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D8.3 Report on Innovation Transfer Activities

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Index:

1.   Executive summary

The purpose of the project is to create an innovative distributed platform which allows networked monitoring and control of large-scale complex systems by integrating heterogeneous smart objects, legacy devices and sub-systems to achieve overall systems' efficiency. Specifically, the main goal of this report, D8.3 Innovation Transfer, is show how the dissemination of knowledge and transfer of results to the users and industrial can be achieved.

The areas for companies with potential interest were identified as part of a business market analysis study made as part of deliverable "D8.1 Report on the business strategies and exploitation plan". The actual deliverable reports all the activities developed during the project with the purpose of disseminating these using a simple language to a broader community area.

2. Introduction

2.1   Purpose, context and scope of this deliverable

To guarantee the industrial impact of the research development conducted in the project, specific efforts has been dedicated to innovation transfer. Potentially interested companies was identified through the partners own network and through industrial association in order to target them with seminars that will address mainly the industrial impacts of the concepts developed by the project. Moreover, it was planned to extend the industrial audience publications tailored to non-scientific magazines. The partners COMAU represented the industrial view on innovation and IN-JET provided the link to the developed business strategies and exploitation plans.

This deliverable thus contains three parts:

The section 3 is the report on the innovation transfer activities carried out towards industry. These activities partly took the form as dissemination activities specifically targeted at industrial users, and partly as dedicated training seminars for potential industrial users.

Section 4 summarised the publications targeting the industrial audience, which have been produced in the course of the project.

Finally, the section 5 brings an updated version of the developed business strategies and exploitation plans. These plans were first developed and reported in D8.1 Report on the business strategies and the exploitation plan in M12. The consortium wanted to revisited the document and update the exploitation plans at the end of the project.

2.2   Background

The European manufacturing industry suffers a deep crisis due to an overcapacity of production, while in Brazil there is a steady economic growth that is pushing manufacturing companies to increase their production rates. Despite these differences, in both the geographic areas there is an increasing need for flexibility in production activities that must adapt to a continuously changing world market demand.

The BEMO-COFRA project aims to develop an innovative distributed framework which allows networked monitoring and control of large-scale complex systems by integrating heterogeneous smart objects, legacy devices and sub-systems, cooperating to support holistic management and to achieve overall systems' efficiency with respect to energy and raw materials.

The BEMO-COFRA smart objects are heterogeneous with respect to sensing/actuation capabilities as well as processing and communication resources. They interact with each other through cooperation and can form communities of self-organizing, networked cooperative elements.

The main outcomes of the project will provide a highly relevant industrial tool for improving productivity through the adoption of distributed control architectures and innovative MES (Manufacturing Execution Systems).

3.   Report on the innovation transfer activities

Innovation transfer involves the transfer of a new idea or method for solving a problem from one group or individual to another, typically from a process improvement consulting group to a client business.

In this section we define the innovations created in the BEMO-COFRA project and how these innovations have been presented to the industrial community.

3.1   Innovation transfer I, Minas Gerais, Brazil (22th to 24th May 2013)

Feira de tecnologia, inovação e relações empresariais do Centro Federal de Educação Tecnológica de Minas Gerais (Cefet-MG) – 22th to 24th May 2013

Target group:

Companies of various sectors

Objective:

The event was organized to promote the interaction between students and the business sector, stimulate new research projects, bring jog opportunities to the students and promote experiences change among the participants.

There were around 22 companies of various sectors. The companies were from sectors like drink, transportation, metallurgy, aircraft, bank, mining and others. Being at a technological centre was a great opportunity to expose the BEMO-COFRA project. The project was presented as an innovation project related to wireless sensor network inside an industrial environment. The companies' agents were very welcoming to the BEMO-COFRA idea and were very interested of the results already achieved. The possibility of easy reconfiguration, reduction of costs and control energy consumption were the major interest of the industry agents. Also the students showed a big interest at the project, special as an opportunity to work with innovation in their future jobs.

Figure 1 Audience at event I in Minas Gerais

3.2   Innovation transfer II, Bahia, Brazil (*23rd to 25th September 2013*)

28º Congresso Brasileiro e 5º Congresso Mundial de Manutenção e Gestão de Ativos, Centro de Convenções da Bahia – 23rd to 25th September 2013

Target group:

Industries of oil, chemistry, automobile, pulp and paper.

Objective:

This is the major event of maintenance and asset management at Latin America. The goal is show the technological progress and management techniques related to quality improvement, productivity, security and reduction of costs at maintenance, beyond the environment preservation.

There were at this event companies from sectors which are goals to BEMO-COFRA project business model as was shown D8.1. One important improvement of BEMO-COFRA is become easier the maintenance of sensors and the network as well, with the platform we are able to control de devices at the industry line with the mobile HMIs. So it was a great opportunity to show to these companies the innovation we were achieving with the BEMO-COFRA project as a great opportunity to improve the maintenance and asset management. The companies were welcome to the project and the foreign speakers, people with big importance at this area, told it is a very good idea develop easier networks to do maintenance and   new ways to improve the distribution of information to predictive and corrective maintenance.

Figure 2 Audience at event II in Bahia

3.3   Innovation transfer III, São Paulo, Brazil (*29th to 30th October 2013*)

3ª Edição da Conferência Sul-Americana de Manufatura – AMS South America Conference, São Paulo – 29th to 30th October 2013

Target group:

Automotive manufacturers

Objective:

This event is a meeting with the most important manufacturers and suppliers of automotive industry. The goal of this edition was discuss about the future of automotive manufacturing at South America, and how to becoming the global leader in this sector. Nowadays, the automotive manufacturing at South America deals with many challenges like market fluctuation, infrastructure and costs, but it still being a sector with high investment. The major investment is directed to improve the products and manufacturing processes.

The new factories in construction use brand new technology to increase the production and to reduce the environment impact, giving an efficient management of energy and raw materials. The objective of these new factories and the investments meets with the BEMO-COFRA aim, so this event was a great opportunity to show how the BEMO-COFRA platform can improve and help the manufacturers to achieve their goals.
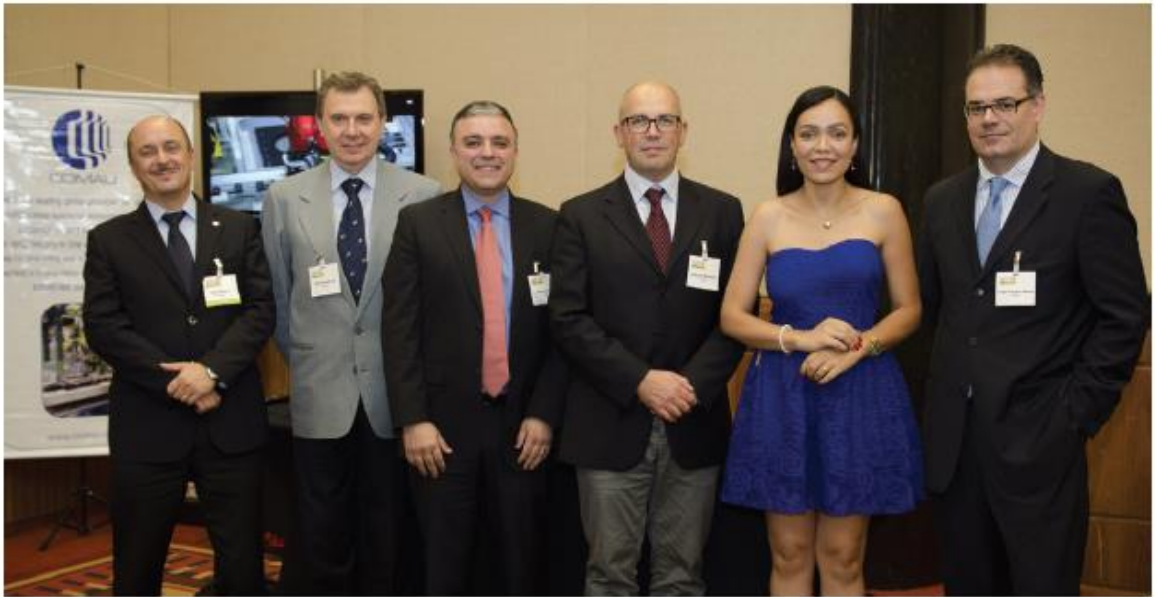
Figure 3 Audience at event III in São Paolo

3.4 Innovation transfer IV, Minas Gerais, Brazil (*19th November*)

Primeiro Simpósio de Robótica da SAE Brasil – Seção de Minas Gerais – 19th November

Target group:

Companies that Works with robotics being providers or end-users.

Objective:

The robotic is extremely used by industries of many areas of production. Also at the academic area, the interest for robotics is increasing, being one of the most popular area of study. This event met providers, end-users and researchers to discuss the future of robotics in all areas. Once BEMO-COFRA project is using robots to deploy your functionality and is directed to the industrial sites, where the use of robots is high, this event was an opportunity to show the project and discuss about the innovation that we can bring to this area.

Figure 4 Audience at event IV in Minas Gerais.

4.   Updated business strategies and exploitation plans

Exploitation can be seen differently depending on the partner: examples are new technologies to be included in new products (technology provider point of view), new concepts to be taught during classes (University point of view) or new guidelines on eco-factory practices to be provided to factory managers (end-user point of view).

The following activities were performed:

- Reconfirmation of stakeholders

- Update the commercial foundation in terms of user needs, market analysis and business models.

- Update Business strategies to exploit results by the different stakeholders

4.1   Stakeholders revisited

The general business model framework for marketing the BEMO-COFRA Distributed Framework can be seen as a pyramidal structure as shown in with thee value levels. At the top (the Meta level) we find the business activities of providing conceptual solutions to support the BEMO-COFRA platform.

At the middle (Primary Chain) level we find the actors actually engaging in exchanging value-added services based on the BEMO-COFRA platform and services.

At the lowest "Support Chain" level, we find the support actors engaged in delivering network infrastructure, devices and terminals and other support functions. These actors will not be analysed in detail, since they do not directly enter into the business model.
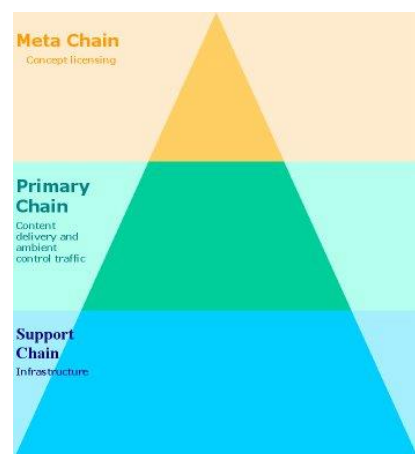
As an introduction for some further considerations about potential business opportunities in the selected user domains, in this chapter we briefly introduce the business model concept that was developed in other projects and that will also be used in the BEMO-COFRA project.

Each stakeholder has a certain business environment that will determine the most appropriate business model to be used in each case. This chapter will provide an overview of the generic roles of the stakeholders composing the business environment in which the BEMO-COFRA platform is going to be exploited. The scope of this chapter is to introduce the stakeholders to be involved in setting up, providing and buying BEMO-COFRA services.

The following meta-level stakeholders have been identified in the initial business strategies.

4.1.1 Concept Owner

The Concept Owner licenses the right to use the BEMO-COFRA platform to one or more Service Providers. The Concept Owner develops the concept in a suitable form, based on customer requirements. The Concept Owner may develop specific domain models for the customers or he may provide the necessary development kits for the customers to program their own applications. The customer pays an initial license fee plus a usage fee for the right to use the concept. In addition, the customer may pay development and customisation costs for the Concept Owner to develop specific solutions. The BEMO-COFRA technical partners will initially all be operating as Concept Owners.

In some cases, the BEMO-COFRA results such as radio interference studies, software prototypes, WSAN deployment best practices may be regarded as different concepts and sold as products. In such case, the customer will buy from the Concept Owner and install the desired BEMO-COFRA platform, perform integration with specified legacy systems, define and setup device networks, program appropriate applications and services and maybe even operate the platform in its entirety.

4.2   Stakeholders at the Primary chain level

In the primary chain we find the actors actually engaging in exchanging value-added services based on the BEMO-COFRA infrastructure. This could e.g. be actors in and around the car manufacturing industry. Some stakeholders are delivering services directly to end-users in a traditional supplier-customer relationship. Other stakeholders are providing the services as Application Service Providers, working on behalf of the supplier. Yet other stakeholders are enriching the basic services with additional services.

The flow of services in a generic primary chain is visualised in the following figure:
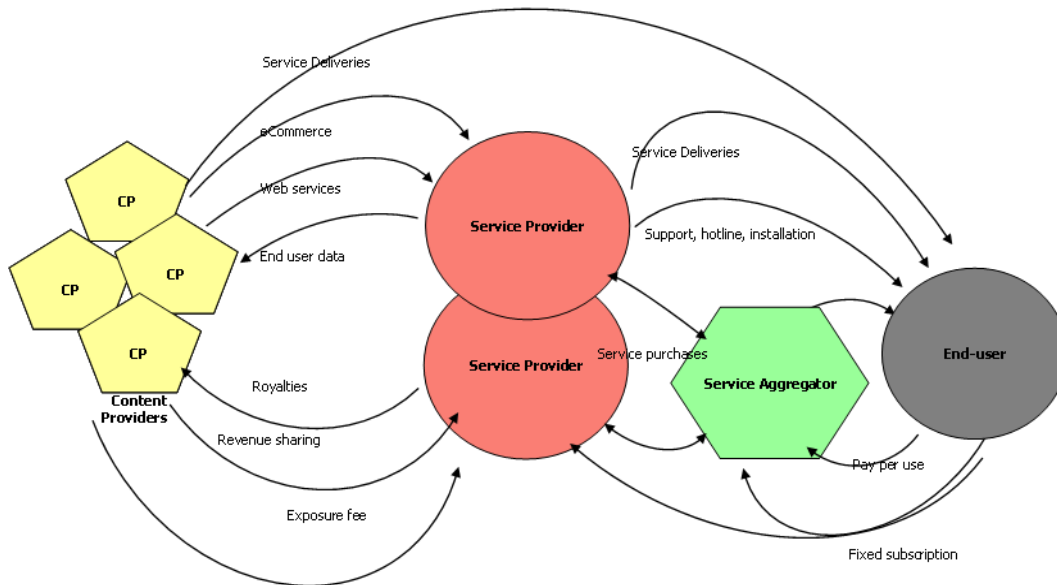

Figure 6 Actors and service flow in a generic primary chain network

In the following, we will look bit closer on the primary chain stakeholders:

4.2.1   End-users

End-users (or actors) are individuals (operators, plant managers, technicians, etc.) that consume one or more services provided via the BEMO-COFRA platform.

Typically, the end-user can also consume bundles of services from one Service Provider with each service coming from a specific Content Provider.

End-users are typically not buyers of the services. Services are bought by organisations where the end-users are employed. In some cases (free agents, independent maintenance people, consultants) the end-user may also be buyers of individual services provided by a Service provider.

4.2.2   Content Providers

Content Providers are "owners" of the "content" which the end-users are going to be engaged in. This could be the monitoring objects such as a production cell, a manufacturing line, or an entire plant. The "content" is the subject of the services such as for example energy data delivered to an energy monitoring services, machine condition data in an on-line maintenance of technical installations. Content Providers benefit from the end-users' usage of the services because the end-users can provide instruction or advise, which will optimise its operation. Or they can compensate the additional costs of the services by obtaining higher efficiency and lower operational costs.

In many cases the end-users will be employed by the Content Provider, e.g. the production line manager is employed by the car manufacturing plant, which is the content provider. In some cases,

the end-user is employed in an outside organisation, for example the end-user is a maintenance engineer of a supplier of production robots installed in a car manufacturing plant which is the Content Provider. The service is provided in order to have the robot manufacturer perform online maintenance and condition monitoring of his products inside the manufacturing plant.

4.2.3 Service Providers

A Service Provider is a firm that establishes the BEMO-COFRA platform and offers the functionality of the BEMO-COFRA infrastructure to end-users as Platform-as-a-Service or Software-as-a-Service. One could imagine that COMAU would be a Service Provider. The Service Provider will use one or more sub suppliers such as network operators, hosting companies as backbone and last mile delivery platform to the end-user.

Typically, a Service Provider will offer the services to a customer such as the Content Provider or to an owner of the Content Provider. The Service Provider can thus operate several concurrent but separated cloud services for various Content Providers.

The Service Providers generate revenue streams in the form of service fees from the Content Provider or the owners of the Content Provider and possible subscription and usage fees incurred by end-users depending on the contractual framework. If fees are paid by the end-users (e.g. external consultants) a part of the fee can be passed back to the Content Providers so that the stakeholders enter into a true value constellation scheme.

To manage the quality of service delivered by a BEMO-COFRA Service Provider, Service Level Agreements (SLA) must be agreed. The Service Level Agreement define the legal status and responsibilities of the BEMO-COFRA Service Provider and what kind of contracts are required between service providers (e.g. healthcare provisioning bodies or industrial domains), customers or patients, and the BEMO-COFRA Service Provider.

4.2.4 Domain Service Providers

In the case where a car manufacturing company wants to operate the BEMO-COFRA service exclusively for its own purpose and across its manufacturing plants and cooperation partners, with customised, dedicated services specific to its own domain, we use the term Domain Service Provider. The Domain Service Provider does not purchase the BEMO-COFRA concept. Rather the Domain Service Provider orders specific services developed and consumes the services as Platform-as-a-Service or Software-as-a-Service.

The services can be extracted from a Service Provider's service portfolio, but they are completely customised and secluded and fully integrated in the Domain Service Providers service offering.

The Domain Service Provider may pay the Service Provider by a revenue/cost sharing schemes or directly for the services provided, with the main revenues typically comprising the following items:

- Initial charges for installation and hardware (e.g. service gateways, devices, etc.)
- A periodic (e.g. monthly) subscription.
- Content usage fees (i.e. proportional to the quantity or quality of the content delivered).

Alternatively, the Service Provider may collect the revenues directly from the end-users.

4.2.5 Service Aggregators

When the Service Providers separate themselves completely from the services delivered and specialise in just operating the BEMO-COFRA platform on various network infrastructures, e.g. for a series of Service Providers or Domain Service Providers, we use the term Service Aggregators.

Service Aggregators can be likened to network operators (and are often such) that offer capabilities for value-added services on their networks. They only take responsibility for the technical operations of the service and front-end customer support is always directed to the Content Provider or to the Service Provider.

Service Aggregators derive their revenue streams from network traffic fees from end-users or from fixed service fees from the Content Providers or Domain Service Providers or both.

4.3   Potential Product Developments

The BEMO-COFRA aims to analyse dependability and scalability issues that still hinder wide adoption of WSANs for monitoring and control large-scale complex systems. For UFAM, through Emerging Technologies and System Security Research Group (ETSS), it means the possibility to develop innovative solutions that support dependability by leveraging on communication technology heterogeneity, self-configurability and context awareness, such as:

1.   Context-ware data transmission algorithms

2.   Algorithms for self-organization to manage multi-radio communications

In addition, the knowledge gained with the WSAN architecture design and the lesson learned with the prototype developed in BEMO-COFRA could help the partners providing a consultancy services for industries that want to integrate WSAN with its legacy systems and to monitor energy consumption of the manufacturing processes. Furthermore this can be exploited for providing consultancy services for manufacturers and certification bodies that want to promote green manufacturing. Our exploitation focus will be on the integration of industrial energy sensors and presentation of the energy data to the users.

Other potential product development including:

1.   Reliable WSAN for harsh environment is a big challenge at the moment. The lesson learned and prototype developed in bemo-cofra could help FIT and other partners providing a consultancy services for car manufacturers that want to use WSAN with possible theme such as the selection of WSAN technology, deployment strategies, and integration to existing systems.

2.   As smartphones and tablet becomes more pervasive in the recent years, car industry has shown some interest to use them providing the executive employees flexibility to monitoring their businesses while they are on the move.

3.   FIT could exploit this opportunity by providing service for industry to design and evaluate prototypes of mobile solutions.

4.   A prototype of iPad monitoring tool which is developed quite generic to be used in other discreet manufacturing industry such as electronics, aviation, Processed and Frozen food

5.   Rapid development tool for monitoring application that is built in BEMOCOFRA will be integrated into LinkSmart repository. This tool is very useful for supporting our work in developing software prototypes for other European and industrial projects

4.4   Updated market analysis

The industrial partner COMAU possesses special expertise in car manufacturing, in particular power train machining and assembly processes and body welding and assembly processes. The exploitation planning will thus in the first instance be directed towards this market. When the proper business strategies have been developed for exploiting this market, other industrial market will be considered.

The potential market for Fraunhofer FIT and COMAU is the car makers in EU & Brazil that seek ways to increase energy efficiency and reduce cabling costs in order to reduce the manufacturing costs or to comply with new environmental regulations and to exploit the marketing potential of sustainability. To pursue this market, cooperation with standardization and certification organizations need to be established e.g.: TÜV, Department of energy, Verband der Automobilindustrie or similar bodies. Market Size: 24 car assembly plants in Germany. 9.8% of passenger cars in the world is produced in Germany, 4.23% are in Brazil and 23.27% in the EU countries.

Manufacturing and car assembly in Europe already have faced a strong competition from the manufacturers located at BRIC and developing countries. As Manpower costs are higher in Europe, they will need to cut down the costs in other sectors such as energy and raw materials.

Volkswagen group has been the largest car manufacturing in Europe. They still have their factories in eastern Europe and Germany. They are expanding their market to Latin America and Asia with some parts still produced in Europe. Therefore although car manufacturing market in Europe will not increase as high as in developing countries, it will also not decline rapidly, since it is supported by the export to the developing countries.

Food production has a stable growth about 3% from year to year. This will continue to be stable in 5 years when the price of restaurant industry and fresh products will not decline rapidly.

The innovation activities were directed not only to the automotive market. We tried show the project to as many as possible industries of many areas. The interest around the project was worked as a future product for the industries and a new area of research for the universities and companies of research.

The industries of metallurgy, drink, oil and many others (see chapter 3) were very interested at the easiness of maintenance provided by the BEMO-COFRA project. The minimal use of wires, reducing costs, improves the network maintenance and making easy their set is the major benefit to exploit at the market. The food manufacturing industry is particularly interesting and we are looking into this business further. The size of the food manufacturing industry is one of Europe's largest and most important industry sectors. Table below shows a market growth from year to year among which Germany has the biggest consumption.

Sales of Frozen Processed Food in Western Europe by Country - Retail Value in US$ Millions

Country	2005	2006	2007	2008	2009	2010
Germany	7,750	7,985	8,243	8,517	8,648	8,788
United Kingdom	6,459	6,374	6,447	6,676	6,894	7,026
France	4,577	4,727	4,909	5,082	5,069	5,119
Italy	2,970	2,989	3,085	3,126	3,119	3,176
Spain	1,333	1,370	1,410	1,445	1,452	1,458
Sweden	1,166	1,185	1,211	1,266	1,292	1,317
Belgium	858	885	911	943	975	1,010
Netherlands	898	884	885	922	966	1,000
Norway	790	822	853	883	906	936
Denmark	773	783	797	829	853	863
Switzerland	662	669	683	712	727	743
Austria	606	631	643	660	688	717
Ireland	506	518	531	561	566	584
Finland	433	455	476	506	510	504
Greece	292	312	323	332	342	352
Portugal	267	277	287	305	311	322
Turkey	71	74	77	82	90	94

Source: Euromonitor International

Figure 7. Frozen food sales in western europe.

No.	Firm / Firm group	Turnover (billion EUR)	Main product areas
1	Tchibo Holding AG, Reemtsma, Eduscho (1)	7.986	Coffee, cigarettes, non-food
2	Oetker-Gruppe; Binding-Gruppe, Henkell & Söhnlein (3)	5.599*	Frozen food, beer, wine, ice cream, champagne, liquors
3	Nestlé-Gruppe Deutschland	5.480	Coffee, baby food, chocolate and confectionery, beverages, meat products and sausages
4	Sódzucker-Gruppe Sódzucker AG; Schöller	4.575	Sugar, ice cream, sweeteners, frozen food, biscuits and cakes
5	Procter & Gamble GmbH (2)	3.576	Detergents, cosmetics, fruit drinks
6	Bestmeat Service GmbH (4)	3.344*	Meat and meat products
7	Pfeiffer & Langen-Gruppe, Intersnack; Króger	2.960	Sugar, snacks, instant products
8	Deutsche Unilever GmbH	2.900	Margarine, dairy products, sausages, frozen food
9	Coca-Cola Germany	2.400*	Beverages
10	Nordmilch eG	2.230	Dairy products
11	Cobana Fruchtring GmbH & Co.KG	2.086	Fruits and vegetables
12	Kraft Jakobs Suchard Germany	1.900*	Chocolate and confectionery, coffee, cheese
13	Theo Móller GmbH & Co.KG	1867	Dairy products
14	Humana Milchunion e.G.	1.752	Dairy products
15	B+C Tönnies GmbH & Co.KG	1.600	Meat and meat products
16	Masterfoods GmbH	1.500*	Animal feedstuff
17	Atlanta AG	1.500	Fruits and vegetable
18	Kamps AG	1.486	Bread and bakery products
19	Ferrero oHG mbH	1.300	Chocolate, confectionery
20	Interbrew Deutschland Holding GmbH (5)	1.270	Beer

*1) Tchibo incl. Beiersdorf 2) Procter & Gamble incl. Wella (7/2004) 3) Oetker incl. Brau and Brunnen (6/2004) 4) Bestmeat incl. Nordfleisch and Moksel (Fusion 3/2004) 5) Interbrew incl. Spaten-Löwenbräu and Dinkelacker (9/2004) *estimated*
Source: own figure on the basis of lz-net: Rankings Top 40 Lieferanten Deutschland 2003/2004 (20.12.2004)

Figure 8. Revenue of German company manufacturing food (Source: M. Bergen, K. Golombek, M. Koneberg, "The food Industry in Germany"[1])

4.5   Update Business strategies to exploit results

During the project, the consortium will join effort in exposing and generating interest in the project's progress and results through various dissemination activities (as described) above in section 5.2 Dissemination which will help the future exploitation of BEMO-COFRA.

The effective exploitation of the results of the BEMO-COFRA project depends on an accurate understanding of the core competencies and resources of partners, and matching these to exploitation roles. The Consortium represents a true involvement from SMEs and industrial companies with an ideal combination of research and commercial expertise. The exploitation of the project's result will differ depending on whether the partner represents academia or industry.

4.6   Consortium Exploitation

The partners in the consortium come from different sectors covering multidisciplinary industrial, academics and technology providers; leading researchers in semantics, ontologies, and interoperability; renowned experts in distributed intelligence and sensor networks; system integrators and suppliers of manufacturing systems; software developers; and business development experts and

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[1] http://www.ip.aua.gr/studies/german%20team_final.pdf

economists. This will ensure that the project will provide highly relevant and directly applicable results of significant economical and societal impact, in particular:

- Software provider CNET is well known for their expertise in software architecture, XML based content and web service applications, semantic annotation, knowledge management and system integration.

- In distributed networks, FIT is one of Europe's leading institute on distributed network intelligence and security (together with its sister institute SIT). ISMB's Pervasive Technologies Lab is experts in short-range wireless communication networks and systems. VTT is world renown for their work in ICT Industrial systems.

- In the manufacturing area, leading industrial companies and research organisations with high innovation capabilities will ensure that innovative solutions are developed and utilised and that the results will be exploited in the academic area. COMAU is a world recognised leader in development of industrial automation equipment and robotics and full maintenance activities for equipment and plant.

- CNET, IN-JET and IVISION are innovative SME technology providers, who will gain leading technology developments in their respective areas of software, WSAN and control system development in manufacturing. They will greatly benefit from cooperation with the large companies, research institutes, universities and system integrators, in order to secure rapid uptake of their new technologies.

- The Computer Science Centre at UPFE is one of the most prestigious and renowned computing centres in Brazil and its Networking and Telecommunications Research Group is leading research of advanced topics in computer network and telecommunication areas. It has well-established connections with the regional energy company Chesf (Companhia Hidro Elétrica do São Francisco) and other Brazilian companies and industries.

- The research group Emerging Technologies and System Security (ETSS) at UFAM has core competence in wireless communications and system security. The group has well-established links with and conducts research for national industries and the Brazilian government.

There are five technological research institutions and universities involved in the project. For the research institutions, the project provides excellent opportunities for participating in multidisciplinary research work and creates excellent networks of industrial partners for uptake of their network and internet technologies. The industrial involvement in the project assures a professional, experienced and knowledgably platform for direct application of their research results.

Exploitation on consortium level includes those activities and plans made jointly, either as consortium as a whole or different groups of partners. Generally, exploitation will take place on a bilateral basis and agreements among subsets of partners.

4.7   Individual Partner Exploitation

Partner	Exploitation
FIT	FIT aims at acquiring research projects at the national and European level which has been successfully executed with the acquisition of manufacturing related project E3 (Fraunhofer funded project), and Monitoring and Control platform project, IMPReSS. Moreover, FIT's goal is to achieve a showcase of intelligent monitoring and control system based on WSAN and mobile devices as a tool to acquire industry projects from the car makers in Germany and Italy. FIT will contribute on developing the demonstrators and prototypes in BEMO-COFRA specifically in developing mobile applications.

	We will show this demonstrators in the exhibitions where the major player from the automotive industry will participate such as Hannover Messe.
CNET	CNET plans to exploit LinkSmart extensions with a focus on the Scandinavian market. Towards the end of the project we will attend industrial fairs, demonstrate prototypes, and produce press-releases.
IN-JET	The BEMO-COFRA project will provide valuable new products and services for IN-JET. In Scandinavia, IN-JET and CNET joint service providers for several of IoT services and smart-home applications related to private users. The results of the BEMO-COFRA project will strongly expand the applicability of our existing technologies and allow us to expand into professional users in the manufacturing environment with concrete products. IN-JET intends to operate a general service platform for measurement and optimisation of energy usage for small manufacturing companies. Clients are able to interface their backend enterprise systems with the physical world with wireless network technologies. IN-JET and CNET will jointly offer the platform as SaaS (Software as a Service) together with consultancy and development services. In the first step, two markets will be targeted for exploitation; Energy control in industrial processes and optimisation of the manufacturing of electronic equipment. CNET has developed workflow interoperability solutions and, which can be targeted the rising energy control and smart metering market. IN-JET originates from the electronics manufacturing sector and is planning re-entry into that market. IN-JET is in contact with a large number of manufacturing enterprises in Denmark and we will exploit BEMO-COFRA software through these contacts and penetrating existing sales channels in partnerships with consulting engineering companies.
ISMB	ISMB exploitation objectives are: - to leverage on the competence acquired into the project to improve the effectiveness of relevant technologies transfer services - to propose innovative technology solutions or new R&D projects to its industrial partners. - to use the competences created in the project for post-graduate students training and projects (higher education) - to use dissemination activities to promote ISMB research activities at an international level, possibly allowing to widen ISMB network of partners. - to use competences acquired during the project to identify new applied research directions in the manufacturing domain (or in other relevant domains). - to make process innovation. The exploitation could mainly relate the manufacturing market segment but would include also home/building automation and energy. The target countries relate to both Italy as well as other European countries.
VTT	Licensing and industrial cooperation.
COMAU	COMAU key objective is to improve its image of an innovative and high technology company in the automotive field, consequently widen its market share and the participation in the upcoming new investments for production plants and efficiency improvement plans in the segment. Being able to implement a practical industrial test bed for the BEMO-COFRA project COMAU

	will have conditions to implement the project findings and outcomes in the new Body Shop solutions for auto manufacturing markets in Brazil and globally. The execution of the project will also provide COMAU Brazil personnel involved in the technical activities with a more robust knowledge on the monitoring and control systems used in industrial applications.
UFPE	Proposing new research projects with other industries for expand our experience in applied WSAN's. We would like to offer low cost frequency scanner hardware. Small companies and single users would be able to have access to it.
UFAM	Licensing and industrial cooperation.
IVISION	Main objective is to exploit the wireless camera which can work as wireless sensors in the markets that Invent Vision already works with.

References

(BEMO-COFRA,2012)   D8.1 Report on the business strategies and exploitation plan