business Services, IBM Germany

*As shown above the Summer School Tutorial is split into two sessions. The detailed descriptions for each of these sessions are as follows:

Session I Title: **A roadmap for smart cities: Leveraging cloud computing for delivering smart city services**

Description: In recent years, the concept of 'smart city' has been widely used by cities and commercial organisations to communicate and promote different types of initiatives or solutions in a city context. Especially in the policy arena, the concept of 'smart city' has been quite fashionable. As a result, there are various definitions for what a smart city is or which characteristics define a city as being 'smart'.

For smart cities, the main focus seems to be on the role of ICT infrastructure, although much research has also been carried out on the role of human capital/education, social and

relational capital and environmental interest as important drivers of urban growth. An important focus will be on combining institutional, human and technology enablers in key domains for forward-looking and sustainable urban development.

In this session, we will present a concrete and useful roadmap for cities and city administrations in their journey towards a smart city and the implementation of smart city solutions using the European Platform for Intelligent Cities (EPIC). We will explore the different steps of such a roadmap, starting from defining a strategy for smart city development to the design and implementation of smart city services using this cloud platform and service catalogue. This will help in understanding the potential value of leveraging cloud computing for delivering smart city services, in support of city administrations, citizens and businesses.

Session II Title: **EPIC under the covers: What technologies make it work…?**

Description: Everyone seems to want a 'smart city' . . . after all, who would want to be known as a 'dumb city' . . . ? But after the salesmen and the city officials shake hands, the technical specialists need to get down and actually make it work. Many technology options offer themselves, and the concepts themselves of a what constitutes a 'smart city' are vague and open to interpretation.

One requirement is always crystal clear for the city officials: “It should do everything, and cost nothing!” Obviously, the technical specialists tasked with realizing the 'smart city' platform think about this more pragmatically. The actual requirements and options need to be carefully evaluated in order to decide on how the platform will be actually implemented and operated. And the final result still needs to fulfil the expectations of the stakeholders involved.

In this session, we will present the technologies that were chosen and used for the EPIC platform. We will describe the functionality of the WebSphere Application, Portal and Process servers, and the security aspects of the entire platform. The development tools and how they are used to create applications and services for the EPIC platform will be explored. Details of the MQTT technology used for the Energy applications and services will also be presented. We will present how the service catalog is used by developers, in contrast to the business use.

EPIC Partner Participants

***Registered Participants from the EPIC Consortium that will participate in the Samos Workshop are as follows:

Name (Organisation)	Name (Organisation)
Pieter Ballon (iMinds)	Yannis Kliafas (ATC)
Hugo Kerschot (IS-Practice)	Wouter Van den Bos (iMinds)
Jiri Bouchal (IS-Practice)	Wilhelm Stoll (IBM)
Keith Osman (BCU)	Sebastien Jehlen (Issy Media)
Ravi Coote (Fraunhofer)	Pavlos Kranas (NTUA)
Shenja van der Graaf (iMinds)	Bill Hymas (IBM)
Michel Dirkx (Deloitte)	Julia Glidden (21c)
Anna Kivilehto (ENoLL)	Susie Ruston (21c)
Wim Vanobberghen (iMinds)	

Anticipated Results

Following EPIC's strong end of project presence at a leading conference in the European ICT circuit, consortium members expect to:

- Identify innovative new applications that have been created by other European projects and that can be sold via the EPIC platform and marketplace
- Promote the EPIC platform and marketplace to new actors across Europe
- Engage new actors from academia and the public and private sectors
- Establish the basis for a sustainable post-project community of interest

7.2 EPIC @ ENoLL Summer School

To build upon the results of the Samos Summit, EPIC will participate in the 4th ENoLL Summer School in Manchester (UK), August 27th-30th, 2013.

Background

This three day Living Lab Summer School builds upon three previous Summer School editions (see Annex 3) in Paris 2010, Barcelona 2011 and Helsinki 2012 and will be co-organised by EPIC Partners the Manchester Digital Development Agency (MDDA) and the European Network of Living Labs (ENoLL). Over 100 participants, including 'old' and new members of ENoLL, city representatives, universities and SMEs from across Europe are expected to attend.

Rationale

The 2013 Summer School includes several workshops, presentations and excursions and site-visits with the aim of giving participants wider insights into models, theories and technologies related to Living Labs as well as the opportunity to gain hands-on experience from the leading Living Lab experts. Participants are pro-actively encouraged to network with other Living Lab enthusiasts. A key aim of the Summer School will be the development of a global knowledge exchange in which participants are invited to meet local change agents, innovators and entrepreneurs through a series of study visits. The focus will be on how local innovation can benefit from cross-border collaboration in exchanging ideas, practice and experiences.

Agenda

EPIC will be featured during a parallel track on smart cities on 28 August. Key elements of this track will include discussions between cities on 1) how best to use and benefit from the EPIC Roadmap and Market Place and 2) the value of the EPIC Service Catalogue to the ENoLL Living Lab Market Place which enables cities and Living Labs to buy technical services and consultancy from other cities and Living Labs.

Results

The participation of EPIC in the ENoLL Summer School will showcase the way in which EPIC is an example of a real-life Living Lab test and experimentation environment in which users and producers co-create innovation in a trusted open ecosystem. It will provide a valuable opportunity for EPIC to share good practice, lessons learnt and results from the project with ENoLL' s established network of cities and Living Labs and to position the EPIC post-project offering within the wider ENoLL network.

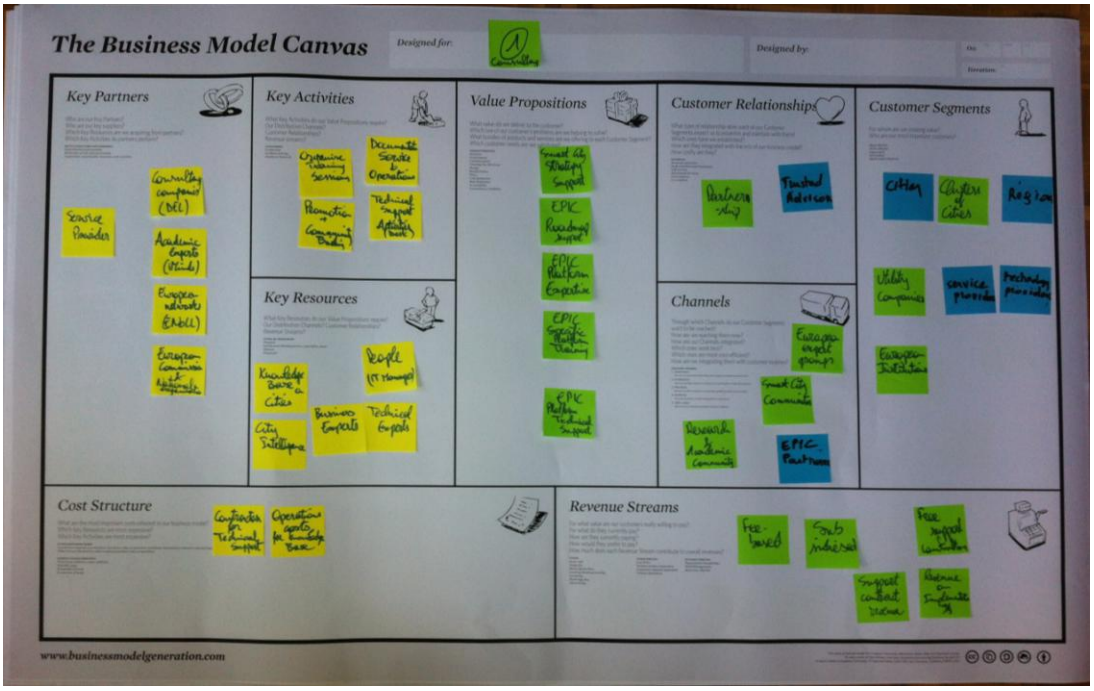
Annex 1: Consolidated Business Model Feedback from Consortium

Group Brainstorm on Initial Business Model Feedback from Consortium:

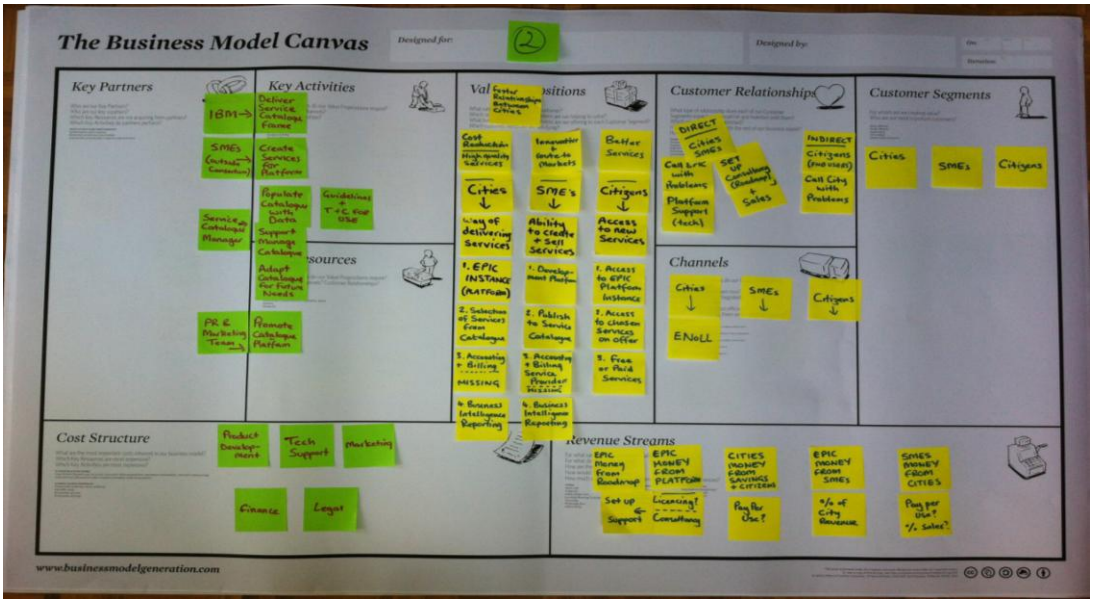
- Take Navidis financial estimations for France and apply to other countries
- ENoLL believe many competitors are in this space – especially the main ICT providers
- Need value proposition in order to reassess the market research
- Mustn't lose value of individual partners exploitation plans – understand better relationships between partners in terms of being able to market – core links between products and services
- However, we have to have a viable commercial outcome to show the Commission either as a new company or a variety of partnerships
- Need to create partnerships with cities – not treat them solely as a customer – in order to create the market with other enterprises in the cities
- In terms of competitors most seem to have vertical business streams – but EPIC platform is in a position to cross cut market segments – public sector is not the only target audience
- Missing a Telco in our consortium - they have influence with government and cities and have access to infrastructure funding – also look at other partners in smart grids?
- Partners give assets and resource
- Need to sell the innovative services to Cities – they don't care about the cloud environment per se – it's more important to them to have innovative, good quality services
- Best not to sell a technical solution to a city, rather sell them a solution to their policy challenges
- Highlight pan-European value add for cities like joint procurement savings

Annex 2: Pictures of Workshop Exercises

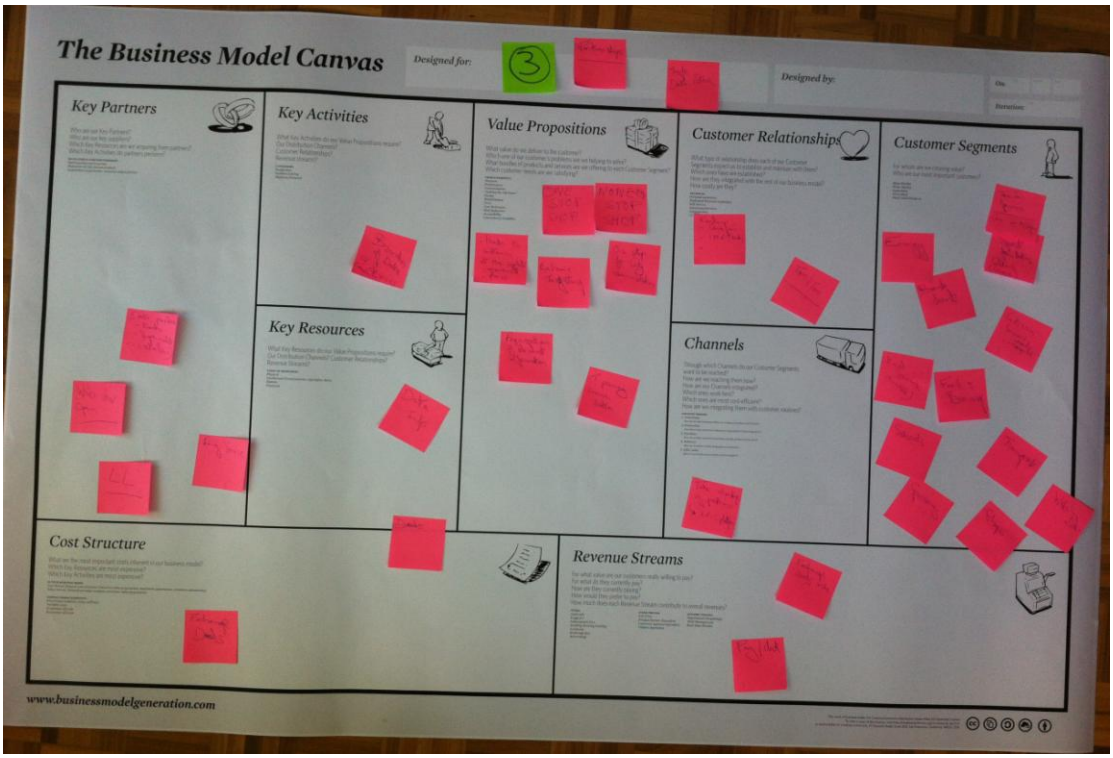
Business Model Canvas for Scenario 1



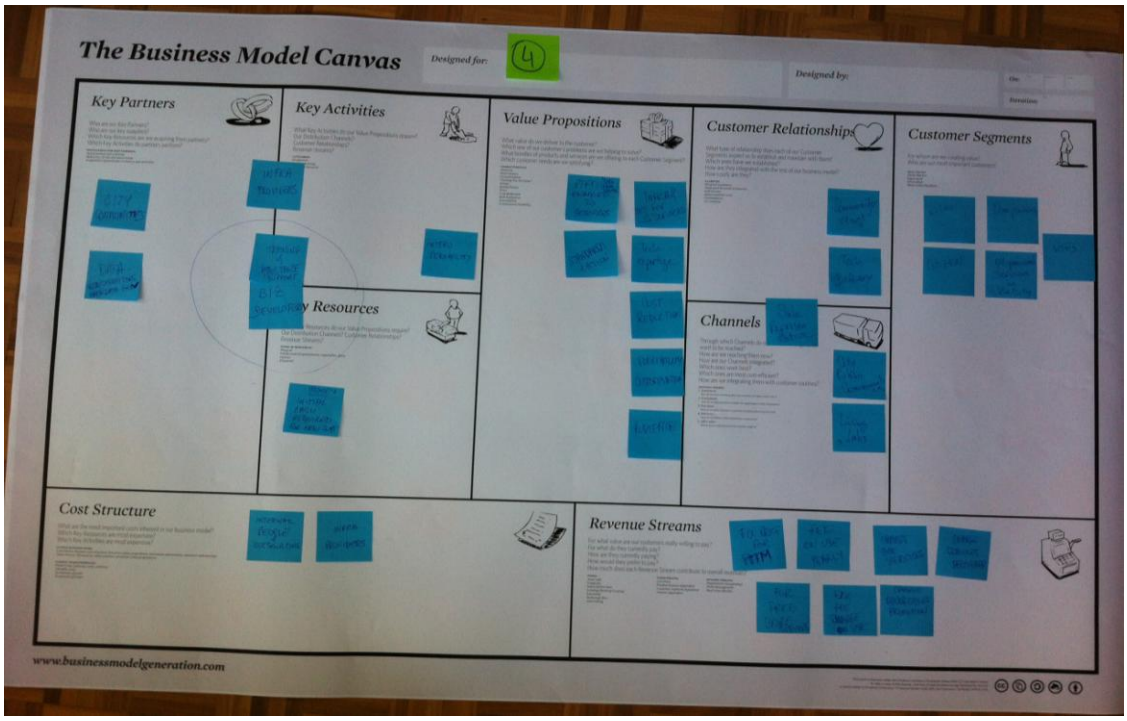
Business Model Canvas for Scenario 2



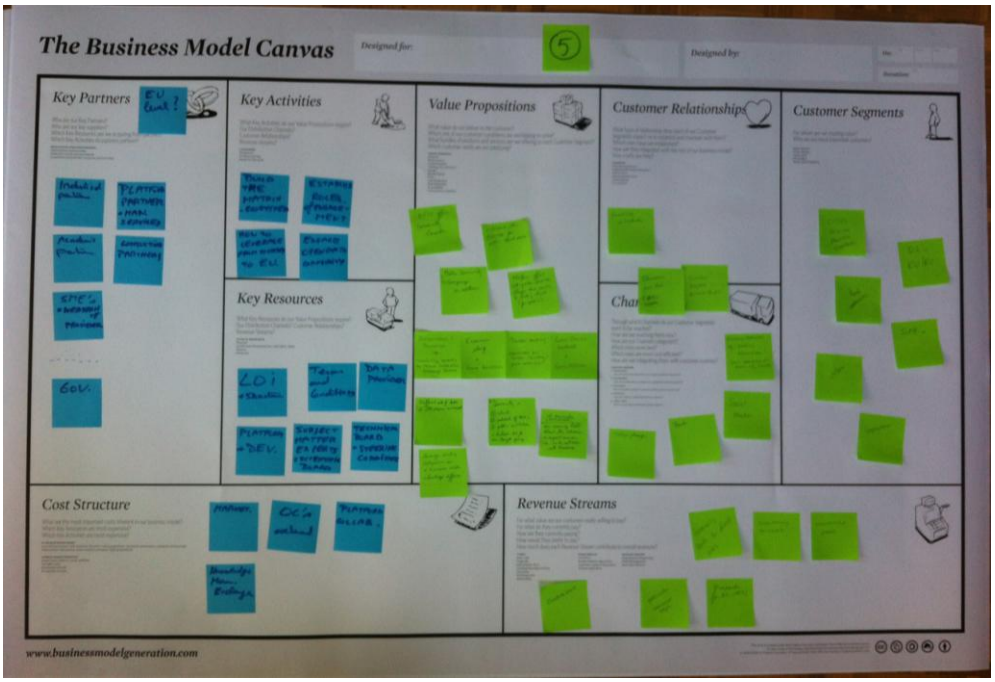
Business Model Canvas for Scenario 3



Business Model Canvas for Scenario 4



Business Model Canvas for Scenario 5



Annex 3: ENoLL 2012 Summer School Results

Bridging the gap between RDI results and their use from micro to the most macro level through Living Labs.

The III ENoLL Summer School took place in Espoo and Helsinki from August 21th to 23rd, 2012. On Monday the 20th August there was a pre- summer school day for participants who wanted to present their research papers on Living Labs.

The theme for the pre-summer school was "Bridging the gap between RDI results and their use from micro to the most macro level through Living Labs".

The Summer School provided participants an opportunity to test and develop the Five Skills of Disruptive Innovators introduced "The Innovator's DNA": · Associating – making connections across seemingly unrelated questions, problems, or ideas · Questioning – a passion for inquiry · Observing – carefully watch customers, technologies, firms, etc. · Networking – find and test ideas through a diverse network of individuals · Experimenting – try out new experiences and ideas



The event accommodated around 170 participants from Living Labs, enterprises, SMEs, municipalities and educational institutions around the World. The summer school therefore welcomed entrepreneurs, innovators, designers, consultants, researchers, local politicians, civil servants, professors and students to participate.

The Summer School had a multilevel approach to Living Labs, exploring both the micro level product development as well as the needs for designing macro level societal innovations and transformation. The summer school participants identified together, compared and developed methodologies and implementation toolkits used in Living Labs. The summer school highlighted the development and future opportunities of the Living Lab movement in bringing together the regional actors with the users, citizen communities, researchers and companies. The Europe 2020 strategy and its flagships such as the Digital Agenda and Innovation partnership were also the focus of the 3rd summer school. Moreover, the summer school co-created methods and strategies on how the regions and the renewal of industries could benefit from the Living Labs approach and how the Living Labs, at the same time, can

develop their business models and benefit from the EU funding instruments. For this purpose, practical Living Lab cases such as eHealth/eCare were elaborated during the Summer School.

In order to activate the use and commercialisation of Living Labs results and innovations, the Summer School invited participants to introduce their overlapping innovations to the companies and other Summer School participants. The participants were provided an opportunity to share and explore their experiences related to topics such as building a thematic Living Lab, building a territorial Living Lab, transforming a research organisation in to a Living Lab, building cross boarder Living Labs, or becoming a smart city.



During the three-day summer school, selected experts conducted different learning and innovation sessions. Presentations from previous Living Labs experiences and user driven cases were heard and opportunities for consortium building to address the EU funding instruments were organised. As a part of the Learning method in this summer school, excursions to the Living Labs related sites in the Helsinki metropolitan region were organised. In addition, the participants got familiar to the World Design Capital 2012 programme.
Laurea Living Labs Network was the host of this event with the support of its partners Aalto University and Forum Virium Helsinki.

Laurea organised the III Summer School in collaboration with: the European Network of living labs, Citilab Cornella, the AMI communities, ESoCe NET, Asian Smart Living Summer School.