Deliverable D100.2

Business Case & Requirements Analysis

WP 100

Grant Agreement number:	NMP2-LA-2013-609143
Project acronym:	ProSEco
Project title:	Collaborative Environment for Eco-Design of Product-Services and Production Processes Integrating Highly Personalised Innovative Functions
Funding Scheme:	IP
Date of latest version of Annex I against which the assessment will be made:	01.10.2013 (Version I)
Project co-ordinating Partner:	Fundación Tecnalia Research & Innovation
Project co-ordinator contact details:	Mikel Sorli, Dr +34 946 400 450 mikel.sorli@tecnalia.com
Project website address:	www.proseco-project.eu
Start date of the project:	01.10.2013
Duration:	48 months
Responsible of the Document:	ATB
Document Ref.:	D100.2 Business Case and Requirements Analysis
Version:	V2.0
Issue Date:	13.02.2014

1   Executive Summary

The ProSEco project aims to provide a novel methodology and a comprehensive ICT solution for collaborative design of product-services, using Ambient Intelligence (AmI) technology, lean and eco-design principles and applying Life Cycle Assessment techniques, allowing for effective extensions of products of manufacturers in different sectors (automotive, home appliances, automation equipment etc.) and for enhancement of the product-services and their production processes in the direction of eco-innovation.

The project is driven by four industrial application scenarios – Business Cases (BC) – addressing different aspects of service and business building and product/process development, in order to assure industrially relevant development of the means for collaborative service generation and product/process design. The solution will be first applied at 4 manufacturers in the consortium, serving as demonstrators of the project result. The expected results shall be applicable to a range of industrial companies and sectors. Therefore, the project has selected four distinct Business Cases which will define the reference settings for the specific R&D work in ProSEco.

This report presents an initial description of 4 BCs, serving to extract requirements upon the ProSEco solutions (methodology, platform, engineering tools and so-called core services). An active involvement of all actors, i.e. all industrial and research partners in definition of the Business Cases is being pursued. The joint approach in the definition of all BCs has been applied.

The Business Cases in ProSEco are heterogeneous. They can be structured in two main groups: The first 2 BCs address development of services around personalised mass products (BC1 vehicles and BC2 household appliances) where the new services are directly facing customers. The other two BCs address improvement in customisation of specialised products (machines) by extension with new services to allow for provision of highly personalised products (shoes) and effective maintenance services (BC3) and by enhancement of collaborative machines design addressing specifically ecological aspects (BC4). Therefore, the project aims to address challenges of finding common methods and ICT solutions for supporting product-services in cross-sectorial domains of both mass products and specialised products markets.

In BC1 the large automotive industry Volkswagen (VW) intends to provide infrastructure for building various services using information from AmIs and sensors in the vehicles. The objective is to allow both internal and external Service providers to build various types of services using information from vehicle sensors. The main challenges are to provide collaborative platform for building such services, tools to support selection of AmI systems and sensor for various services, as well as core services to allow for using information from AmI systems and to allow for context sensitivity of the services. The key aspects to be addressed are security and privacy, as well.

In BC2, Electrolux, one of the leading producers of household appliances as well as professional appliances and equipment for cleaning and kitchen, is looking for newer, smarter ways for consumers to interact with appliances, and it aims to connect innovative services with their washing machines, dryers, dish washers, ovens, refrigerators, air conditioners and even vacuum cleaners. There are 2 main service scenarios addressed by the business case: The first scenario addresses the consumer behaviour. The behaviour is modelled in order to understand trends and possible improvements related with these behaviours. In the second scenario, Electrolux addresses the maintenance problem. The scenario will demonstrate that the platform can predict and prevent future problems with the hardware, so the platform should behave, in order to schedule the maintenance activities according to this analysis. Therefore, the key need is to provide means for building services and allow for collecting and analysis data on customer behaviour.

BC3 involving Desma, a shoe machine producer company, includes two scenarios which address direct and indirect customers. The first scenario is addressing mainly the indirect customers (shoe labels and consumers). The aim is to transfer them into direct customers by implementing the concept of a shoe shop where the consumer self is able to design his shoes or to buy designs of shoe labels combined with an production on demand concept. The second scenario is addressing mainly the direct customers of DESMA aiming at optimization of maintenance processes by implementing improved SW services for production systems. The key needs are to provide means for efficient building of services in these two scenarios, such as tool for selection of AmI systems, context awareness, service deployment infrastructure and service configuration.

BC4 involves ONA, a machine tool builder, and their value chain supplier ALBERDI. Both are interested in collaborating more with the customers in order to improve the product design process and both are also interested in testing how eco-design principles and LCA techniques could help to reduce the environmental impact of their products. Moreover ONA needs means for the development of new services for remote

maintenance and diagnosis. In order to achieve this, intelligent Product Extension Services (PES) will be installed to optimise the environmental impact of product design process and information from AmI systems will be used to identify customers' patterns that can help to personalise product-services in a collaborative environment

Although these four cases are diverse at first sight, there are obvious communalities that will be addressed by the platform, engineering tools and core SW services of ProSEco, such as services to obtain information from AmI systems, to extract context under which the products/services are used etc..

These four cases were used to define general requirements upon the ProSEco platform, tools and core software services to be developed. These four Business Cases are typical for manufacturing industrial organisations in various sectors. Therefore, it is very likely that the tools and services to be developed within the project to satisfy needs of industrial partners in these Business Cases will be applicable to a wide scope of industrial settings. However, in order to assure high applicability of such services, additional extra-consortium companies' requirements were gathered.

After this first description of the different business cases and the elicitation of general requirements, a more in depths analysis of the specific cases will follow and the methodology, platform, engineering tools, core services will be elaborated in the concept definition phase of the project. The ProSEco solutions will be customised and combined with application specific tools/services within the specific business cases. Within WP 500 (D500.31) the business cases will be specified in more detail, including specification of the interfaces between the ProSEco tools and PES with various systems/tools within each BC environment, definition of data to be used in each BC, customisation needed etc.

Update of the deliverable:

The deliverable has been updated based on comments/recommendations from Project Officer and Project Technical Advisor. The following updates have been carried out:

- All four Business Cases have been updated with more technical details. Please note that the full technical specification of the BCs will be provided in D.500.31. Business Cases Specification and Infrastructure – First Version.
- In BC1 more examples of possible Product Extension Services (PES) is provided. However, please note that prime objective of the ProSEco is to develop engineering tools and core services allowing for easy building of very different PES. The services presented in this deliverable are only examples of possible services to be built. Specifically, in BC1 the intention is to provide the tools allowing for building PES by different external service providers.