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FINAL REPORT ON NEW CLUSTER SERVICES TO BE DEVELOPED FOR SMES AND FACILITIES

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1 Introduction

Work packages WP2 and WP3 made available an inventory and a geographical map of Life Science infrastructures and SMEs in the regions or countries of the OASIS partners. SMEs' and end users' needs in terms of research infrastructures and reported drawbacks regarding collaborative projects were analyzed as well. WP4 inventory activities (deliverable D 4.1) allowed the consortium to profile the OASIS partners and give an overview of clusters' activity, service offer and strategy (deliverable D 4.2) in the framework of the regional/national research and innovation strategies for smart specialization (RIS3). Finally, the deliverable D 4.3 carried out an in-depth analysis of the business models implemented by the bio-facilities located in the environment of the clusters. Based on the results of these three work packages, the deliverable D 4.4 outlined a preliminary service model to be developed by clusters for SMEs and facilities intended to match offer with need. Finally, the workshops organized in the framework of the WP5 gave the opportunity to test and validate the quality of the proposed services.

Based on the second period OASIS activities, in the present report we analyze the improvements in the services delineated in the interim report (D 4.4) and propose further services in order to refine the service model design. In the following deliverable (D 4.6) we will complement this analysis by joining a business model with the aim to make sustainable the services and tools developed in the project.

2 Improving first period services and testing new ideas

In deliverable D 4.4, for each critical aspect pointed out by the interviewed companies and end users and on the basis of existing initiatives and activities, we proposed one or more supporting services. To structure and formalize the cluster service model, in the current deliverable we group the services there mentioned in three main categories, each representing a “kind of service”, namely support for Research, Development and Innovation (RDI) projects, Networking/Mediation, Services to improve infrastructures' accessibility and SMEs' visibility. We also recall the obstacles the different services help to overcome. Then, we report on the updates of the three kinds of services in each cluster and the whole consortium with respect to the first OASIS period.

2.1 Support for RDI projects

Almost all cluster already provide their members with support for national and European collaborative projects set-up and follow-up via a more or less varied and well-structured service offer and a different involvement degree in the various phases of the project progress (search for partners, funding opportunities, proposal, juridical framework, administrative management, coordination, work plan follow-up). In the framework of the service model proposed by OASIS the category “Support for RDI projects” should include the whole range of these services.

These services help to overcome the barriers and drawbacks in collaboration between companies and laboratories pointed out in the deliverable D 4.4, such as bureaucratic procedures implying heavy and time-consuming administrative tasks and need of a dedicated staff usually insufficient, lacking respect

for project initial objectives due to different priorities of researchers and industry (innovation aims versus fast product marketing) and confidentiality and intellectual property management.

Support for RDI projects is one of Optitec's core activities. During the OASIS second period this cluster reorganized its service offer and proposed a project dedicated section by describing the included services, defining their implementation methodology, identifying target clients and business model. The support scheme consists in the following actions:

- Project idea assessment via the analysis of R&D potential, originality with respect to other already financed projects, economic viability and business impact of the products issued from the project;
- Identification of relevant funding programmes by the study of national/European open calls resulting in the production of a report;
- Consortium building by profiling strengths and weaknesses of the potential partners; Main selection criteria are: partners' skills, funding eligibility, business related compatibility in terms of IP agreement and distributorship agreement)
- Proposal assessment/pre-review.

Optitec also has skills to provide support for project realization such as coordination and administrative management, work plan follow-up, guidance for reporting, and exploitation and dissemination of project results.

Target clients for this service offer are mature SMEs with relatively high financial turnover and medium sized enterprises members of the cluster. Optitec is able to provide a high quality support for RDI projects thanks to its technical expertise in photonics, optics and imaging as well as its consolidated network of experts in juridical and financial affairs and the build-up of an European team whose one member is based in Brussels to coordinate actions towards the different EU desks and facilitate communication with the European Community.

The PhotonicSweden's activity related to RDI collaborative projects is currently limited to support for project setting-up. It has increased in the second OASIS period and has been applied as much in other areas than in the Biophotonics area. Just when the second period of OASIS started, a national project called "Advocacy Platform of the Strategic Innovation Programme Electronics Components and Systems (ECS)" started and a lead by PhotonicSweden on a consulting basis. This platform aims at increasing the participation of Swedish actors in Horizon 2020 projects and at influencing the calls. In the framework of that project, the work groups of PhotonicSweden have been revitalized and a match-making workshop has been organized on November 2015. An interesting side effect of this project is an increased collaboration between photonics and non-photonics actors at the national level which could/should be extended to an international level. For example, targeted end-users are similar for players in photonics or in embedded systems of micro- nano-electronics, and technical solutions are in many cases complementary.

Moreover, Acreo Swedish ICT, where is hosting PhotonicSweden, asked for help to enlarge the service offer regarding collaborative project although it will take some time before a contract for additional service will be set up.

Support actions for national and European collaborative projects went on in the second OASIS period for OpTecBB members. These mainly consist in connecting R&D facilities and companies and are

either triggered from direct inquiries of members/partners or through workshops and the event series "members present themselves" in the Berlin Brandenburg area. Concerning setting up new project the cluster is providing its members with information on funding schemes and in the framework of the project PHOENIX (supporting strategic R&D collaborations between Polish and Berlin based companies and research based institutions) OpTecBB is organizing workshops in preparation of bilateral technology funding calls in order to set-up and foster consortia.

SECPhO is preparing technical reviews (detailed in section 2.3) to supply lacking written information about the status of photonics in Spain in terms of business and R&D. The cluster will use and refer to these reports when preparing proposals for the national funding programme concerning innovation projects run by cluster with their members and other clusters.

The actions related to RDI projects carried out from Swansea during the second period focused on the dissemination of relevant information about H2020 calls and support on preparation of National Bid (EPSRC) and H2020 (ICT20) on Cancer Surgery and diagnostics as well as support of local bid for Healthcare applications of semiconductors.

Optotoscana prepared, as a partner, two H2020 proposals, supporting the companies that had difficulty writing the documents and filling in the templates.

2.2 Networking/mediation

Networking represents the core activity for almost all OASIS partners.

Main actions are the organization of workshops and meetings to liaise between companies, researchers and end users, the collaboration and the stakeholder connection with "translators" from industry to academics and clinicians (such as technology transfer managers or experts for go to market consultancy) and the improvement of the contact Database (available on the OASIS website) to search for partners, equipment, clients. These activities help to overcome the communication issues between technology providers and end users, especially in the medical sector (D 4.4).

Workshops

During the second OASIS period partner clusters improved and increased networking activities both at European and national/regional level. Based on first period workshops' feedback and activity review, the consortium worked to maximize the effectiveness of European workshops and to be more proactive in creating partnerships and consortia in the Biophotonics field, as well as, on a local scale to increase and optimize the organization of meetings and working groups.

Most of the OASIS workshop took place between November 2015 and May 2016. The second period events were better structured and included new sessions, namely an H2020 informative session, a match-making session and exhibition sessions taking place during coffee and lunch breaks. The aim of the informative sessions was to present EU funding opportunities. This action was tested and refined at the Workshops in Aix-en-Provence, Amsterdam, Cardiff and Uppsala and will be therefore proposed by OASIS clusters as a new service which is detailed in Section 3. A match-making session was organized during the Workshop in Uppsala to optimize exchange between participants and search for partners. The format used for the match making session, i.e. round tables composed by eight different stakeholders (researchers, companies, end users) and cluster members leading the discussion was successful in matching need with offer. During the Swedish workshop, participating companies had also the opportunity to exhibit their products and dissemination material (brochures, roll-ups,

posters). Exhibition session was tested for the first time at the Workshops in Florence and then in Aix-en-Provence. The latter was organized in parallel to the international meeting Optitec Event organized by the cluster Optitec. (addressing photonics and imaging technologies and their industrial applications) and companies could take advantage of the showroom area dedicated to innovative products. These exhibitions aimed to increase the visibility of the participating SMEs. The long pitch session which took place in Amsterdam represents another successful action to promote participating companies. For this workshop, organized by Photonics Netherlands, the choice of the programme appeared to be an important success factor: just one Photonics technology and one important application area resulting in all participants speaking ‘the same language’ in the entire value chain, from R&D up to end users.

In the second period the OASIS consortium also experimented a new workshop format targeting end-users. Such events help to bridge the gap between the development of state of the art technology and its underexploited potential in the applicable sectors. The first step is to improve the awareness of the end-users' need and OASIS clusters may play a role thanks to the first period inventory activity. Therefore, the last workshop, organized by PhotonicSweden in collaboration with Public Private Partnership Photonics21, had a particular focus on applications of photonics technology for end-users in the fields of agriculture, veterinary and ecology. It was longer and larger than all previous ones and its success showed that such a format seems to be very suitable for most players involved.

After each second period workshop the consortium asked participants for feedback on the event via an online questionnaire. The questionnaire aim was to quantify and evaluate the added value of the networking activities (number of new contacts, number and type of resulting collaborations such as working groups, collaborative R&D projects, equipment pooling/rental, technology/product testing) and to improve the knowledge of participants' needs (current and expected in the next five years). The questionnaire helped the consortium to propose relevant new services to be integrated in the current service offer in order to better accompany their members.

OASIS actions had an impact on the networking activities of partners at local level in their regions and countries. PhotonicSweden reported some increase of the activity level due to the OASIS workshop in Sweden. This event confirmed the utility of organizing end-user workshops. In the field of medicine and health, PhotonicSweden is discussing the opportunity to organize a workshop involving 3 of the 16 Swedish Strategic Innovation Programmes to mix three necessary levels in medical technical innovation: end-users, integrators and technology providers. Such an event will hopefully occur soon.

SECPhO is improving the organization of cross-sectorial innovation workshops with end users (see D 4.4) by writing preparatory short reports about photonics solutions and products provided by Spanish R&D and business environment for the specific market concerned. The Spanish brochure published in the second OASIS period may be an useful information source and/or a reference for these reports.

Photonics Bretagne continued and included in its action plan (until 2020) networking activities aiming to highlight the potential of photonics in the applicable sectors via the organization, in collaboration with industrial members, of “lunch debates” and half day meetings involving laboratories and SMEs, the participation in regional and national and international business conventions, meetings and exhibitions for several applicable sectors (Ocean BtoB, CFIA, Gen2Bio Industry Paris, Eurosatory) and the organization of Technology Days (JTech) focusing on car industry and Agri-food. Following

these events the cluster produced and disseminate related reports showcasing Breton technologies. Moreover, Photonics Bretagne is discussing about the creation of a Biophotonics showroom **before the end of H2020**.

Optoscana participated to a local regional meeting ("Horizon 2020: Nuova programmazione 2016-2017 e supporto alle imprese toscane", on the 11th December 2015 in Florence) to spread the innovation support actions for SMEs. The workshop was organized by Tuscany Region and IRPET (regional agency for economy development) and EEN and APRE agency were hosted. The result of this participation was the involvement of one startup (Probiomedica) to the Amsterdam workshop, creating new contacts.

Translators

As pointed out in the deliverable 4.4 "Translators" are key figures to intermediate between companies, researchers, end users and successfully transfer and implement technology. They discuss with the different stakeholders, evaluate technology requests, establish synergies and activate relevant contacts.

OASIS clusters have to some extent a connection with translators. Optitec regularly collaborates with a well-structured expert network from industry and Academia. For PhotonicSweden the connection is mostly resulting from direct contacts and it doesn't have an organized way of connecting to translators. Optoscana tested an innovation transfer training experiment reported in D 4.4. Swansea University is proposing a support model for SMEs and facilities where academics play the role of scientific advisors. Thanks to their technical skills, they are able to filter the offer for a specific request and find the best solution, partner or supplier in their field of expertise. Based on the OASIS results (British brochure and database) Swansea will discuss with National Network (KTN) and local and European business support organizations (Business Wales, EEN) a possible method to improve the regional support in Photonics for Healthcare. The model relies on the interplay of academics, national clusters, National and EU organizations that, via their complementary skills, can guarantee at the same time the understanding of technical and business issues as well the network needed for an efficient support. An improved scheme of such model, on a consortium scale, will be proposed in Section 3.

Database

The database made available on the OASIS website is an essential tool to establish contacts, search for partner, match offer with need and its set-up was one of the services proposed in the first period. During the second period the consortium worked to exploit and improve the database. Optitec included the access to the OASIS database in its service offer and plans to integrate it in the internal infrastructure used for member/project follow-up, contacts, networking activities. OpTecBB's website already enable visitors to link the OASIS database and the possibility of including it directly in the section dedicated to the networking services is considered. Swansea plan to improve the database by the next year including new local contacts. The consortium prepared a google form to extend the database to Biophotonics actors from other regions and countries in Europe. Additional future improvements have been discussed such as the link to success stories and the creation of a database section dedicated to clusters and their service offer. Database update and optimization is included in the OASIS exploitation plan.

Generally speaking, second period networking activities resulted in new contacts, collaborations and projects involving SMEs, laboratories and end users from different OASIS clusters that are detailed in the deliverables 3.4 and 5.4.

2.3 Services to improve infrastructures' accessibility and companies' visibility

In the second period the OASIS consortium was proactive in improving infrastructures' and equipment's accessibility, increasing facilities' and SMEs' visibility and promoting their products and solutions. This involvement consisted in improving facility management in terms of access policy and pricing strategy, facilitating the access to pre-clinical and clinical trials, producing dissemination material, fostering R&D collaborative projects relying on facilities (this may be a way to fund and train technical staff), orienting SMEs towards best-suited facilities via the infrastructure database. Such services may help to overcome the barriers to a sustainable development of Life Science infrastructures pointed out by WP2 and answer the SMEs' needs reported by WP3, namely the lack of a customer-oriented approach by facilities, the heavy and time-consuming regulatory aspects especially in the health sector, the gap in innovation value chain, the shortage of technical staff.

Optitec and Photonics Bretagne continued and improved their actions aiming to structure and strengthen Photonics and Optics, to increase the visibility of the related technological offer in their regions and to foster the emergence of projects involving local facilities. These clusters work on two-fold actions: communication services and facility management.

The Photonics Bretagne's action plan (2015-2020) includes the participation in events at regional (round tables, workshops about innovation) national and international level (conferences and Photonics exhibitions such as Optro, Enova, Photonics West, OFS, lobbying via the involvement in national (CNOP), regional (RBI) and European (Photonics21) committees and working groups, the production of communication media (website, brochures, press releases, newsletters) to promote Breton Photonics and PERFOS facility. This R&D platform (with an expertise in Microstructured Optical Fibers, more detail can be found in the OASIS database: <http://www.fp7-oasis.eu/Database-Access/Labs-Facilities/PERFOS>) has no legal entity and is part of the cluster who takes charge of its administrative and financial management as well as of the service offer (tailor-made research, consulting and component supplies). Concerning the other regional infrastructures, Photonics Bretagne observed slight progress in the second period and concluded that these facilities should adopt a more customer oriented approach and invest into business development. This effort is being reinforced for example by the facility Biogenouest who is setting-up a commercial strategy and marketing resources to promote its offer with the help of regional organizations (BIOSIT). Clusters may also play an important role.

Optitec is involved to a different extent in the activities of the regional facilities in partnership with academic and industrial actors. This cluster proposes to their members a privileged access to the facility OLISE (imaging systems characterization in visible and infrared) whose manages communication and marketing. The adaptive optics platform PEMOA (included in the OASIS database: <http://www.fp7-oasis.eu/Database-Access/Labs-Facilities/Plateforme-Europeenne-Mutualisee-d-Optique-Adaptative>) became operational in 2015. It aims to speed-up technology transfer from research to industry, show the adaptive optics potential for industrial and medical applications, contribute to the commercial development of existing products and to develop new products. It is a collaboration between Optitec, two research institutes and five industrial partners.

Companies' involvement helps to increase facility visibility and relay information. Optitec is in charge of management, activity coordination, logistics, communication, access policy, marketing and promotion (via the production of dissemination material) and pricing strategy, while technical staff is provided by academic partners. The cluster structured the services offer proposing equipment rental for medical applications, tailor-made research and training for students, researchers, companies. PEMOA's activities reinforce the expertise in adaptive optics at regional and national level, strengthen the collaboration with hospitals and help to answer the need of skilled technical staff. Such facility management model will be proposed as a new service in section 3.

OASIS clusters continued and increased their actions to make access to pre-clinical and clinical trials easier and faster for SMEs both by connecting companies with research centers, universities and private organizations providing such a service and by proving support thanks to their network of experts in regulatory affairs, certification and normalization procedures.

After the Workshop in Aix-en-Provence two potential collaborations (reported in D 3.4) came out with the clusters' support between the medical imaging center which hosted the event and an Italian company member of Optoscana, as well as between a doctor from the Marseille's hospital and two research centers from Optoscana et SECPhO.

The provision of equipment (adaptive optics retinal camera) by PEMOA has allowed the Marseille' hospital (la Timone) to perform ophthalmology clinical trials.

Although OpTecBB is not able to provide direct consulting for pre-clinical and clinical trials, it can connect Hospitals and SMEs thanks to strong cluster connections with the Charité and Elisabeth Klinik and big actors in the biomedical area (Carl Zeiss Meditec) as well as with small companies with experience in certification. It is also possible to establish connections with Health Capital Cluster (BioTec, MedTec, Pharma), Imaging Network, Diagnostic Net.

Thanks to the inventory of Life Science facilities, PhotonicSweden can now better help SMEs to contact experts in the different Biophotonics fields to access adequate organizations to perform pre-clinical trials.

Swansea established contacts with Bristol Clinical Trial to evaluate whether it is possible to replace not photonics based technology with laser technology. The cluster is going to this institute on behalf of a German company to evaluate clinical trials from a technical point of view with the aim of improving a specific product. Moreover, in the OASIS framework, Swansea has recently set-up a new laboratory to test laser light sources for surgery and other medical applications. The idea is to first perform a technical study to define the best parameters for products already in a pre-market phase and then let companies go further to clinical trials.

Photonics Bretagne pointed out that in the framework of clinical trials accessibility a good strategy may be to establish connections between Photonics clusters and Health clusters (for example in Brittany Photonics Bretagne and ID2 Santé).

In the second period OASIS clusters carried out actions to improve at the same time facilities' accessibility and SMEs' visibility. A good example may be the following service tested by Optoscana. A local SME (IVTech which realizes innovative cell culture systems to refine in-vitro models) contacted the cluster asking help to promote the device they are producing. After a visit of the laboratories of the Institute of Applied Physics in Florence and a presentation of the OASIS project, Optoscana proposed them to use the lab and conference facilities to organize a workshop which took place on the 23-24 July 2015. The two day workshop was organized as a presentation of the product and a demonstration in the labs to train on its use the participants (31 % from pharmaceutical

companies, 38% from universities, 31% from research laboratories such as CNR). As a partial reimbursement of the hosting activities, a free registration of one IFAC CNR researcher was offered. The participants' feedback was positive, especially concerning the practical session. The company's expectations (spread know-how and find new collaborations) were fulfilled, the collaboration with IFAC enabled them to optimize their product and they plan to organize further workshops. The event increased as well the visibility of the research institute which acted as an incubator and provided equipment. Such a service, namely to find the suitable location in terms of infrastructures where a company can showcase its products and set-up a demonstration course will be proposed by the clusters as a new service.

Most of the OASIS brochures (French, Spanish, Dutch and British brochures) were produced in the second period. They provide information about the business and R&D environment in the field of Life Sciences within a specific area (cluster region/country) and are a marketing tool to enhance the visibility of both facilities/equipment and companies by increasing their opportunities of being contacted for new collaborations and business.

Following from the work on OASIS brochures, SECPhO is preparing technology reports, reports related to specific markets, booklets, flyers and other communication material to increase the visibility of its members. A good example is a recent report on SECPhO's members and their technological offer to hospitals and various medical issues. SECPhO plans to prepare similar booklets for other applicable sectors in the future.

Regarding new communication services, PhotonicSweden have got the inspiration of the OASIS brochure as well as of the OASIS video. They believe that their members could be interested in making a video about Swedish Photonics, Biophotonics or optical communication industry. Probably the service of setting up such videos could be co-financed by the companies involved. The OASIS brochure about the Swedish Biophotonics has been very much appreciated and a source of astonishment for many (to discover that there is so much to be found in Sweden in that field). Such brochures could obviously be made for other fields and co-financed by the involved companies.

Another service to support and increase companies' visibility by faster products validation and dissemination will be tested as a result of the workshop in Cardiff. The participating company Keopsys will be involved in the H2020 Network MP1401 on fiber lasers proving a source for testing in the framework of cancer surgery. A large committee of experts, including representatives of Industries, Clusters, Universities, will validate company's product in the form of scientific report. This will help the SME to gain customer confidence their products are suitable for the purpose and eventually to demonstrate they are equivalent to more expensive existing tools. This is especially relevant to the medical sector where end users are not expert and rarely trust new products without significant peer reviewed evidence. In addition to a more reliable and faster product validation, the company will be able to access an exhaustive list of potential end-users and take advantage from the network dissemination tools. Following the test phase such a service may be proposed as a new service.

3 Further services thanks to the second period activities

Thanks to the second period activities and questionnaire the consortium was able to propose additional services to be developed for SMEs and facilities with respect to the first period. The new

questionnaire, whose results are reported in the deliverable 3.5, aimed to get feedback from companies, research centers and end users who participated to the OASIS workshops and to enlarge and update the results of inventory activities carried out by WP2 and WP3 by gathering further information about the needs also in terms of strategy and business for the next five years.

As described in the previous section, some new ideas for services were validated or set-up during the second period (for example end user workshops, company workshops organized in clusters' facilities and premises, support for European projects or a new scheme for faster product validation). Further hints arise from services which are already implemented in a few clusters (facility management, business support). Most of the services proposed in this section can be included in the three types of service already described (support for RDI projects, Networking/Mediation, Services to improve infrastructures' accessibility and companies' visibility) other result in new categories. The outcome is a service model structured in five main categories and shown in Figure 1.

3.1 Support for European project set-up and follow-up

A specific support to facilitate access to European funding in the framework of H2020 and to set-up and follow-up projects was designed and tested in the second OASIS period. This new service enriches the category "Support for RDI projects".

An H2020 informative session was included in the workshop programme. Its aim was to present EU funding opportunities and highlight calls for proposal relevant to participants' activities. Informative presentations in Aix-en-Provence, Amsterdam and Cardiff addressed Biophotonics calls for proposals scheduled for April 2016 and the session in Uppsala dealt with "Precision Farming" calls (potentially interesting for participating end users of photonics technology in the field of Agriculture) and the bottom-up "SME Instrument" targeting small and medium-sized enterprises. Following these informative presentations a brainstorming session with the cluster speaker was organized by grouping participants according to different topics where they were interested in submitting proposals. This discussion allowed participants to express their interest and need, get additional technical information about related calls and establish new contacts with potential partners to set-up new consortia. A follow-up e-mail was sent after the workshop to interested participants (covering a big part of the value chain: SMEs, universities, research centers, big multinational groups and coming from different countries) to make the presentation available, establish connections by mailing list and give suggestions for the features of the potential consortia. The OASIS consortium also asked to be informed about the outcomes to evaluate the impact of its actions. To maximize the exchange between participants interested in collaborative project the workshop in Uppsala hosted also a matchmaking session between different stakeholders (companies, academics, end users, clusters as mediator).

The consortium is considering the possibility of providing a packaged support service covering all the phases of realization of European projects: from assessment of project topic relevance to the targeted call, of its R&D potential and economic feasibility (in case final goal is a product), to the identification of suited funds, to search for partners and consortium member selection, to proposal preparation and submission. Given their experience of managing collaborative projects, if the project is selected for funding by EC, clusters are also able to provide project follow-up services such as

project leading, activity coordination, risk management, administration and guidance during the reporting phases.

3.2 Cluster translators

In the previous section we mentioned cluster connection with external experts acting as translators between technology providers, researchers and end users as well as local attempts (Swansea) to benefit from knowhow of internal scientific advisors. As further step, OASIS partners should train their own translators with double profile possessing technical and business skills and set up an infrastructure to exchange expertise within the consortium.

Staff training in technology transfer management is facilitated by the time clusters are used to spend with companies and end users (mainly hospitals) and by the technical expertise some staff members have in addition to management or business skills.

Trained cluster staff should not only facilitate interactions between companies and facilities, but also accompany enterprises over the whole path, from identification of the need and of the best technical solution and suitable facility, to research and testing up to production. They should actively participate in meetings, evaluate time and market constraints and stimulate research facilities to meet market needs. This new service will be included in the service category “Networking” (see Figure 1).

As recommended by the previous European project Sharebiotech, cluster should, at a larger extent, support the formation of a “biophotonics business manager” figure by improving the current education and training offer. For example translators could be picked out among PhD students who spend a part of their thesis in one company and part in a research institute to develop new products.

3.3 Facility management

Facility management is a new service category proposed by clusters (see Figure 1). It fosters the development of R&D facilities able to bring together the local ecosystem working on the technology concerned (companies, research institutes, universities, hospitals, clusters). This contributes to add value to the territory, reduce the gap in the innovation value chain and reinforce the expertise in (Bio)photonics at regional or national level.

Models for this service may be the French facilities PEMOA and PERFOS described in Section 2. The regional clusters deal with administrative and financial management, coordinate the activities, design the service offer including access policy and pricing strategy as well as marketing and promotion strategy.

Clusters are aware of the importance of marketing and communication activities for overall facility sustainability. Based on to their deep company knowledge and skills in business support, they may help facilities to develop a customer oriented approach and to meet market demands. Moreover they may supply for the lack of time and experience in administration which researchers and academics usually have and guarantee a quality management.

Another advantage arising from facility management by clusters is that, thanks to their links with both companies and facilities, training offer can be made wider by organizing tailored trainings for researchers, students and companies. This may help to reduce the shortage of skilled technical staff, to answer educational needs in biotechnology and to open the access for SMEs to trainings often restricted to academics.

Thanks to cluster connections with end users and to their network, the facility management model also fosters collaboration with hospitals and might promote the creation of a facility network enhancing mutual R&D cooperation at all levels (staff/equipment).

3.4 Business support

Second period questionnaire (results are reported in D 3.5) showed that some companies need support to develop a business strategy. To meet this need the consortium designed a new service category of business support (see Figure 1).

Currently most clusters don't propose this type of service but make connection between companies and experts. As an example OpTecBB is assisting a French company which wants to expand its business to the German capital region by founding a new company. OpTecBB has a tight link to the business studies of the Freie Universität Berlin and was able to partner scientists from this start-up with actors having a background in economics. Simultaneously, the portfolio of these new companies is presented to other members of the cluster. OptecBB considers that connecting these young companies with the existing network and adapting services to their needs can help to keep them afloat during the first usually difficult 5 years and would like actively expand its services to start-up scene.

Other clusters carry out actions relating to business intelligence and business monitoring. The Photonics Bretagne's action plan (2015-2020) includes the management of a business intelligence platform for SMEs to improve their knowledge of competitive environment (including tailor-made monitoring for a single company). Furthermore, their members receive a monthly bulletin including reports on targeted monitoring issued from the intelligence platform, patents studies and calls for technology skills in the field of Defense & Security, Industry & Energy, Patents. This cluster also plans to publish a study report on Breton Photonics sector in terms of job opportunities, markets, collaborative projects.

Swansea is collaborating with a Spanish company (see D 3.4) on a market survey for fiber laser manufacturers. The idea is to send a questionnaire to potential customers in order to get a valuable insight on their needs. This will help companies working in this field to understand present and future market needs and therefore to tailor performance of their products. Moreover, the distribution of the results via the large cluster network allows companies to reach a large number of end users.

Optitec proposes a more structured business support consisting of events, joint actions and tailored support. Events include "Information-monitoring days" presenting a market research (market and product monitoring, end users' needs) and getting feedback from participants, "Thematic days" with round tables addressing a specific market and B2B meetings between big groups/medium sized enterprises and start-ups. Joint actions propose trainings in financial analysis and customised support to help the development of start-ups and SMEs launched onto the market. Finally, a large fraction of

the current consortium submitted a proposal for a new CSA aiming at further developing the OASIS actions among others through the design and testing of Go-to-market services.

The business support proposed by the OASIS consortium aims to facilitate the business development of SMEs via the design of a business strategy on a 3 to 5 years time scale. It relies on a financial analysis which takes into account company's offer, its economic objectives, R&D programme, collaborations, production model as well as the market concerned and its evolution. The outcome should be the definition of the company's action and business plan. This service category can also include other customised services depending on the company needs, such as support to commercialise a product issued from an R&D project and support to access new markets.

3.5 Inter-cluster services

The consortium also plans to provide inter-cluster services. The basic idea is that, in case a cluster doesn't implement a specific service, it can rely on partners. As a few examples, the cluster may have privileged access to facilities in the partners' environment to redirect unfulfilled request for technology/product testing or clinical trials or partners may share their local expert and translator network.

Inter-cluster services may be better-structured. Clusters foresee the possibility to organise a high-level event by pooling funds and expertise in order to guarantee a European dimension of the event. While the local cluster provides a turnkey solution in terms of organisation and logistics against a fixed fee, the partners are entitled to commercialise the event in their environment, making the service from a cluster available outside the local area.

The exploitation plan of the OASIS results considers the creation of a European Biophotonics Platform described in detail in the deliverable D 6.3. This platform can be a suitable infrastructure to accelerate and facilitate the access to the services described in the present report. It will be especially relevant to inter-cluster services due to the search methodology (cluster as local contact points in connection with partners to rapidly redirect the request if necessary), the fast exchange between the clusters and the creation of a transnational network of experts and translators.

4 Conclusions

This report analyzed the improvements in the service offer achieved by each cluster and at consortium level and the ideas for new services tested in the second OASIS period. It enabled us to refine the service model delineated in the first period and based on the analysis of SMEs' and facilities' needs carried out by the work packages WP2 and WP3.

The consortium reorganized and enlarged the service offer thanks to the second period activities and questionnaire. The service model is structured in five main categories, each including several services

as shown in Figure 1. The service model should be ideally adjustable to each cluster to fit with cluster strategy, legal status (academic partners) and business model (see deliverable 4.6). It should also fit with its ecosystem in terms of infrastructures, funding programmes and support schemes already provided for SMEs and facilities in the cluster region or country. In case one cluster doesn't implement a specific service the consortium designed inter-cluster services to fulfill the demand, and exchange information and expertise.

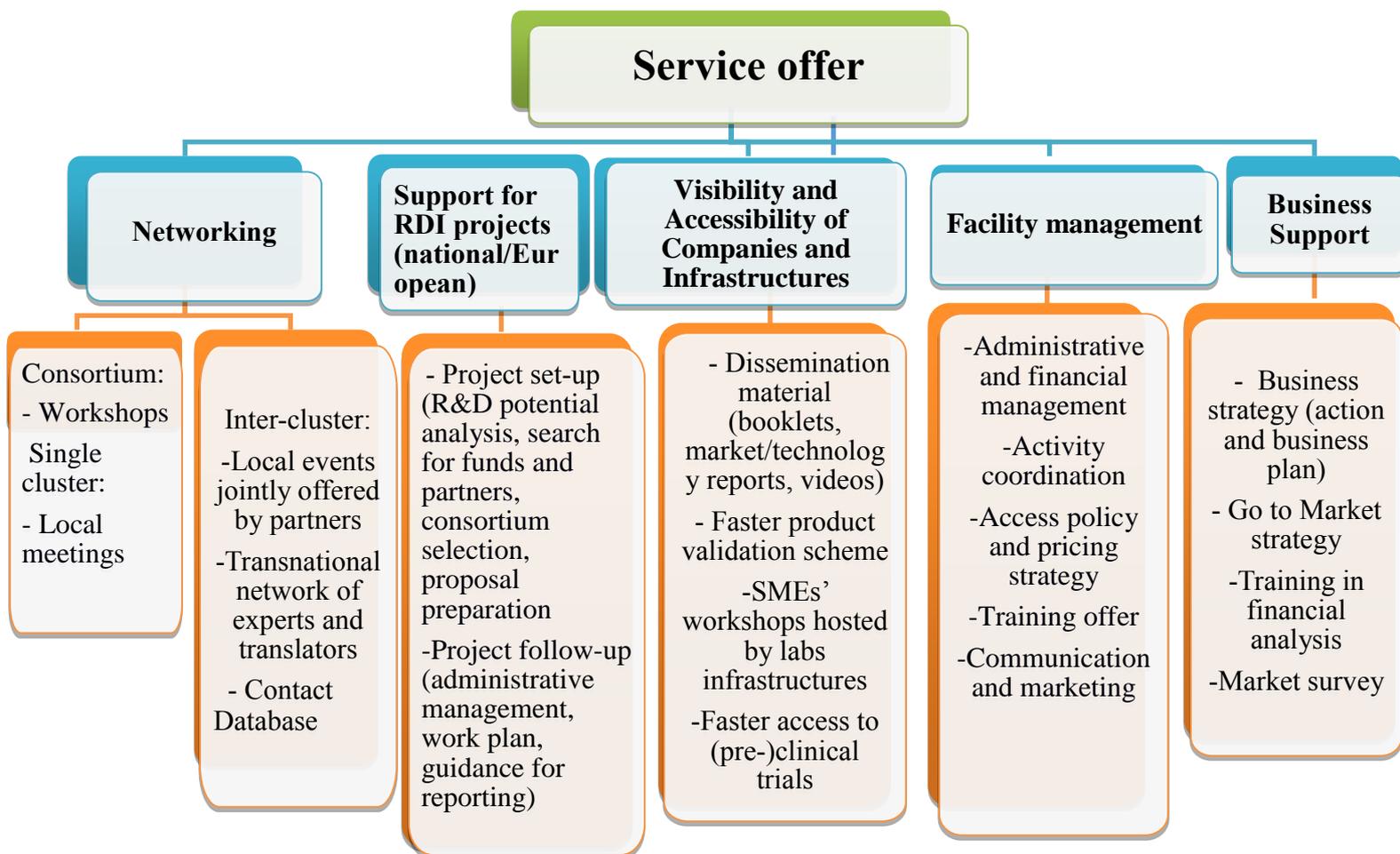


Figure 1: Schematic view of the service model.