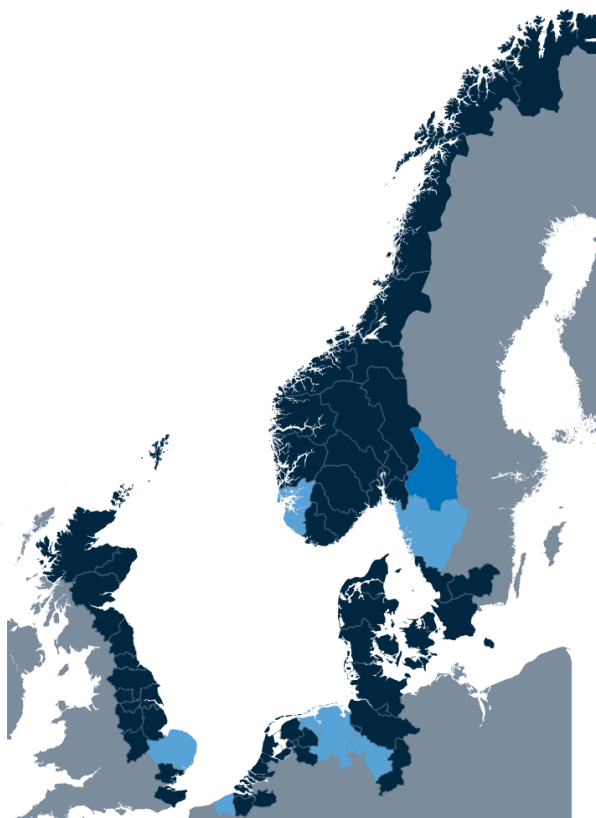


Evaluation Report on E-CLIC model

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1. What is the E-CLIC model?

The overall goals and plans set during the application period of the E-CLIC project (European Collaborative Innovation Centres for broadband media services) under INTERREG IVB were successfully implemented by all individual project partners. Their cooperation within the North Sea Cluster enabled them not only to increase employment and boost economy across the NSR, but also to stimulate innovation by establishing eight new European collaborative innovation centres for broadband media services.

The transnational cooperation between the E-CLIC partners and individual E-CLIC centres turned out to be a successful one, which secured the sustainable stimulation of SMEs on the regional, national and transnational level. The different E-CLIC centres operated as the transnational strength of the project and promoted the co-operation between the different universities, research institutes and SMEs. By deriving experiences from the Living Labs and using the Triple Helix Model the E-CLIC centres developed new broadband services and media products, which were revised from other project partners.

The E-CLIC centres established sustainable structural networks for continuous cross-sectorial and interdisciplinary collaboration in research, development and deployment of innovative broadband media services, so the E-CLIC work could be carried on successfully.

All E-CLIC centres implemented broadband infrastructure on great scale and shifted their focus to the provision of broadband services. The implemented E-CLIC centres had different regional areas of expertise, which involves wide range of knowledge and increases the opportunities to develop innovative broadband services. The development of new services and content for broadband was ensured by the collaboration between research institutions, SMEs and universities.

The E-CLIC centres acted here as a physical and virtual meeting place for talented students, young entrepreneurs, business developers and innovative companies. Talented students and young entrepreneurs were involved in development of new broadband services. On the basis of virtual meetings (Second Life as a tool for virtual team and project meetings) and online lectures at the different E-CLIC centres the knowledge and experience from all project partners were constantly available.

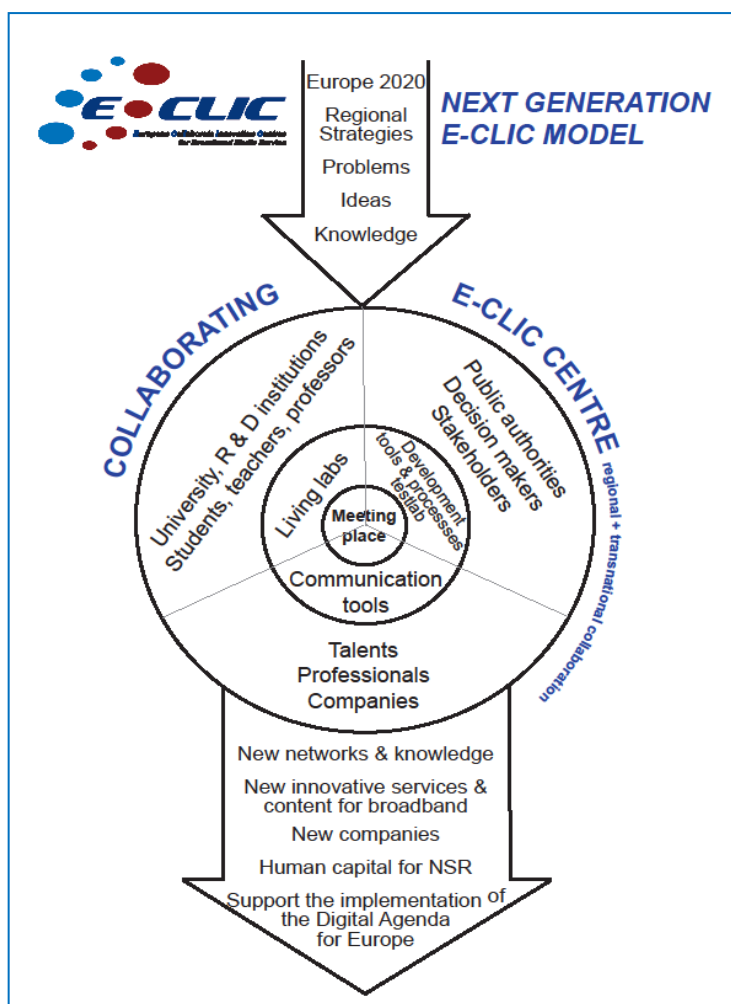
Furthermore physical meetings at regional, national and transnational level stimulated the transnational collaboration between the E-CLIC centres and other partners. Moreover each E-CLIC centre runs independently several innovative and business driven researches as well as development projects by involving private companies (SMEs).

The outcomes were written down in various case studies, prototype services and media productions. Each case study, service prototype and media production was developed by project teams consisting of students, researchers from universities and young entrepreneurs. The last group had also the opportunity to bring in their own ideas on business development so that their planned undertakings could be revised both by the regional teams and other project members.



This created an excellent opportunity for participating students and young entrepreneurs to gain experience by solving real problems in Real-World Environment and to exchange their ideas, with the other E-CLIC centres. This approach was strengthened by the students and employee exchange as a completion of the collaboration on research and development projects. This facilitated projects based on laboratory technology but still focusing on Real-Life-Environments, so that the participants could get an immediate feedback from real users.

In this respect the connected ring of E-CLIC centres corresponds very well to the aim of the programme, namely to make the NSR a better place to work and invest in. The accomplishments of the E-CLIC centres emphasized the project priorities, which is the stimulation of transnational and multidimensional partnerships between business and industry players, SMEs, researchers, universities and the public administration institutes and encouraging them to promote innovation in regard of the objectives resulting from the Lisbon and Gothenburg Agenda. The whole E-CLIC project enabled the creation of favourable environments for SMEs, business development and economic growth based on the development of new or improved products and processes.



Picture 1: Draft of the E-CLIC model ¹

¹ Picture 1 shows the draft of the E-CLIC model at the beginning and the medium stage of the E-CLIC project (this draft was discussed and revised at several project meetings).



The picture above shows the draft of the E-CLIC model at the beginning and the middle stage of the project. It was discussed several times at the meetings of the Project's Steering Committee. This model gives an overview of the transnational approach and the basic future orientation of the E-CLIC centres. New networks and innovative services as well as human potential development and stimulation of business are still highly required. Furthermore with the establishment of sustainable structural networks the continuous cross-sectorial and interdisciplinary collaboration between researchers on development and deployment of innovative broadband services and new media products should be facilitated.

The E-CLIC centres fulfilled a great number of its approaches; still it is important to secure sustainable utilization and the transferability into other European and/or non-European regions as well as to get involved other potential partners (e.g. establishment and development of further collaboration centres).

Before introducing the possible future orientations, we should nevertheless describe, which tools were used to reach the "inner circle" of the E-CLIC centres.

1.1. Collaboration between E-CLIC centres

The collaboration between E-CLIC centres is the most significant part of the whole E-CLIC project. The aim of the transnational collaboration, which was already defined in the project application, is to gain access to high quality education, get assessment and assistance to innovation projects, participate in top projects and facilitate the dissemination of products and industry-orientated services, including establishment of new companies.

The basic components of the E-CLIC project, namely among others the creation of the management program for transnational collaboration was developed within the WP 2, whereas the experience exchange between students, universities, R & D institutions and industry establishments were carried out within the WP 3, 4 and 5.

As already mentioned the transnational collaboration between the E-CLIC centres was conducted by the following methods:

- Involvement of young researchers and student exchange
- Promoting of the individual and public involvement
- Involvement and exchange of teachers as well as young talented people
- Second Life meetings
- Transnational conferences arranged by the E-CLIC partners and general conferences for all partners including students Project meetings hosted by individual partners with the aim to present their current activities.
- Skype meetings between representatives from two or more E-CLIC centres to investigate common interests or coordinate/ plan common work

At two-third of the inner circle of the E-CLIC model, professionals from companies and universities as well as R&D institutions, students and academics were invited to numerous meetings (e.g. Multimania / Kortrijk, CeBIT / Hannover, Entrepreneur Week / Stavanger); the exchange of the personnel was also an integrated part of the project schedule .



The exchange of students and teachers between the following E-CLIC centres: E-CLIC Värmland, E-CLIC Groningen, E-CLIC Kortrijk and E-CLIC Norfolk- has been a very successful one and included various workshops requiring the participation of transnational partners, e.g. teacher from E-CLIC Värmland held workshop at the E-CLIC centre Groningen.

As a follow up, a collaboration project involving students from both partner's institutions, started. The collaboration is designated to enable more staff exchanges between E-CLIC Groningen and E-CLIC Värmland.

At the E-CLIC Wilhelmshaven a teacher from the E-CLIC Värmland gave an online-lecture for interested students. These students were so impressed, that the E-CLIC Wilhelmshaven is planning to organise online-lectures with the other E-CLIC centres as a component of the normal curriculum.

Furthermore E-CLIC Hannover and E-CLIC Rogaland had met and discussed their cooperation at the E-CLIC e-learning project. The delegation from Hannover got an introduction in the application design. Contacts with the Media Lab of the University of Stavanger have been established for a potential collaboration with the University of Applied Science and Arts Hannover.

E-CLIC Rogaland and E-CLIC Norwich have held several meetings and developed common projects. One of the projects is the media archiving system developed in UK and implemented at the media archives of the "Misjonshøgskolen" in Stavanger, being in possession of the media contents from 100 years of worldwide missionary work.

These are only few examples of the collaboration between the E-CLIC centres. The other third of the inner circle, the stakeholders, decision makers and public authorities, were involved in the events and physical E-CLIC meetings on regional, national and transnational level.

1.2. Citizen and company involvement in the E-CLIC project

Another important aim of the E-CLIC project was to create links between research bodies, commercial companies (SMEs) and citizens in order to commercialize existing knowledge inspires innovation, develop and integrate new ideas into Real Life. The E-CLIC centres worked as the connecting "instruments" to involve companies and citizens and to gain transnational contacts and private/public partnerships.

During the project run-time the E-CLIC centres organised regional and transnational meetings and events together with companies to present the outcomes of the E-CLIC project, the idea and work of the different E-CLIC centres and to exchange their employees.

Different case studies, prototypes and media productions under the involvement of companies were developed at the project.

Examples for these works are: "Wireless city as a large scale test bed for wireless access on wireless networks" (E-CLIC Wilhelmshaven together with E-CLIC Groningen), "Impact of Adjacent Channel Interference on Performance of Multi-Radio Multi-Channel Mesh Networks" (E-CLIC Värmland together with E-CLIC Groningen), "Digitizing and Archiving of





old 16 mm Films" (E-CLIC Rogaland together with E-CLIC Norfolk) and "Health related broadband use of social media" (E-CLIC Hannover).

An open dialogue between E-CLIC centres and the business societies was constantly maintained. For example E-CLIC Hannover took part in co-operation meetings with the media companies Nordcom, step2e and EditShare, which used the technical facilities of the implemented Living Lab in Hannover. Furthermore there were some meetings taking place with engineers, architects and distributors in order to plan the technical infrastructure and acquire the technical environment. The main objectives of the installation are the multifunctional utilization for video conference, tele-teaching and production as well as distribution of IPTV.

More interactive way to get companies involved in the work of E-CLIC centres was the Pitching Competition at EPIC hosted by the E-CLIC in Norfolk. This competition was designed to give talented people from the film production industry an opportunity to gain support for their next studio-based TV project.

Visibility for both the publicity and companies was an essential component of the events held by the E-CLIC centres. Regular marketing has been done by all partners constantly.

In the opening meeting of IKN 2020 (branch of Information- and Communication of Lower Saxony / Germany) Prof. Traub introduced the E-CLIC centre to 200 media experts, politicians and ambassadors of enterprises. The E-CLIC project and E-CLIC Värmland activities have also been presented and disseminated during the business exhibition "Värmlands största affärsresa" organized by the Värmland Chamber of Commerce.

All described examples illustrate the on-going work of the E-CLIC centres. The co-operation finding place at the implemented E-CLIC centres is meant to be a start-up for future on-going collaboration between companies, public services, citizen and universities under the usage of Triple-Helix model. The aim is to gain sustainable development for the regions and to avoid brain drain in rural areas.

2. Lessons Learned and future orientations

The E-CLIC model explains how the individual E-CLIC centres work together and where the synergies can be found. Lessons learned throughout the implementation period of the E-CLIC model and during the transnational cooperation show that the basis model has proved itself and the collaboration between the E-CLIC centres, companies, research institutes and local authorities is progressing, but there is particularly to subsume that the collaboration with people from outside (like politicians) could work better. It was very difficult to involve politicians – as one target group – into the E-CLIC model. Apart from international conferences and meetings, or events, like the official opening of the LivingLab Hannover, the generation of interest at the level of politicians was very difficult.

Other direct target groups, like students, are more enthusiastic about project as it gives them the opportunity to test their own ideas under real-life conditions and to discuss them with transnational partners. Furthermore virtual (e.g. Skype) and physical exchanges and online lectures provided by other E-CLIC centres increased students' interest for the project.



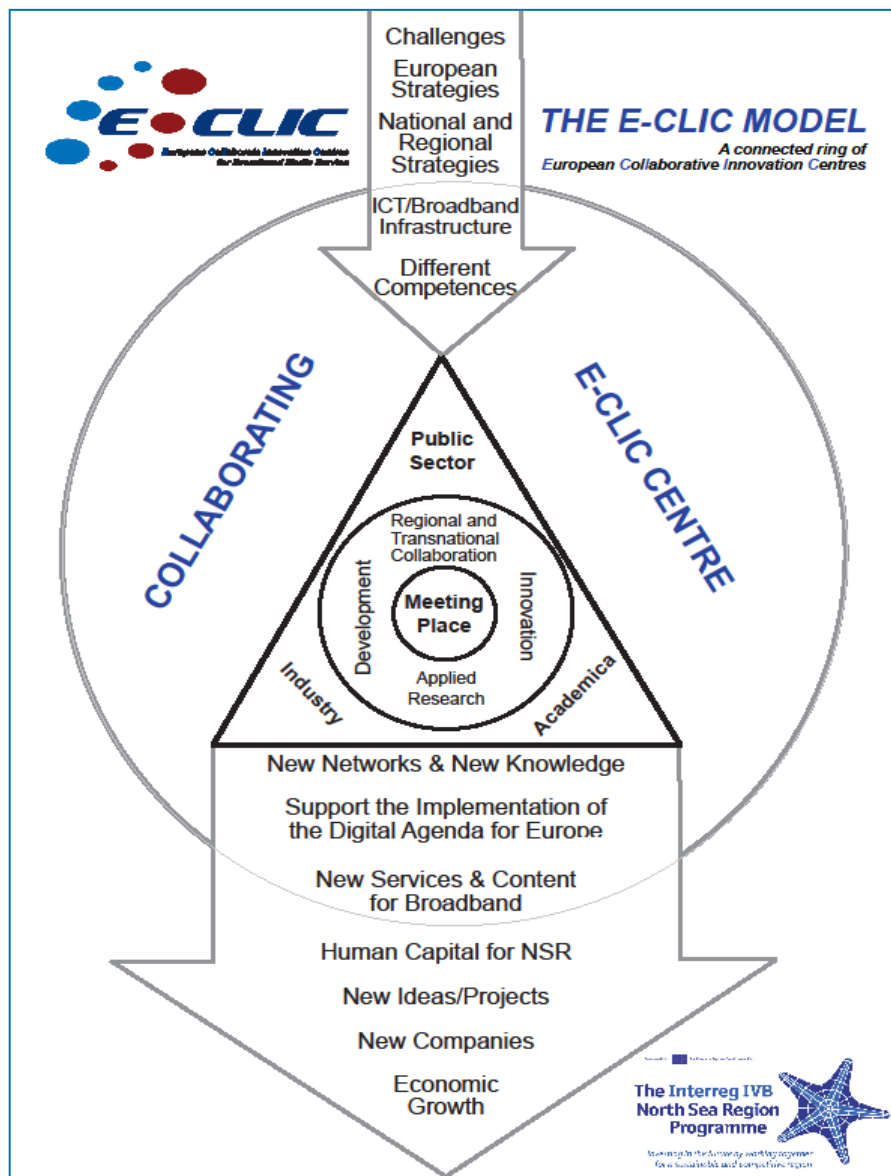
But we still have to involve students as early as possible into the E-CLIC model (and the E-CLIC model in national curricula), so that it becomes an integral part of the individual course.

For this reason, the E-CLIC centres have to attract external groups like politicians, so that the support and interest of national and transnational stakeholders could be win more effectively. Furthermore it is necessary to organize more travel opportunities and invite guests to the meetings and conferences, so that stakeholders from other countries could also discuss their ideas and possible synergies.

It is also very important to attract key companies (larger companies) and try to encourage them to contact and cooperate with students. Ideally companies, which are located in several regions of E-CLIC centres. In this case student exchange could be linked with transnational internships. Possibly these larger companies could sponsor transnational meetings and events, or could facilitate the travelling within the project area.

Moreover we have to find progressive companies to start to open their innovation sources, and to discuss some ideas transnational with the support from students of the E-CLIC centres. So it could be possible to create a win-win-situation because interested students could be potential workforce.

Last but not least to secure the long term results we have to continue with our cooperation – work more together and exchange expertise. This is why we revised the first E-CLIC model and defined the sections academia, public sector and industry as our core groups for the sustained orientation of the E-CLIC centres.



Picture 2: Revision of the new E-CLIC model²

Since the beginning of the E-CLIC in 2008 the project has been a great success. An integral part of this success is due to the high personal involvement of all project members who, in turn, benefit from the E-CLIC centres in various ways. The advantages resulting from the E-CLICs for the different stakeholders of this project shall be described in the following point of the report.

This outline of the benefits from E-CLICs offers a clear-cut view on the individual advantages for all project participants. Nevertheless it addresses particularly the potential project's members, whom this outline can serve as a great help by making decisions. Moreover, despite this individual treatment of each group of stakeholders, it is absolutely essential to

² Picture 2 shows the final new E-CLIC model and the approach for general exploitation at other European areas.



keep in mind that the interrelation of the various stakeholders is the integral element leading to the development of new products and services and enabling the connected ring of E-CLIC centres to function properly. . Thus, the focus within the E-CLICs lies on collaboration –which all project partners can benefit from. The following paragraphs are structured along the different groups of stakeholders as outline in the final E-CLIC-Model (see Picture 2). For each group, the respective benefits of the E-CLICs are highlighted.

2.1. Public sector

Participation on the E-CLIC project also yields substantial benefits for the public sector. Public authorities not only have the opportunity to realize reputational gains, but they can also profit from favorable effects on public finances and the job market as well as serve society as a whole by advancing the development of new products and services able to make a difference in everyday life.

Regarding to the public spending, the authorities are able to deploy public money in a reasonable way by facilitating E-CLICs and their respective R&D projects. Supporting the collaboration between public academic institutions and private companies, those authorities can contribute to the development of new products and services.

Moreover, providing E-CLIC R&D projects with academic knowledge, public institutions are also encouraged to contribute directly to development processes. This public influence on product development processes can be very beneficial to society.

In addition, through the close contact with the private sector, politicians and public authorities can strengthen their bounds to business representatives (for example: the commitment of companies to a specific region or the sponsorship of certain charitable initiatives).

Concerning public earnings, tax authorities can profit from E-CLIC R&D projects through the companies commercializing the final products and services developed within those projects. This commercialization, for example, has a positive effect on the value added tax and the business tax.

Moreover, the commercial exploitation of newly developed products and services may also function as a motor creating employment opportunities in a certain region. This produces enormous opportunity, especially for rural areas with weak infrastructure. Products developed within the E-CLICs and using broad-band technology may not require a strong infrastructural base, but can also be marketed with headquarters located in structurally weak regions. In addition, the establishment of new companies commercializing the products developed in E-CLICs can lead to openings of further companies.



Thus, E-CLICs may spark a favorable development in an industrial zone or even in an entire region. All the mentioned benefits of E-CLICs also yield a positive press for the authorities supporting those centers. Public authorities appear in a favorable light since they support the development of new products and services potentially capable to make a change on everyday life, spend public money wisely and may even earn additional funds through taxes and create new job opportunities boosting the attractiveness of an entire region.

The Benefits for the Public Sector - Summary:

- Reasonable deployment of public funds by the development of new products and services, potentially capable to make a difference in everyday life
- Supporting the development of new beneficial applications extending beyond a single-sided focus on profit maximization
- Close contact with business representatives yielding the opportunity to increase companies' commitment to a specific region
- Commercialization of new products and services generating additional tax receipts
- Commercialization of new products creating new jobs and business opportunities; supporting the development of an industrial zone or even of an entire region – positive effects on the attractiveness of a region
- Products developed within E-CLICs using broad-band technology may not require a strong infrastructural base –attractiveness for structurally weak regions
- Positive press for public authorities for their supporting the E-CLIC R&D projects



2.2 Academica

E-CLICs offer wide array of benefits to the academic world. Students, academics as well as universities in general can profit from the participation in the E-CLIC model. For academic institutions, the mere participation in the overall E-CLIC Project yields a reputational gain, showing that the institutions has access to the enormous possibilities of broad-band technology – with a high degree of real-life applicability of research results.

This applicability of possible results, in turn, can increase the favorable public perception of these institutions by directly showing the contribution of the academic world to everyday products and services. From the academic point of view, new knowledge can be generated especially due to the interdisciplinary nature of E-CLIC combining insights from broad-band technology with the analogue world. Merging different fields of research and accompanying products and services yields a new set of insights as well as the potential for entirely new applications – the overall goal of the E-CLIC project.

Existing academic knowledge can, moreover, be deployed in the R&D projects and thereby academic institutions can make a valuable contribution to the E-CLICs, to young entrepreneurs trying to expand their field of business and through the possible new products and services to the public in general.

Furthermore faculty members serve as an interface between the academic world and the world of business. As the academic institutions in general, they benefit from interdisciplinary projects based on different fields of knowledge and accompanying research in order to strike new paths in the development of entirely new products and services. Faculty members can generate new knowledge which may also boost their own research and personal development. Having close contact to young entrepreneurs and innovative companies – like in E-CLIC - they are at the pulse of business developments and gain valuable insights about upcoming business challenges. This additional perspective ameliorates their research and may open up the possibility for further follow-up projects and the further work at the E-CLIC centres.

At the same time, faculty members can pass on knowledge to young people – a fact which may contribute to the overall self-fulfillment of the academic personnel. Moreover, the academic staff can support talented students and offer them unique practice-orientated experiences. When supporting E-CLIC on a consultative basis, faculty members can, furthermore, increase their overall monetary compensation.

Students mainly profit from the E-CLIC through the personnel experience they gain when participating in the development of new products and services using broad-band technology. They can apply their theoretical knowledge in a real-life context, work together with innovative young professionals and broaden their horizon through interdisciplinary nature of



the challenges encountered on the R&D projects. The practical knowledge gained on those projects may also be helpful in the students' further career and serve as a distinguishing factor in application processes following the academic degree. Companies involved in the E-CLIC projects may even be potential employers for the participating students.

The Benefits for Academia - Summary:

- Reputational gain for academic institutions because of their dealing with opportunities and challenges of broad-band technology, which greatly influences everyday life
- Reputational gain for academic institutions resulting from their research on the development of new real-life products and services
- Generating new knowledge by using the interdisciplinary nature of the E-CLIC model
- Academic gains through the participation on the E-CLIC projects for faculty members
- Increased self-fulfillment for faculty members through passing on practical knowledge to talented students and innovative entrepreneurs and companies
- Unique learning experience for talented students participating in E-CLIC
- E-CLIC as a chance for participating students to boost their personal development
- E-CLIC as an important stage of students' professional careers – especially with regard to application processes following the academic degree

2.2. Industry

The industry – especially SMEs and young entrepreneurs – is a key player, contributor as well as beneficiary of the E-CLIC model. Trying to build upon the opportunities of broadband technology, young and innovative entrepreneurs push the development of innovative products and services to exploit new business opportunities. For them, the participation in the E-CLIC project entails a vast number of advantages.

E-CLICs provide state-of-the-art research and product development with necessary technical infrastructure – a fact particularly relevant for small companies with limited funds. First of all they offer the expertise carried out by academics and ambitious young students. Joining forces with academia tremendously increases the possibility of achieving success in the product development process. Firstly academia adds new perspectives for the process of product development and offers vast pool of knowledge, which companies can use when tackling the interdisciplinary challenges resulting from developing entirely new products and services based on broadband technology.

Secondly, cooperating with academia quickly raises the headcount of talented, well-educated people following the common goal to develop together new successful product – a very helpful fact regarding the numerous obstacles, which the product development processes is



oftentimes faced with. In addition, using E-CLIC projects as a source of product innovation not only allows young entrepreneurs and innovative companies to draw upon the potential of talented students and academic personnel present in the respective E-CLIC, but also offers the opportunity to use the expertise of other E-CLICs in the product development process.

The collaboration of different E-CLICs on certain R&D projects is a very valuable option to augment the product development process in order to obtain truly unique and excellent new products and services competitive on the world-wide market.

Another benefit of the E-CLIC model results from the close contact between innovative companies and talented young students. Working towards the common goal of successful product development, both parties get in touch and can strengthen their bounds throughout the work process. For innovative companies, this collaboration with talented students provides the excellent opportunity to examine high-potential students with the option of a subsequent future employment. The pool of potential new employees is even augmented through the additional possibility of a student exchange among the different E-CLICs and other partners.

Generally, the collaboration of the different E-CLICs provides the opportunity to establish close ties to a vast number of people – both from academia and business. Those contacts cannot only augment the product development process and the pool of future employees, but they can also boost the commercialization of the new products and services through new business contacts even across national boundaries. On top, the unique setup of E-CLIC as a cooperation between the public and the private sector also facilitates the dialogue between public authorities and companies. For private companies, these public-private partnerships may provide them with the opportunity to launch follow-up projects. In addition, by collaborating with public academic institutions, companies do not only benefit from developments in academic research in an indirect way, but they can also exert a certain kind of influence on academic research efforts.

Moreover, the close cooperation with the public sector and particularly with academia in innovative E-CLICs also augments the reputation of companies in the eyes of the general public. Joining forces with public institutions in order to develop new products which are beneficial to everyday life and which may even boost the employment situation in the North Sea region generally yields a positive press.



The Benefits for the Industry - Summary:

- Opportunity to realize product development processes using a state-of-the-art technological infrastructure
- Opportunity to benefit from cutting-edge academic knowledge in product development processes
- Additional support of talented, well-educated people on challenging R&D projects
- Close contact with talented students increasing the chances of a subsequent employment relationship
- Cooperation among E-CLICs elevating product development, business opportunities and sourcing of future employees to a new level
- Cooperation with the public sector on E-CLIC providing for new business opportunities
- Close cooperation with public academic institutions yielding the possibility for companies to exert a certain kind of influence on academic research efforts
- Positive press through the development of new products which are beneficial to everyday life and which may even boost the employment situation in the North Sea Region



3. Conclusion

The E-CLIC model is an evaluated model for regional and transnational collaboration in the field of innovation, applied research and development of broadband media services. The model has been developed and tested during the three and half years that the INTERREG IVB North Sea Region Programme project E-CLIC has been running.

The E-CLIC model describes the best way of cooperation through a connected ring of implemented E-CLIC centres and possible benefits for target groups such as academia, the public sector and the industry. But there are also a lot of other direct and indirect target groups, e.g. involved students, citizens of rural areas that could benefit from this model and the different outputs of the E-CLIC project.

There are of course some Lessons Learned and some issues which should be revised, but the most of the different approaches of the E-CLIC centres are fulfilled and the transferability and sustainability in other European spaces or the expansion to other potential partners are given.

The cooperation and participation of businesses, regional clusters, public bodies, universities and young talented students during and after the official project run-time explain this successful story. All participating institutions are willingly to pursue the targets of the E-CLIC model and continue to work together to make the North Sea Region a better place to work and invest in.

Furthermore the results and experiences from the E-CLIC project (e.g. the E-CLIC model) should be integrated in the running cluster project DANS – Digital Agenda for the North Sea – to reach a wider political public and to present a working model of transnational collaboration.