

EXTERNAL EVALUATION OF THE COMPLEAP PROJECT

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1. Introduction

1.1. Background of the external evaluation

Finnish Education Evaluation Centre (FINEEC) has produced an external evaluation that covers the CompLeap project carried out 12/2017-11/2019. FINEEC is an independent agency responsible for the evaluation of education. It operates as a separate unit within the Finnish National Agency for Education. FINEEC activities are described in more detail at <https://karvi.fi/en/>. This evaluation belongs to the paid fee services offered by FINEEC. All the paid fee services are tailored in close cooperation with the customer.

The key operating principles of FINEEC are the independence of evaluation and enhancement-led evaluation. Enhancement-led evaluation emphasises participation, as well as trust between the party implementing the evaluation and the evaluation participant. These principles have been applied to this evaluation.

The EU-financed CompLeap project has been implemented by the Finnish-Dutch consortium led by CSC – IT Center for Science in Finland. The language of the project has been English, which was also used in the external evaluation.

The consortium partners involved in the CompLeap project have been the following:

Project consortium partners:

- CSC – IT Center for Science (a coordinating partner), Finland
- Finnish National Agency for Education (Edufi), Finland
- Jyväskylä Educational Consortium Gradia (JEC), Finland
- Dienst Uitvoering Onderwijs (DUO), Netherlands
- University of Oulu, Finland

Associate partners involved in the piloting stage:

- The Oulu Region Joint Authority for Education (OSAO), Finland
- Rovaniemi Municipal Federation for Education (Redu), Finland
- Die EU-Geschäftsstelle der Bezirksregierung Köln, Germany

More information on the CompLeap project can be found on their external web pages at <https://www.compleap.eu/>.

The consortium partners hold the following core tasks as well as expertise used in the CompLeap project:

CSC is a Finnish center of expertise in information technology owned by the Finnish state and higher education institutions. CSC has an important role as an instrument for steering and developing the Ministry of Education and Culture's education, science and cultural policy. CSC is owned by the Finnish state (70% shareholding) and higher education institutions (30% shareholding). CSC has been the coordinator of the CompLeap project consortium. CSC was in charge of the management of the project and ensured that the project plan was successfully implemented. This included the management of the

Consortium, the financial and administrative management and the project management tasks of the project, too.

The Finnish National Agency for Education (Edufi) is the national development agency responsible for early childhood education and care, pre-primary, basic, general and vocational upper secondary education as well as for adult education and training. It is steered by the Ministry of Education and Culture. The Agency maintains the Studyinfo.fi portal. The portal supports studying and career planning via one online service that was built between 2011 and 2015. Its services are intended for applicants, students, educational institutions and other education providers, companies and other business organisations as well as public administration and civic society.

Jyväskylä Educational Consortium Gradia (JEC) is a multi-cultural learning society owned by Central Finnish municipalities. In 2018, JEC had 9,889 students in initial vocational education, 3,525 students in continuing vocational education, 3,310 in general upper secondary education, 5,347 in other education and training and 1,043 music and dance students. JEC has extensive experience in offering integration training and later training and education opportunities for immigrants for acquiring the skills required in the labour market, including a strong emphasis on guidance and other supporting actions, especially in transition periods.

Dienst Uitvoering Onderwijs (DUO) is an executive department for the Dutch Ministry of Education, Culture and Science in the Netherlands. DUO implements complex legislation and regulations and has a lot of experience with large scale information systems. The sub-department DUO/International services is active in many national and international networks and projects. As a part of its activities, DUO runs the National Europass Centre.

The University of Oulu is a science university in Finland. There are 13,000 students as well as 2,900 employees at the university. The university consists of eight faculties and many specialised research units. The content knowledge and experience of learning analytics of the key staff and the supporting multidisciplinary group are strong. The multidisciplinary AVAIN-research group is investigating register data and digital traces of learning processes to study e.g. learning environments, learning pathways, student selection, subject selection in secondary education and its influences on student continuing educational paths, and learning analytics use for governance.

1.2. Organisation of the external evaluation

CSC and FINEEC made a mutual contract on the external evaluation on 27th August 2019. In the contract the following issues were agreed on: schedule of the evaluation, evaluation materials, key work phases, key responsibilities of the parties involved, evaluation framework, evaluation areas as well as evaluation questions linked with the each of the areas defined.

The CSC contact person for the evaluation was Project Manager Antti Laitinen. FINEEC staff members involved in the implementation of the evaluation were Senior Advisor Kati Isoaho as a project manager and Project Manager/digitalisation of the FINEEC operations Heli Koskenniemi as a consulting expert. Assistant Anu Lehikko from FINEEC joined the evaluation in two of the workshops as well as during the report writing. The progress of the evaluation was followed jointly by CSC, other project consortium partners and FINEEC. In addition, FINEEC experts presented the current status of the evaluation for the CompLeap steering

committee during the process (27th Sep 2019). In the end of the process, the Project Management Committee and FINEEC carried out a workshop (28th Nov 2019) where the evaluation results were discussed and elaborated on cooperatively.

The initial findings and conclusions were presented in the Final Seminar of the CompLeap project (14th Oct 2019) before the completion of the evaluation report. The initial findings and conclusions presented in the Final Seminar focused in the policy-driven aspects of the external evaluation (evaluation areas 3, 4 and 5), considering the seminar audience that consisted mainly of the project stakeholders. The Steering Committee as well as Project Management Committee reflected shortly the initial findings and conclusions for the FINEEC evaluators after the seminar. As stated in the evaluation contract between CSC and FINEEC, FINEEC provided a comprehensive set of mid-results (31 findings) as a slide set for CSC by 31st October 2019. This package covered all the five evaluation areas agreed on. They were used as a basis for this report.

CSC and FINEEC created together a reflection panel for the evaluation. The panel consisted of key stakeholder representatives of the CompLeap that attended the Final Seminar of the project on 14th October 2019. The panel joined the evaluation process by reflecting and testing the initial findings and conclusions elaborated by FINEEC experts. The reflection took place as an electronic Webropol online tool survey. Due to the short timeslot reserved for the panel work, the questionnaire was very concise. The answers submitted by the date were seven altogether. FINEEC exploited the notions and findings made by the panel in reporting. The panel did not take a part in the elaboration of the final conclusions or recommendations included in the evaluation report.

The CSC along with the other consortium partners had the chance to carry out a fact check on the report draft before its completion by FINEEC.

1.3. Aims, organisation and management of the CompLeap project

The establishment of the CompLeap project is a part of the government-level continuous learning policies in Finland. Continuous learning has been widely discussed in Finland, the Netherlands as well as in the EU area over the past decade.

In the implementing countries of the CompLeap project, the following reforms on continuous learning are currently under way, presented in the picture 1 below:

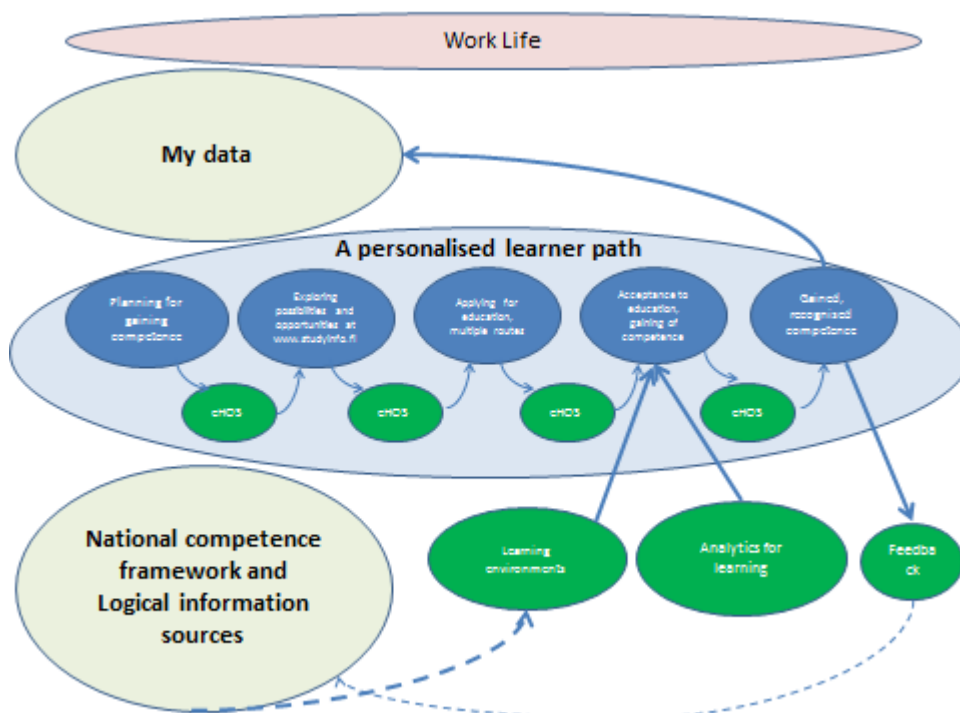
Finland	Parliamentary reform on continuous learning (21.8.2019-31.12.2020) https://minedu.fi/jatkuva-oppiminen-hanketiedot-ja-asiakirjat (in Finnish and English) The parliamentary reform of continuous learning will respond to people's lifelong need for upskilling and reskilling. The project will prepare a proposal for a reform of continuous learning. This comprehensive reform will apply to each point of the educational pathway at which the educational system interfaces with the
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	<p>provision and funding of education, social security, relocation security, unemployment security, independent and labour market training, and recognition of prior learning.</p> <p>One of the specific reform aims is to create a coherent system for the continuous counselling and guidance services.</p>
Netherlands	<p>SURF (Association of Dutch educational and research organisations) programme to support flexibility in higher education</p> <p>https://www.surf.nl/files/2019-04/Flyer%20versnellingsplan%20-%20zone%20Flexibilisering.pdf (in Dutch)</p> <p>The programme is based on the idea that lifelong development is becoming the new normal and higher education institutions must be alert to this. The programme will respond to the need for the more flexible learning routes, also between initial and post-initial education. In addition, the programme supports the learning routes where students can get control over their own learning. Furthermore, the programme aims to strengthen the student-centred approach, where students' needs determine the way to a diploma or a certificate.</p>

Picture 1: Current reforms on continuous learning in the countries that conducted the CompLeap project.

The entire EU funding allocated to the CompLeap project was appr. 1.3 million euros. The reimbursement rate of the costs was 70%. The total number of eligible costs was appr. 1.8 million euros.

The CompLeap project has been aiming to build a learner-centred ecosystem of digital services and products around skills and competences to better match competence supply and labour market needs, serving individual citizens, employers, decision-makers and, ultimately, the society at large. More specifically, the project has been aiming to empower the citizen to take ownership of their competence development by offering them an opportunity to plan their own learner pathway based on enhanced self-awareness, improved recognition practices and responsive education offerings. Furthermore, the competence formation has been based on national competence requirements reflecting the needs of the labour market. The key target groups of the CompLeap project – as described in the evaluation contract between CSC and FINEEC – have been immigrants and youth not in education, employment or training (NEET). The desired ecosystem is described in picture 2.



Picture 2: The description of the desired ecosystem (source: Description of the Action, updated version 23.4.2019)

The project objectives have been as follows:

1. To study and develop an integrated and holistic learner-centred digitalised ecosystem framework that will look beyond existing, often siloed, structures
2. To tailor the functionality of this framework so that it is suitable across Europe
3. To technologically build prototypes of this ecosystem
4. To deploy the developed ecosystem through networks

The goals set for the project have served as a basis for the external evaluation carried out by FINEEC, too.

The more specific description of the project presents these four objectives as follows¹:

Under **the first** objective, the project will develop the conceptual framework to support the creation, evolution and implementation of a so-called structured, digitalised learner pathway integrating a personal competence development plan, education offerings, labour market needs and competence intelligence together. The digital learner pathway aims to provide comprehensive yet tailored support to all learners while particularly addressing the needs of citizens at risk of exclusion. To support the **second** objective, the system will be developed in cooperation with international partners / networks. The technological solution

¹ Grant Application ECOKT2016, Annex 1 (updated version 23.4.2019) Description of the Action.

will be open source, modular and easily adaptable to different geographic locations and circumstances. The interested parties may choose to implement the ecosystem as a whole or only parts of it depending on their needs and already existing infrastructure. The **third** objective aims to build prototypes of the modules of the ecosystem to test the technical feasibility and architectural principles. The **fourth** objective will aim to support the deployment of the ecosystem through various professional networks and impact evaluation studies.

The project management and results have been documented on the public wiki pages at <https://wiki.eduuni.fi/display/csccompleap/CompLeap+Home>

The consortium partners had agreed on the division of the responsibilities, based on the work packages (WP) defined for the project.

The work packages along with the resources defined by person months have been the following, as presented in the picture 3:

	Work Package	Lead		Lead Participant	Total person months	Start	End
No.(i)	Title	Participant No. (ii)		Short name	per WP (iii)	Month (iv)	Month (v)
1	Project management	CSC – IT Center for Science (No. 1)		CSC	23.5	M1	M24
2	Requirements and architecture design	Finnish National Agency for Education (No. 2)		EDUFI	44	M2	M22
3	Prototype development	Finnish National Agency for Education (No. 2)		EDUFI	37.75	M6	M21
4	Deployment and evaluation	Jyväskylä Educational Consortium (No. 4)		JEC	27.75	M17	M22
5	Dissemination, communication and exploitation	DUO (No. 5)		DUO	23.5	M1	M24

Picture 3: CompLeap project work packages (source: Description of the Action, updated version 23.4.2019)

1.4. Goals of the external evaluation

In the project plan it is stated that the results of the evaluation should draw lessons that will inform the key stakeholders of this evaluation and may draw future recommendations for policy-makers. Furthermore, the project plan also states that the evaluation should assess the preliminary indications of potential impact and sustainability of results including the contribution to the development and formation of competences.

The ComLeap project plan includes an impact evaluation study to be submitted to the European Commission. The aim of the evaluation carried out by FINEEC is to produce information that supports CSC project reporting for the financing party as well as the further development of the ComLeap activities. In addition, the external evaluation carried out by FINEEC produces information on ComLeap’s capacity to be integrated into digital learning services nationally and internationally.

The external evaluation is part of the larger entity that CSC along with the project consortium partners provides for the European Commission as an impact evaluation study covering all ComLeap activities. The focus, evaluation areas and evaluation questions of the FINEEC’s part are described in detail later in this implementation plan.

1.5. Evaluation framework

A division into a) investments, b) outcomes, c) impacts and d) effects created a general framework for the external evaluation carried out by FINEEC. The concepts of short-term/long-term impacts as well as intended/unintended impacts were also applied when they were found relevant.

Inclusion of the consortium partners and stakeholders, implementation of the learner-centred approach and search for good practices were applied to the evaluation as matrix topics.

In the original plan the learner-centredness as a topic was included in several evaluation areas. However, in order to keep the message clear for the report readers, in this report all the findings related to the learner-centred approach are presented in section 3.1.

The evaluation areas as well as evaluation questions are described in the picture 4 below.²

Evaluation area	Evaluation questions
<p>1. <i>Organisation and management of the ComLeap project</i></p>	<p>How and to what extent has the ComLeap project organisation supported the achievement of the objectives set for the project?</p> <p>How and to what extent has the ComLeap project management supported the achievement of the objectives set for the project?</p> <p>What kinds of good practices can be identified within the project organisation and management?</p>

² The questions listed in picture 4 mainly follow the structure presented in the Implementation plan for the evaluation of the ComLeap project, annex 1 to the Evaluation contract between CSC and FINEEC. However, a couple of adjustments have been made due to the evaluators’ upgraded understanding of the project’s key activities.

<p>2. <i>Monitoring and evaluation of the CompLeap project</i></p>	<p>How and to what extent have the chosen monitoring practices supported the achievement of the objectives set for the project?</p> <p>How and to what extent have the chosen evaluation practices supported the achievement of the objectives set for the project?</p> <p>What kinds of good practices can be identified within the project monitoring and evaluation?</p>
<p>3. <i>CompLeap framework architecture and services development</i></p>	<p>What has been CompLeap’s capacity to achieve the objectives set for the framework architecture and services development, assessed against the planned resources (financial, policy, etc.)?</p> <p>What kind of outcomes has CompLeap framework architecture and services development produced?</p> <p>What kind of impacts has CompLeap framework architecture and services development produced?</p> <p>What kind of effects has CompLeap framework architecture and services development produced?</p> <p>How is the learner-centred approach implemented in the CompLeap project?</p> <p>What is the potential impact and sustainability of the CompLeap project as a whole?</p>
<p>4. <i>CompLeap prototype services capacity to be integrated into the digital learner services (nationally and internationally, incl. Europass).</i></p>	<p>How and to what extent could the CompLeap services be integrated into the digital learner services nationally and internationally, reflected against the goals set for the project?</p> <p>What is the potential impact and sustainability of the CompLeap project as a whole?</p>
<p>5. <i>Communications and stakeholder relations</i></p>	<p>How and to what extent have the chosen communication practices supported the achievement of the objectives set for the project?</p> <p>How and to what extent have the chosen stakeholder practices supported the achievement of the objectives set for the project?</p> <p>What kind of outcomes have CompLeap communications and stakeholder relations produced?</p> <p>What kind of impacts have CompLeap communications and stakeholder relations produced?</p> <p>What kind of effects have CompLeap communications and stakeholder relations produced?</p>

	<p>What kinds of good practices can be identified within the communications of the CompLeap project?</p> <p>What kinds of good practices can be identified within the stakeholder relations of the CompLeap project?</p>
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Picture 4: The evaluation areas and evaluation questions used in the external evaluation of the CompLeap project.

1.6. Materials used in the external evaluation

The external evaluation was partially based on the materials produced by the CompLeap consortium partners.

The project materials are documented on the public wiki pages at <https://wiki.eduuni.fi/display/csccompleap/Key+documents>

Due to the relatively short implementation time of the external evaluation (three months in practice), the use of the materials submitted to the wiki pages has been selective and focused to the set of the key documents and descriptions as follows:

- Description of the Action (updated version 23.4.2019)
- Original project budget and its updated version in 07/2019
- Modified Project Plan 2019
- Mid-term review conducted by the European Commission in 2018
- Project Road map
- Desk research and its updated version (Deliverable 15)³
- Basic information on the Steering Committee meetings
- Documentation on the stakeholder workshops held outside of Finland with the international partners
- Sustainability Plan of the project submitted for the European Commission (Deliverable 23)
- Report on pilot deployment of learner plan prototype (Deliverable 32)
- Europass Case Study

In addition, the FINEEC was provided the analysed results of the user survey conducted jointly by Edufi, JEC and University of Oulu among the pilot users of the CompLeap prototype (state of the surveying in September 2019, 32 answers altogether).

The Sustainability Plan prepared for the project (Deliverable 23) was presented to the FINEEC evaluators after its completion by 30th October 2019. It has also served as an evaluation material at the late stage of the external evaluation.

³ Deliverable refers to a certain form of management and documentation as part of the project. The project steps are divided into Deliverables, which have been reported to the European Commission over the course of the project.

In addition, FINEEC collected evaluation material as follows:

- Self-evaluation reports completed by each of the CompLeap consortium partners. FINEEC designed the evaluation concept and collected the electronic reports via the Webropol online survey tool. All the partners submitted the report (five altogether). For the electronic Webropol self-evaluation questionnaire, see appendix 1.
- Focus group interviews of the key actors: representatives of the Finnish Ministry of Education and Culture, Project Management Committee, Finnish National Agency for Education staff involved in the prototype development and project management, a selection of the Finnish and German stakeholders available. The stakeholder interviewees belonged to the following organisations: The partners and associate partners involved in the piloting in Finland and Germany, Rectors' Conference of Finnish Universities of Applied Sciences Arene, Akava - Confederation of Unions of Professional and Managerial Staff in Finland, Service Sectors Employers Palta, Finnish Scouts, Finnish Guidance Counsellors - SOPO, The Association of Finnish eLearning Centre.
- Workshops with the Steering Committee (27.9.2019) and with the partners and associate partners involved in piloting (15.10.2019), altogether ten representatives from the following Finnish VET providers: Jyväskylä Educational Consortium Gradia (JEC), The Oulu Region Joint Authority for Education (OSAO) and Rovaniemi Municipal Federation for Education (Redu).
- FINEEC evaluators Kati Isoaho and Heli Koskenniemi attended the Final Seminar of the CompLeap project on 14th October 2019 in Helsinki. The seminar presentations as well as discussions have also informed the findings, conclusions and recommendations presented in this report.
- The electronic reflection round among the key stakeholders on the initial findings and conclusions carried out by FINEEC. The initial findings and conclusions were presented in the Final Seminar of the project on 14th October 2019 in Helsinki. Altogether seven answers were submitted by 21st October 2019. For the electronic Webropol questionnaire, see appendix 2.

Due to the large number of stakeholders involved in the project network, the choice of the interviewees was based on the following principles:

- Key project actors (Steering Committee, Project Management Committee, staff members involved in the prototype development at Finnish National Agency for Education) were easily available and their interviews were essential when considering the goals set for the external evaluation.
- Representatives of the Finnish Ministry of Education and Culture were interviewed as the original initiative for the CompLeap Grant Application was made by the ministry.
- The workshop with the project actors involved in the piloting stage was based on the initiative made by JEC – one of the consortium partners – who was eager to provide the Finnish associate partners a chance to reflect on the project experiences.
- Other stakeholders were interviewed based on their availability and willingness to contribute to the evaluation. In addition, the time left for the external evaluation also brought some limitations to the number of interviews carried out.

- Finally, as the external stakeholder interviews provided in many cases rather similar views to the project, its key outcomes and future potential, it was not seen as relevant to reach all the possible parties listed as project stakeholders.

1.7. The report contents

As agreed with CSC, the evaluation results are presented in two parts in this report. The first part covers the topics aimed at the future development of similar EU-financed projects in the field of education, continuous learning and digital learner services. Furthermore, the second part covers the policy-related topics, aimed at a wider audience such as policy-makers, state authorities and various stakeholders. The conclusions, good practices and recommendations covering the entire external evaluation are presented in section 4.

2. Evaluation results: evaluation areas 1 and 2

Evaluation areas 1 and 2 cover the topics related to the project's internal issues. This part of the report aims to inform the key project actors, state authorities as well as funding party on the lessons learned in the course of the project.

2.1. Organisation and Management of the ComLeap project

This section illustrates the strengths and weaknesses of the ComLeap project's organisation and management starting from the grant application stage. In addition, it presents good practices identified from the evaluation material.

The evaluation questions guiding this section have been the following:

- How and to what extent has the ComLeap project organisation supported the achievement of the objectives set for the project?
- How and to what extent has the ComLeap project management supported the achievement of the objectives set for the project?
- What kinds of good practices can be identified within the project organisation and management?

Key Findings

- **Application stage of the project funding was challenging for the key actors in charge of preparing the Grant Application for the European Commission.** The actual time left for the preparation was relatively short. In addition, the funding decision was delayed which led to challenges in the beginning of the project. These two factors have had an impact on the project actors' de facto ability to implement the project goals in an effective manner.
- **The project partners have multifaceted expertise which have supported the achievement of the project goals.**
- **Due to several reasons, the project organisation is partially perceived as complex by some project actors. In addition, the actual ownership of the project has remained unclear in some cases.**
- **Changes to the project's key staff challenged the daily management and effective implementation of the project in the starting phase. However, the situation has improved in the course of the project and the Project Management Committee has demonstrated their good ability to work together.**
- **Good practices**
 - 1.) Weekly meetings as a part of the project management.
 - 2.) Webinars for the project's key actors, such as those arranged for the users of the prototype within the project.
 - 3.) Majority of the project documentation as public wiki pages.

2.1.1. Application stage of the CompLeap project

Interviews show that the application stage of the project funding was challenging for the key actors in operative charge of the application. The original initiative for building such a project was made by the Finnish Ministry of Education and Culture. Furthermore, CSC along with Edufi was in charge preparing the grant application. Edufi was also in charge of looking for the VET education providers to pilot the service prototypes. In addition, as the final decision on the funding by European Commission was submitted later than supposed, some of the partners were not fully prepared to start the project at the given stage of the work year.

These two factors have had an impact on the project actors' de facto ability to implement the project goals in an effective manner in the beginning of the project. In future, the policy-level actors such as ministries should pay extra attention to the timing of similar initiatives and avoid setting overly tight schedules for the policy-implementing operative partners whenever possible.

2.1.2. The composition of the project partners

Based on the evaluation material as whole, it is clear that the choice of the project consortium partners has been conducted using two principles. First, the aim has been to find the partners that complement each other substantially in a productive manner. Second, due to the limited time window in the grant application phase, former project partnerships have played an important role. Both choices seem relevant for the FINEEC evaluators, considering the conditions described above.

Self-evaluation reports along with the project documentation show that the chosen project partners have complemented each other in a good manner (different specialisation areas and tasks). This is visible e.g. in the work packages and division of responsibilities within the project. Each of the partners have had a responsible project manager/coordinator in charge of the certain work packages defined in the project documentation.

Self-evaluation reports as well as some of the interviews show that the project organisation is partially perceived as complex. In addition, the actual ownership of the project is in some cases seen unclear.

As analysed in detail, these findings relate to the following features:

- The number of actors involved is relatively high.
- The different sizes, profiles as well as responsibilities of the project consortium partners: CSC have led the project in general (WP 1), but Edufi has had the biggest actual workload along with equivalent resources. In addition, Edufi was in charge of work packages 2 and 3 that cover the actual framework architecture and a prototype development (key outcomes of the project). Furthermore, JEC was in charge of piloting and deployment of the prototypes in the field of VET in Finland.
- Several levels of operations (state authorities and equivalent actors, local VET providers in Finland, international networks in the Netherlands, Germany and Estonia, various stakeholder meetings and networks in Finland).
- To some extent, complex communication chains and responsibilities: CSC along with Edufi has been in charge of national as well as international stakeholder relations, DUO as the only partner outside of Finland has taken actions on the project communications and dissemination (WP 5) such as web pages and marketing material, JEC has maintained contacts with the piloting partners in the field (WP 4), University of Oulu has maintained the research staff pool for the research and learning analytics purposes.

The high number of actors (both organisations as well as individual actors) derives partially from the original choice of the project consortium partners. The associate partners involved in the pilot stage of the project have increased the number of actors involved. Furthermore, the chosen strategy in the stakeholder management has been to include as many stakeholders as possible to join and follow the project within a low threshold. Considering the goals set for the project, these have been relevant choices, although they have also led to some unintended results, such as to some extent unrealistic expectations among some project actors and stakeholders (see also section 3.3 on communications and stakeholder relations).

In the light of the interviews, the project organisation has been most challenging for the field actors involved in the pilot stage. As pilot stage actors joined project in a concrete manner during the second year of its implementation, more emphasis on their introduction to the project in general might have been beneficial.

For example, they would have benefitted from more concise communication on the original project goals and current state of the project at the time of joining. As the number of individual actors has gradually increased, it has led to some extent sporadic communications practices, e.g. not all the actors who joined the project late have received all the relevant invitations directly from the project’s key actors. However, this is also natural, as none of the extensive projects can reach all its actors perfectly. In future projects, it would be recommendable to clearly define who is in charge of keeping track of all key actors and communicating with them during the project.

The key actors in charge of the operative implementation of the project have changed to some extent in the course of the project. In addition, most of the staff have worked with percentage workload for the project. The consortium partners with the biggest workload along with equivalent resources have had full-time project managers, which has been beneficial for achieving the project goals. The picture 7 presents the state of the staff by the consortium partners during the project implementation. The table shows that the total number of staff members involved in the project implementation has been relatively high. In addition, based on the information provided by the project consortium members, three (JEC, DUO, Edufi) of the local project managers/work package leaders changed in the course of the project.

CONSORTIUM PARTNER	NUMBER OF STAFF MEMBERS WHO WORKED IN THE PROJECT	NUMBER OF PERMANENT STAFF MEMBERS	NUMBER OF NON-PERMANENT STAFF MEMBERS	NUMBER OF FULL-TIME STAFF MEMBERS	NUMBER OF STAFF MEMBERS WORKING % WORKLOAD FOR THE PROJECT
CSC	6	5	1	1	5
Edufi	18	12	6	3	15
JEC	10	2	8	1	9
DUO	5	3	2	0	5
University of Oulu	6	2	4	0	6
TOTAL	45	24	21	5	40

Picture 5: Staff involved in the CompLeap project by the consortium partners. The numbers presented in the table include all the staff members in the course of the project, also those who no longer worked in the project during the external evaluation. The contribution of the staff members who worked % workload for the project varies.

Based on the evaluation material, these features have sometimes created a challenge for the effective implementation of the project activities. From a project coordination point of view, the changing project managers among the partners were a challenge for the daily implementation of the project in the beginning of it. However, the FINEEC evaluators understand that this is something that the current actors of the project did not have influence over. The interview with the Project Management Committee indicates that the situation improved over the course of the project. The Sustainability Plan (Deliverable 23) states that changes in the project staff has also benefitted the project, as there have been a wide range of expertise available for the project purposes. FINEEC evaluators agree on this.

The interviews show that the people in charge of the original Grant Application have mainly not been involved in the actual project implementation. It is possible that this has partially led to the slow start of the project as well as to the relatively slow start of the prototype development. In future, it would be recommendable to consider how the link between the planning phase and implementation phase is ensured, including in the terms of staffing the projects.

These features were a challenge for the effective implementation of the project. However, this is at least partially due to the general way of building and implementing EU financed projects. In addition, the evaluation material shows that the staff members in charge of coordination have been capable of managing the project even in the changing conditions. The challenges in the beginning of the project were identified in the Mid-term review by the European Commission, too.

2.1.3 The allocation of the funds within the CompLeap project

As stated in section 1, the entire EU funding allocated to the CompLeap project was appr. 1.3 million euros. The reimbursement rate of the costs was 70%. The total number of eligible costs was appr. 1.8 million euros. The picture 6 presents the original budget allocation of the project at the starting phase in 2018. A great deal of funds and workload (app. 42%) was originally allocated to Edufi for the design and development of the framework architecture and prototypes. Some reallocations were adapted based on the recommendations made in the Mid-term review by the European Commission. The need for the reallocation was mainly due to the underuse of staff resources during the first year of the project, as well as identified needs to invest more in the learning analytics work as a part of the project in the University of Oulu. The picture 7 presents the amended budget in 2019. Furthermore, the picture 8 shows the allocation of the person months by work packages and between the project consortium partners after the reallocation (as of 23rd April 2019).

Applicant	Applicant Short name	Personnel	Subcontracting	Travel & Subsistence	Other costs	Indirect costs	Total eligible costs	Reimbursement rate	Requested EU Funding
1	CSC	214,200	7,000	50,000	25,000	20,734	316,934	70%	221,854
2	EDUFI	457,483	381,255	43,000	30,000	63,821	975,559	70%	682,891
3	UOulu	117,750	0	13,000	10,000	9,852	150,602	70%	105,421
4	JEC	106,500	0	45,000	100,000	17,605	269,105	70%	188,374
5	DUO	70,000	10,000	15,000	10,000	7,350	112,350	70%	78,645
Totals		965,933	398,255	166,000	175,000	119,362	1,824,550		1,277,185

Picture 6: the original budget of the CompLeap project.

Applicant	Applicant Short name	Personnel	Subcontracting	Travel & Subsistence	Other costs	Indirect costs	Total eligible costs	Reimbursement rate	Requested EU Funding
1	CSC	214 200	25 000	32 000	25 000	20 734	316 934	70 %	221 854
2	EDUFI	457 483	381 255	43 000	30 000	63 822	975 560	70 %	682 892
3	UOulu	117 750	0	13 000	10 000	9 853	150 603	70 %	105 422
4	JEC	106 500	0	45 000	100 000	17 605	269 105	70 %	188 374
5	DUO	70 000	10 000	15 000	10 000	7 350	112 350	70 %	78 645
Total		965 933	416 255	148 000	175 000	119 363	1 824 551		1 277 186

Picture 7: the amended budget of the CompLeap project in 07/2019.

	WP 1	WP 2	WP 3	WP 4	WP 5	Total person months per participant
CSC	14	9	3	3	7	36
EDUFI	5.5	16	26.5	12	7	67
UOulu	2	14	6	5	1.5	28.5
JEC	1	3	2	6	3	15
DUO	1	2	0.25	1.75	5	10
Total person/months	23.5	44	37.75	27.75	23,5	156.5

Picture 8: Allocation of the person months in the CompLeap project (source: Description of the Action, updated version of 23rd April 2019).

The FINEEC evaluators see that the proceeded reallocations show a good ability to adjust the project during its implementation. The CompLeap case makes visible a couple of features regarding the EU-funded projects in general. First, the original design of the project budget really matters and has a remarkable impact on the

achievement of the project goals. As noted earlier in this report, the allocation of the funds has not fully supported the project actors' inclusive participation in the design and development of the key outcomes, the framework design and development of the prototypes. Second, as the adjustments to the budget were carried out after the Mid-term review by the European Commission, the importance of the review for the project has been notable. The evident impact of the Mid-term review indicates the effective work of the European Commission in this case, which has been an asset for the project.

The self-evaluation reports show that the budget allocation has not fully supported the effective implementation of the project. As some of the project consortium partners did not have much resources in the work packages 2 (design of the framework architecture) and 3 (design and development of the service prototype), their actual possibilities to contribute to these processes was limited.

2.1.4. Documentation of the CompLeap project

As noted earlier in this report, the project has been documented on public wiki pages. The high publicity of the pages is a clear strength of the project. Furthermore, the amount of material submitted to the pages is remarkable, which indicates the careful and detailed documentation of the project. As a principle, the general openness in publicly funded project activities is an asset which can have potential positive impacts on the project outcomes' sustainability and future use. CompLeap has implemented openness in a wider sense than just in terms of public documentation, e.g. as an inclusive way of working with the stakeholders (extensive networks, webinars and demo sessions with the stakeholders and project actors, etc.).

However, the large amount of documentation submitted to the wiki pages is also a challenge. The usability and accessibility of the web-based information sources is currently much highlighted. Although the external web pages provide information on the project activities and results in a concise form, the accessibility of the public wiki pages should also be addressed in future projects.

2.1.5. Day-to-day management of the CompLeap project

The work of the Project Management Committee (PMC) seems essential for the implementation of the project. The Mid-term review submitted by the European Commission in 02/2019 indicates that the start of the project has not been easy for the operational actors and much effort was required during the second year of the project to keep it on track. In the interview of the PMC, it was evident that they have been able to discuss also the challenging topics and keep the project together, even in the changing conditions.

All the consortium partners were able to name strengths in the project management. For example, the following features were pointed out in the self-evaluation reports: responsible and agile project management by CSC, CSC's previous experience in EU-financed projects, use of electronic tools (such as Zoom work and meeting space) in the day-to-day management, and CSC's services in the financial matters of the project.

The self-evaluation reports also show that there are some issues where the project consortium partners do not fully agree. The following issues were identified from the self-evaluation reports and interviews. First, the agility has been one of the targets set for the project implementation. Some of the partners observe that the project management has not fully followed an agile way of working, and that there has been a need for more flexible and quicker decision-making to advance the achievement of the project goals. On the other hand, some of the partners observe that they have not been always listened to enough, and in some cases even been micromanaged. Second, some of the partners would have liked to have more internal

communication about the choices made in the course of the prototype development. It is important to note that mutual trust and respect always play a role in projects like CompLeap, alongside the structural choices and official management practices.

2.2. Monitoring and Evaluation of the CompLeap project

This section illustrates the strengths and weaknesses of the CompLeap project's monitoring and evaluation, starting from the beginning of the implementation period. In addition, it presents good practices identified from the evaluation material.

The evaluation questions guiding this section have been the following:

- How and to what extent have the chosen monitoring practices supported the achievement of the objectives set for the project?
- How and to what extent have the chosen evaluation practices supported the achievement of the objectives set for the project?

What kinds of good practices can be identified within the project monitoring and evaluation?

Key findings

- **The project actors (Project Management Committee and Steering Committee) recognise the key practices of the monitoring and evaluation in a similar way. This is an asset that has advanced the achievement of the goals set for the project.**
- **The Mid-term review by the European Commission is seen as beneficial among the key project staff and Steering Committee members. Its recommendations have been seriously considered and implemented in the project management and other work package operations.**
- **The Mid-term review, along with the implemented requests, has evidently supported the achievement of the goals set for the project.**
- **The project partners' opinions on the sufficiency and regularity of the monitoring of the project vary to some extent. However, the project actors have been able to enhance the monitoring practices over the course of the project.**
- **Good practices:**
 - 1) The Mid-term review as a European Commission practice has visibly been beneficial to the CompLeap project. It has helped to enhance the various management practices and brought some new elements to the actual project implementation.
 - 2) Work package-specific local evaluation meetings at Edufi have contributed to the effective implementation of the project.
 - 3) Systematic feedback collection from the webinar participants.

2.2.1. Key practices of the monitoring and evaluation

The self-evaluation reports show that the project consortium partners recognise the key practices of the monitoring and evaluation mainly in a similar way. The following practices were identified from the self-evaluation reports:

- Project management committee (PMC) meetings
- Steering committee (SC) meetings
- Weekly meetings of the work package (WP) leaders
- Financial monitoring with the assistance of CSC as a leading organisation
- Mid-term review by European Commission (EC)
- Documentation of the wiki pages such as Deliverables and a Road Map
- Systematic way to collect feedback from the webinar participants

Based on the self-evaluation reports, the project partners' opinions on the sufficiency and regularity of the monitoring of the project vary to some extent. Some of the partners are rather satisfied with it, while others are more critical. One of the critical views pointed out in the self-evaluation reports relate to the number of monitoring and evaluation practices. It is even possible that there have been too many ways to monitor the project considering its two-year duration.

However, the self-evaluation reports also show that the project actors have been able to enhance the monitoring practices over the course of the project. For example, it was noted that the financial monitoring of the project enhanced remarkably during the implementation period. In addition, an introduction of the project Road Map has helped to focus the project and keep its main actors more aware of the state of the project.

2.2.2. Mid-term review by the European Commission

The European Commission carried out a Mid-term review on the CompLeap project. The review report was used as evaluation material by the FINEEC evaluators. Interviews as well as self-evaluation reports show that it was perceived as beneficial among the key project staff and Steering Committee members. The requests in the report have been seriously considered and implemented in the project management and other work package operations. The Modified Project Plan (July 2019) presents the state of the project as well as the actions taken based on the Mid-term review.

The following actions were taken based on the Mid-term review:

- The update of the project Road Map
- Creation of the modified project plan for the rest of the project
- Resubmission of the following Deliverables: 14/Risk Management Plan, 15/Desk Research, 18/User Scenarios, 35/Stakeholder Management Plan
- Submission of the additional documents concerning the development of the beta prototype
- More careful and on-going updates to the living documents on the web pages

- Conduction of the Europass Case Study

The Mid-review as well as actions taken after it are all carefully documented on the wiki pages.

As described in the Modified project plan, the project budget amendment was also carried out after the Mid-term review.

3. Results: Evaluation areas 3, 4 and 5

Evaluation areas 3, 4 and 5 cover the policy-related topics of the evaluation. The content of this part of the report aims to inform the key stakeholders as well as policy makers on the lessons learned in the course of the project. Furthermore, it provides a range of views on the future potential of the CompLeap key outcomes presented by the various actors in the evaluation interviews, self-evaluation reports as well as in the project's own documentation (such as the Sustainability Plan, Deliverable 23).

3.1. CompLeap framework architecture and services development

This section presents the key outcomes as well as potential future impacts and effects of the CompLeap framework architecture and prototype development. Furthermore, it illustrates the strengths and weaknesses of the development operations and process. In addition, it presents good practices identified from the evaluation material.

The evaluation questions guiding this section have been the following:

- What has been CompLeap's capacity to achieve the objectives set for the services development, assessed against the planned resources (financial, policy, etc.)?
- What kinds of outcomes has CompLeap services development produced?
- What kinds of impacts has CompLeap services development produced?
- What kinds of effects has CompLeap services development produced?
- What is the potential impact and sustainability of the CompLeap project as a whole?

Key findings

- **The representatives of the project consortium partners share the understanding of the key goals set for project. This is an asset that has supported the achievement of the project outcomes.**
- **The key goals of the project – the design of the framework architecture and the development of the service prototypes – were both completed over the course of the project. In terms of the development stages, the framework architecture can be perceived as a mature outcome and the prototypes as a developing outcome. The developing outcome refers to the potential of the prototype in future.**
- **One of the greatest results of the CompLeap project is the way it makes visible the potential built into the national education data resources and ways to manage them.** The digital, competence-based learner services illustrated in the prototype are a kind of advanced product in which the national education data resources play a primary production role.
- **The actual impact of the CompLeap project outcomes among the original target groups – immigrants and NEETs – is still low. The original goal of developing digital learner services prototypes does not fully comply with the needs of the specified target groups, whose ability to use digital services independently is often limited, along with the limited language skills.** However, there is evident potential regarding the needs of these customer groups too, if the project's key outcomes are in future more strongly linked with professional counselling and guidance practices in Finland, the Netherlands and across EU countries.
- **The different stakeholder groups perceive the importance of the key outcomes differently to some extent.** For example, for the state-level actors the framework architecture seems to be the most important outcome, while the field-actors have most expectations regarding the concrete electronic counselling tools.
- **The project implementation indicates a successful adaptation of learner-centredness.**
- **Good practices:**
 - 1) Webinars and demo sessions for the project actors as well as active followers among the stakeholders.
 - 2) An active involvement of the associate partners to the project.

3.1.1. Understanding of the project goals among the various actors

Self-evaluation reports show that the project consortium partner representatives share the understanding of the key targets of the project implementation. This is an asset that has advanced the achievement of the project goals in the changing conditions. The weaknesses pointed out in the interviews relate to the very general target setting of the original Grant Application. This led to the situation where the project consortium partners had to refocus the project at the beginning of the implementation period.

As explained in section 2.1, the large number of project actors has partially led to the sporadic understanding of the project goals at the pilot stage of the project (see also section 3.1.6. on the pilot stage of the project). In the self-evaluation reports, managing expectations is seen as one of the project challenges. Based on the evaluation material, this covers both part of the project actors as well as some of the stakeholders. The more actors, the more challenging it is to communicate in an equal and coherent manner on the project goals.

3.1.2. The key outcomes of the ComLeap project

As stated in section 1, the three first goals set for the entire project were the following:

1. To study and develop an integrated and holistic learner-centred digitalised ecosystem framework that will look beyond existing, often siloed, structures
2. To tailor the functionality of this framework so that it is suitable across Europe
3. To technologically build prototypes⁴ of this ecosystem

A concrete investment in the work packages 2 and 3 led by Finnish National Agency for Education has been remarkable. As shown in section 2.1, a great deal of the project workload (appr. 42% of the person months) along with the equivalent funds have been allocated to work packages 2 and 3. They deal with the framework architecture and prototype development. As the framework architecture and the prototypes create a core of the intended project outcomes, the investment was meant to support the effective implementation of the project. However, as described in section 2.1.3, some reallocation has been necessary after the Mid-term review due to challenges in the project start. One of the recommendations given in the Mid-term review by the European Commission was to resubmit more concrete plans on the prototype development.

In the light of the evaluation material, both the framework architecture and the prototypes were completed during the project. Accordingly, they are both concrete short-term outcomes and carry potential long-term impacts and effects.

However, the evaluation material also shows that the development stage differs between them. The FINEEC evaluators recognise the conditions (time, financial resources) within which the development work has taken place. The actual time reserved for the whole project sets obvious limits, as do resources. The design, development and piloting of the prototypes are conducted adequately, considering these factors. The necessary limitations in the prototype development have led to the situation in which its full potential is not visible yet. Thus, it is beneficial to explore the future needs for the further development of the prototype or equivalent services advancing the same algorithm.

⁴ The FINEEC evaluators recognise that the development process of the prototypes within the ComLeap project includes several steps as well as a couple versions of the prototypes (beta, html). However, as the FINEEC evaluators do not directly review the functionality or technical details of these versions, the different versions of the prototypes are not indicated in this report. For clarity's sake, all the prototype versions are referred as "prototypes".

To illustrate different development stages of the key outcomes, the FINEEC evaluators have divided the mature outcome and the developing outcome as presented in the table below:

Mature outcome	Developing outcome
<p>The framework architecture developed in the project is designed to be tailored across EU countries. The benefits and advanced nature of the framework architecture are widely recognized among the various project actors and stakeholders. For the state-level actors, it is the primary outcome of the project.</p>	<p>The prototypes (incl. algorithm) have been designed and piloted as part of the project. However, the actual time available for the development work and piloting has been relatively short due to the time reserved for the project as a whole. As supposed, the prototype makes visible the potential of the competence-based digital learner services, but does not yet offer full possibilities for real-life counselling work. For the field-actors among the VET providers, it is the primary outcome of the project.</p>

The developing nature of the prototypes derives from the following issues, identified from the evaluation material:

- The relatively slow start of the project, basically not depending on the current operative project actors.
- The need to recreate detailed project goals in the beginning of the project that were quite general in nature in the original grant application.
- Challenges in the beginning of the project when looking for the suitable staff from the IT management unit to implement the work packages 2 and 3 actions at Edufi. Due to the staff changes, there were challenges in finding enough IT architect resources during the first year of the project.
- The relatively short time available for the actual piloting of the CompLeap prototype among the intended user groups (individual users, counselling staff at Finnish VET education providers). Within the timeframe of the project, the final number of prototype test users who attended the test survey was 107. The user survey results (32) included in the evaluation material are informative primarily as examples, not as a representative sample of the intended target groups.⁵
- The choice was to build the prototype around the data and information on the vocational education and training in Finland. Considering the original choice of the piloting parties among the Finnish VET providers, this is a relevant limitation and has supported the effective piloting of the prototype within the limited timeframe in 2019. However, due to these limitations the current prototype offers a somewhat limited view of the opportunities built into the framework architecture and algorithm developed in the project.

The Sustainability Plan (Deliverable 23) illustrates the current state of the prototype, and in addition presents the required future connections to the other levels of education in Finland. The FINEEC evaluators agree on the need to complement the algorithm/prototype with a wider selection of educational opportunities.

⁵ Due to the schedule set for the external evaluation, it was possible to include the test user survey results gained by September 2019 in the evaluation material. However, the final number of the test users was higher, as demonstrated in the report text.

The interviews show that the framework architecture and a prototype along with their design process has been both inclusive and a learning process for the many actors involved. The learning aspect was also visible in self-evaluation reports. That includes the project consortium partners, Finnish ministry representatives as well as the most active stakeholders in Finland, the Netherlands and Germany. The different stakeholder groups perceive the importance of the key outcomes to some extent varying way. For example, for the state-level actors the framework architecture seems to be the most important outcome and the field-actors have the most expectations regarding the concrete electronic counselling tools.

It was pointed out in the stakeholder interviews that some of the stakeholders have similar processes going on in the field of competence development, e.g. Finnish Scouts work currently for the better opportunities to recognise the non-formal learning and experience gained in NGO activities. These features have increased public interest in the government-led development projects such as ComLeap that could provide a platform to recognise many kinds of learning in future.

3.1.3. ComLeap key outcomes make visible the potential of the national educational data resources

One of the greatest results of the ComLeap project is the way it makes visible the potential built into the national education data resources and ways to manage them. The digital, competence-based learner services illustrated in the prototype are a kind of advanced product in which the national education data resources play a primary production role. ComLeap development work makes visible the possibility of competence-based and learner-centred digital services aimed for individual citizens and counselling staff. Furthermore, this applies to the countries that have centralised data resources or equivalent ways of collecting and validating data on citizens' learning paths from different sources. In the light of the project's key outcomes, Finland serves as an example of a country that has valid data resources for these kinds of services. This is a clear asset for the sustainability of the project results. The wider reforms – technical, thinking-related and practical – require illustration of the opportunities available.

This also means current barriers for the future potential of the key results, as the state of the education data resources varies a lot across EU countries. The evaluation material shows that the project actors have recognised these challenges in a respectable manner over the course of the project and documented them accordingly for future purposes. In addition, current national regulation does not fully support the creation of the services designed and illustrated in the ComLeap project. This is visible in the Finnish case described in the Sustainability Plan. The evaluation material shows that these barriers are well recognised among the key project actors, which is a clear asset for the sustainability and potential impact of the ComLeap key outcomes. Furthermore, FINEEC evaluators see that this creates a good basis to seek for solutions in the future.

Based on the interviews, there are somewhat varying interpretations among the project actors about whether the developed framework architecture sufficiently takes into account the other countries outside of Finland.

In the light of the interviews and other evaluation material, there are a couple of possible reasons for these varying views, as follows:

First, other actors besides actual developers of the framework architecture and prototypes may not always recognise the difference between them and their intended outcomes as part of the CompLeap project. Second, as stated in the original project goals, the framework architecture was supposed to be tailored in a way that is usable across Europe. Based on the interviews, this goal has been reached. In addition, the framework architecture has been presented and discussed in workshops in the Netherlands, Germany, Estonia and Croatia (an online workshop). However, in the light of the evaluation material, it has not led to concrete local solutions that would advance the framework architecture developed. The project has not had associate partners for piloting in the Netherlands. Thus, the outcome of the workshops has primarily been the creation of the awareness of the CompLeap key outcomes among countries across Europe.

Third, the different stages of joining the project have had an impact on the understanding of the project goals and activities. The interviews show that the parties that joined later have had somewhat different expectations as well as experiences of the completion of the key outcomes. The end users in the field of Finnish VET providers are not fully satisfied with the project outcomes, as they expected to have a more advanced service to pilot and use with real customers belonging to the target groups such as NEETs and immigrants. On the other hand, it is positive that the end users involved in the piloting are committed to using such services when they reach their full potential among the real-life customers seeking the educational opportunities.

Fourth, interviews show that the international dimension of the project has not fully reached the field actors involved in piloting in Finland. The associate partners are primarily Finnish, along with one partner from Germany. The piloting of the framework architecture in the Netherlands has not been possible during the project. The reasons for this relate to the factors handled in detail in section 2.1.3., in the parts regarding the allocations of the funds and challenges found in the original division of workload into the work packages. All these features together have led to the situation where the field actors involved in the pilots have not had operational connections with the Dutch project partner DUO. In the light of the reasons presented above, this is understandable, but at the same time a factor that may have weakened the achievement of the goals set for the project.

3.1.4. Approach towards the specified target groups of the project

Interviews show that the target-group approach has been somewhat challenging in the project implementation. The target groups identified from the project documentation are the following: immigrants, youth not in education, employment or training (NEET) as well as working-life professionals seeking a new career. Interviews show that the key project actors are well-aware of the needs of these groups. In addition, some practical choices – such as design of the user scenarios and adding the non-strong authentication to all the prototypes – have supported the immigrant-view in the development work. However, the implementation of the project as a whole does not fully support the inclusion of the key target groups. The piloting survey results (Deliverable 32) show that the actual number of the test users with the immigrant or NEET background is relatively low. In addition, due to the core tasks of the project consortium partners such as Edufi, they also need to consider the wider implications for citizens in any activity carried out. Lacking an

approach towards the original target groups was noted in the Mid-term review by the European Commission, too. However, the FINEEC evaluators understand, that both immigrants and NEETS are challenging target groups to reach, especially when looking for persons outside of education and training.

It was identified from the interviews that the original goal setting of developing digital learner services prototypes does not fully comply with the needs of the specified target groups, whose ability to use digital services independently is often limited, along with the limited language skills. This is one of the notable outcomes of the CompLeap project and should significantly inform possible future development projects among the above-mentioned customer groups in the field of counselling and guidance services.

3.1.5. The adaptation of the learner-centred approach

Evaluation material show that the key project actors understand the concept of learner-centredness and have been able to integrate it to the project implementation. This is evident in the light of the self-evaluation reports, material submitted to the wiki pages as well as practical solutions made in the implementation of the work packages (WP).

For example, the following ways of implementing the project imply the successful adaptation of the learner-centredness:

- The service design expertise has been exploited in the course of the project.
- The learner-centred framework architecture design.
- Part of the project has been a design of the user scenarios as well as user profiles that were used in the prototype development.
- The prototype has been designed around the potential learners and users of the competence-based digital learner services.
- The learners' view has been studied in the desk research.
- The piloting with the test profiles has been conducted among the real students or equivalent groups of potential users.
- The project has conducted a user survey as well as counselling staff research (Deliverable 32) simultaneously with the piloting stage to find out their views on the usability of the CompLeap prototype. The usability view has also been included in the development process of the prototypes.

3.1.6. Piloting stage of the project

The interviews show that the choice of the piloting organisations (Finnish VET providers) has been carried out within a quick timeframe when preparing the original Grant Application for the European Commission, and later on when starting to implement work package 4. From FINEEC point of view, it has been natural to rely on the parties that are both well-known active developers and in general active in the project world. On the project external web pages there has also been an open call for the associate partners. Based on the interviews, the chosen pilot partners as well as associate partners have been committed to the active implementation of the project with much enthusiasm. Interviews and a workshop illustrated the innovative

and committed ways to pilot the prototype service. For example, one of the VET education providers has incorporated the piloting to actual study modules (ICT field) offered for the VET students.

The critical incidents identified from the evaluation material regarding the pilot stage are the following:

First, the piloting has been carried out by Finnish VET institutions in Central Finland (JEC in Jyväskylä), in Lapland (Redu in Rovaniemi) as well as in the Oulu area in North Ostrobothnia (OSAO). Considering the key target groups of the project (such as immigrants), it would have been beneficial to carry out piloting in the capital area cities in Finland, too. Based on the project documentation (Deliverable 32), the number of the immigrant-background and NEET background test users in piloting was relatively low. However, more than half of those with a foreign background in Finland live in the Uusimaa region in Southern Finland. This would obviously offer the greater variety and amount of people belonging to the target groups. The picture 9 presents the numbers of persons with a foreign background living in the different regions of the country (statistics from 2017).

Region	Number of persons with a foreign background
Uusimaa	213,290
Varsinais-Suomi	33,506
Pirkanmaa	24,259
Ostrobotnia	12,681
North Ostrobotnia	11,512
Kymenlaakso	10,588
Päijät-Häme	10,446
Central Finland	9,221
South Karelia	7,977
Satakunta	7,451
Pohjois-Savo	7,234
Kanta-Häme	7,058
North Karelia	6,156
Lapland	5,331
Etelä-Savo	4,737
Åland	4,316
South Ostrobothnia	4,193
Kainuu	2,109
Central Ostrobothnia	2,058

Picture 9: Number of persons with the foreign background living in the different regions in Finland. Statistics present the situation in 2017. Source: Statistics Finland.

Second, the expectations of the counselling and teaching staff involved in the piloting have been somewhat different compared to the original goals set for the project. In the light of the evaluation material, one key challenge in the internal project communication has been to introduce the difference between a service prototype and a fully developed service. The goal set in the project documentation has been to develop prototypes and to pilot them. In the CompLeap case, the service prototype illustrates the potential use of the developed algorithm and is thus a kind of a visualisation of its possibilities. It was pointed out in the interviews

with the counselling and teaching staff that in their view the prototype was not suitable for testing with the most challenging customers in need of counselling and guidance for the choices in VET and further. The counselling staff also saw that the most challenging customers especially require pedagogically and ethically well-designed and considered services, as their situation is often fragile in the field of education, training and employment. The FINEEC evaluators agree on this.

The ethical points of the counselling services were considered also in terms of opportunities and threats brought by artificial intelligence. Algorithms based on artificial intelligence may provide opportunities such as those illustrated in CompLeap prototype services. However, there is also an increased risk of standardising individual choices or manipulating individual choices by prioritised offers from educational institutions. It was also noted in the interviews that state-level initiatives for competence-based digital learner services are seen as beneficial and reliable compared to the market-driven services in the same field. The risk of the market-driven services could be their direct links to the selected education providers, whose offer would be prioritised in an electronic counselling process.

Third, it seems that the counselling view requires more attention in future when further elaborating the key outcomes of the CompLeap project. It was noted in some of the self-evaluation reports and in some interviews that there was not enough consideration in the course of the prototype development. As shown earlier in this report, the actual time left for the prototype development was relatively short, which obviously had an impact on the possibilities of deeply considering different aspects. However, the recognised needs for substantial further development among the project actors and stakeholders create potential for it in future.

There are several existing codes, standards and guidelines on professional study counselling that could be advanced in further elaboration of the CompLeap key outcomes. For instance, The European Lifelong Guidance Policy Network⁶ has produced the *Guidelines for Policies and System Development for Lifelong Guidance*⁷ document, which provides a wide range of data, information and recommendations on the lifelong guidance for the different target groups. The document includes a range of views regarding the fragile target groups – immigrants and NEETs – which were the original target groups of the CompLeap project.

The CompLeap project has conducted the electronic pilot user survey among the pilot users (Edufi, JEC and University of Oulu) and research on piloting counselling staff (University of Oulu). This is an asset and shows active commitment to the learner-centred approach in the implementation of the project. However, as the number of survey answers submitted by September 2019 was not very high, they should be seen as examples, not as a representative sample of the project target groups. The background information of the survey data indicates that vast majority of the test users that replied to the survey were existing students of the piloting education providers.

⁶ <http://www.elgpn.eu/>

⁷ <http://www.elgpn.eu/publications/elgpn-tools-no-6-guidelines-for-policies-and-systems-development-for-lifelong-guidance>

3.1.7. Potential future users of the project's key outcomes

Interviews show that one of the potential user groups of the digital competence-based learner services are the counselling staff of the education providers and higher education institutions. In addition, the interviews show that there are varying opinions among the project actors and stakeholders on the successful implementation of the counselling view. The counselling staff has been one of the defined stakeholder groups, along with their own professional organisation SOPO in Finland. On the other hand, the piloting partners especially believe that the counselling needs and philosophy are not visible enough in the developed prototype. Thus, there is not a fully shared opinion on this matter among the project actors, which might have had an impact on the effective project implementation. It is recommended that the counselling approach be further studied in future to guarantee the adequate use of the competence-based digital learner services among the professional counselling staff in Finland, the Netherlands and other EU countries.

The case of the individual users seems more challenging in the light of the evaluation material. In the interviews the CompLeap prototype is seen as a tool that requires individual users to have:

- 1) advanced language skills
- 2) at least some IT skills

In the light of the user survey results, the reach of some key target groups (such as immigrants and NEETs) set for the project has seen remarkable success in piloting the prototype. Thus, there is not yet reliable information available of their user experience on the service prototype. It is known that these user groups have evident limitations in both language skills and IT skills. However, as the target set for the project was to develop a prototype of the digital service, it is merely a policy-driven future question whether such services are aimed for the individual users or for the counselling staff working with these customer groups. This question appears e.g. in the field of learner services and educational opportunities. It was pointed out in the interviews with the German stakeholders that immigrants as a user group might require a wider language selection to be able to benefit from the digital learner services. The national languages along with English do not fully comply with their current needs. The Sustainability Plan states that in the future the targeted languages supported by the Studyinfo services portal in Finland are Finnish, Swedish and English.

3.2. CompLeap key outcomes and their capacity to be integrated into the national and international education and counselling systems

This section presents views of the integration capacity built into the project's key outcomes along with their future potential and sustainability.

The evaluation questions guiding this section have been the following:

- How and to what extent could the CompLeap services be integrated into the digital learner services nationally and internationally, reflected against the goals set for the project?
- What is the potential impact and sustainability of the CompLeap project as a whole?

Key Findings

- **The completion of the international dimension of the CompLeap project is still relatively low, in terms of concrete outcomes linked to the framework architecture and a developed services prototype.** Experiences on the national use and integration capacity of the architecture are limited to Finland. However, the Finnish case highlights well the opportunities built into the framework architecture and competence-based digital learner services.
- **The deployment workshops held in the Netherlands, Germany, Estonia and Croatia are seeds that carry potential for further impacts and effects if the key project outcomes are advanced adequately in these countries to make local solutions of them.**
- **The project actors show a good capacity to collect and analyse data and information on the possibilities of integrating the CompLeap key outcomes into the existing services nationally and internationally. This is evident in the Europass Case Study and the Sustainability Plan (Deliverable 23).**
- **The national education data resources and their management should be perceived as a primary product that make advanced digital learner services possible. Countries across the EU should address the development of national data resources⁸ as one of the future priorities in the field of education infrastructure development.** They are a precondition for the possible shared framework architectures along with the competence-based digital learner services for the transnational audience.
- **National decision-making plays a key role in the digital learner services that advance the national data resources on education jointly. The EU should create incentives for the voluntary cross-country cooperation in this field.**
- **The Sustainability Plan of the project include a concise review on the ways to integrate CompLeap key outcomes into the Finnish Studyinfo.fi services portal. In addition, the extension to the wider selection of education levels is illustrated in the Finnish context.**
- **Ensuring an actual international dimension in EU-funded projects requires clear financial investments in the attendance of the project's key activities in all the consortium countries. In addition, in the projects where the associate partners are needed for the piloting purposes, their availability in the target countries should be ensured in advance.**
- **More interaction and concrete actions are required both nationally and on the EU level between the education and employment sectors in the development of digital services for the learners, professional counselling staff as well as job-seekers.** The role of the newly established European Labour Authority should be studied and considered in this matter, as the Authority brings together national actors and facilitates their cooperation.

⁸ National data resources should be understood in a wide sense, covering fully centralized resources like KOSKI in Finland, and other ways to manage and validate nationally data on education.

- **Thinking about the future potential of the ComLeap key outcomes, the Europass or other similar systems could benefit from their in-built connections to the national education databases.**

3.2.1 Completion of the international dimension

The evaluation material as a whole shows that completion of the concrete international dimension is still relatively low in the light of the project's key outcomes. As there has been only one partner outside of Finland in the project consortium, the concrete investment in the international dimension in terms of funds and workload has not been very high. The Dutch partner DUO has been in charge of communications and dissemination practises, as well as contributed to the Europass case study that was conducted as part of the project.

As stated in earlier in this report, the original division into the work packages and workloads is noted to be challenging in the self-evaluation reports. Thus, this is at least partially the reason behind the lack of concrete outcomes outside of Finland regarding the framework architecture tailoring and piloting the prototype. It was also noted in the interviews of the key project actors that more study of the Dutch state of affairs would have been beneficial in the beginning of the project and might have advanced the achievement of the goals set for the project. It was also noted that there were no resources allocated for this kind of activity in the project budget.

The concrete outcomes of the international dimension, identified from the evaluation material, are the following:

- The Dutch partner DUO has attended to the work of the Steering Group and the Project Management Committee, and therefore contributed to the decision-making and implementation at the project level. The Steering Committee interview indicates good cooperation between the project partner representatives.
- Deployment workshops have been carried out in the Netherlands, Germany, Estonia and Croatia (an online workshop).
- The Desk Research (Deliverable 15) conducted as part of the project includes views to the existing relevant services in Finland, the Netherlands, Germany and the EU as a whole. However, the evaluation material did not offer a clear view of the use of the Desk Research in the implementation of the project. A summary and analysis could serve the other actors after the end of the project.
- The project has conducted the Europass case study, following the recommendation of the Mid-term review. The study describes the state of affairs of both ComLeap and Europass, as well as illustrates the possible connections between them.

However, the concrete outcomes presented above can be seen as seeds that carry potential for the wider impacts and effects if advanced adequately in the Netherlands and other EU countries. The project impact in the countries outside of Finland is still sporadic compared to the Finland, where a large number of

stakeholders have been involved in the project at different stages. Furthermore, the concrete development of the prototypes is based on the Finnish education data resources and education system. It was evident in the interviews that different national education systems create one of the challenges to the services illustrated in the CompLeap prototype, especially for their possible transnational use.

As a lesson for future projects, it is evident that ensuring the actual international dimension in the EU-funded projects requires clear financial investments in attendance at the project's key activities. The evident threshold in the CompLeap case has been the original division of the work packages as well as allocation of the funding. In addition, in the projects where the associate partners are needed for the piloting purposes, their availability in the target countries would in the optimal case be ensured in advance.

3.2.2. Role of national decision-making and national data resources

The Sustainability Plan produced as part of the project handles the role of national decision-making in the development of the competence-based digital learner services. It is noted that the EU does not have a mandate that would make use of the same framework architecture mandatory for all the EU countries. In addition, in the field of education the EU-level steering and regulation is relatively low and much is left for national decision-makers. Thus, so far decisions on the possible competence-based learner-services as well as framework architecture around them are made nationally. In the current light it seems unrealistic to assume that the level of EU steering and regulation on the education would notably increase.

The evaluation material also shows that the state of national data resources on education varies a lot across EU countries. This is one of the key lessons made visible by the CompLeap project and could benefit the other projects or equivalent development processes in the field, too. Furthermore, the national data resources should be perceived as primary products that make possible the advanced products such as the CompLeap service prototype. Incentives are needed for voluntary cross-country cooperation in this field. The EU could be active in creating them in the sectors of education, employment, mobility, youth affairs and social inclusion.

The data protection issues create a crucial framework for the possible transnational use of national data resources on education and competences. Based on the interviews and written project materials, the project's key actors are well-aware of these features and their impact on the project operations as well as future use of the project outcomes.

3.2.4. Parallel processes to the CompLeap key outcomes

The interviews and the Sustainability Plan indicate that there are several parallel processes going on in the field of digital learner services and digital services for job seekers. In the Finnish case, the most often named example is the Työmarkkinatori services portal established by the Finnish Ministry of Economic Affairs and Employment in Finland. The separate services in the fields of education and labour market were commonly seen as problematic in the stakeholder interviews.

The level of EU regulation and steering varies a lot among the different sectors. As education is largely handled in the sphere of national decision-making, the situation with employment affairs is somewhat different. As a recent activity, the European Labour Authority started its operation in autumn 2019.⁹ The Authority brings national authorities together and shall facilitate the cooperation between the EU Member State representatives, as well as social partners. The Management Board of the Authority consists of representatives of Member States, the Commission, EU-level social partners, European Parliament, as well as observers from Iceland, Liechtenstein, Norway, Switzerland and other EU Agencies in the field of employment and social affairs. If the EU-level actor is needed to promote national data resources on education, employment and recognition of the relevant non-formal learning, shared framework architectures on learner and job-seeker services, digital services in the above-mentioned fields, the recently established Authority along with the EU parties in education could be one opportunity. Furthermore, it could promote voluntary cross-country cooperation in these issues.

As a summary, more interaction and concrete actions are required both nationally and on the EU level between the education and employment sectors. Increased cooperation would benefit the policy goals set for the CompLeap project.

The Sustainability Plan demonstrates the technical and other details that could enable the integration of the algorithm developed in CompLeap for the Finnish Studyinfo.fi services portal. This analysis shows project actors' commitment to the future use of the project's key outcomes in Finland.

One of the future needs in the Finnish context is to integrate a wider selection of the existing education data into the CompLeap key outcomes. The Sustainability Plan demonstrates the following summary on this:

- Getting study records from KOSKI¹⁰ is easy for all levels of education.
- Getting descriptions of studies needed for recommendation algorithm; might be quite laborious for universities but easy for basic and upper secondary education.
- Adding academic universities to recommended study offering is straightforward.
- Adding upper secondary schools in recommendations poses some challenges but is achievable.

As noted, the project has conducted the Europass Case Study to find opportunities for cooperation with the Europass System. The study process included a workshop with the Europass actors that is in line with the interactive working practice applied to the CompLeap project. Europass is currently undergoing a major renewal.¹¹ The new Europass will include following functions:

- The Europass e-Portfolio: an online tool for users to describe their skills, find interesting job and learning opportunities, manage their applications, and create CVs and cover letters.
- Information on working and studying in different EU countries.

⁹ See the press release at https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6063

¹⁰ Finnish KOSKI data resource include information on the basic education, upper secondary education as well as vocational education and training. See <https://www.oph.fi/fi/palvelut/koski-tietovaranto> (in Finnish).

¹¹ On the new Europass, see <https://ec.europa.eu/futurium/en/europass/new-europass>

- Digital credentials: free tools and software for institutions to issue digital, tamper-proof qualifications and other learning credentials.
- Interoperability: Europass can connect with employment and learning services to allow users to connect and make applications.

The Europass Case Study states that Europass and ComLeap share the following aims:

- Enable individuals to display their competence throughout the lifespan.
- Support individuals in developing their career by defining their interests, goals and aspirations and keeping track of their progress from a lifelong learning perspective.
- Provide individuals with suitable, personalized learning and job opportunities based on their personal profile, aspirations and preferences. Enables individuals to gain new skills.
- Help individuals be reflective, support their personal development, allow them to showcase their skills, qualifications and experience, and enable (self-) assessment of their skills.

The Europass Case Study shows detailed analysis of the different aspects of possible connections between these two systems. One of the key differences identified is the level of action: ComLeap operates currently on the national level and Europass on the EU level. The Case Study states that Europass could benefit from the algorithm ComLeap is using in the interests' section and in that way offer international education (and job) offerings.

Thinking about the future potential of the ComLeap key outcomes, the Europass or other similar system could benefit of their in-built connections to the national education databases.

3.3. Communications and stakeholder relations

This section illustrates the strengths and weaknesses of the ComLeap project's communications and stakeholder relations, starting from the beginning of the implementation period. In addition, it presents good practices identified from the evaluation material.

The evaluation questions guiding this section have been the following:

- How and to what extent have the chosen communications practices supported the achievement of the objectives set for the project?
- How and to what extent have the chosen stakeholder practices supported the achievement of the objectives set for the project?
- What kinds of outcomes have ComLeap communications and stakeholder relations produced?
- What kinds of impacts have ComLeap communications and stakeholder relations produced?
- What kinds of effects have ComLeap communications and stakeholder relations produced?
- What kinds of good practices can be identified within the communications of the ComLeap project? What kinds of good practices can be identified within the stakeholder relations of the ComLeap project?

Key Findings

- Stakeholders have been widely included in the design and implementation of the CompLeap project. In general, stakeholders are satisfied with their opportunities to join the project. The stakeholder issues have been approached in an ambitious manner in the CompLeap project.
- There are several concrete outcomes of the communications and stakeholder work in the project, such as stakeholder events, webinars, external web pages and marketing videos (animations).
- The management of the expectations among the key project actors and stakeholders is essential for a project such as CompLeap. This should be carefully addressed in similar future projects to avoid the gaps between the goals, expectations and key outcomes of the projects.
- **Good practises:**
 - 1.) Demo sessions
 - 2.) Stakeholder webinars
 - 3.) Marketing videos (animations) and printed marketing material
 - 4.) External CompLeap web pages

3.3.1. Stakeholder relations at the project level

The Evaluation material as a whole shows that stakeholder relations has been one of the priorities in the project implementation. The project has had a Communications and dissemination plan (Deliverable 34) that defines the stakeholder groups approached. The FINEEC evaluators consider the list very extensive. It shows an ambitious approach to stakeholder issues.

In the light of the evaluation material, the full list of the stakeholders concretely reached in the project network is extensive and includes state authorities, policy-makers, labour market NGOs, education providers, higher education institutions, other NGOs such as Finnish Scouts, counselling staff association SOPO as well as existing networks in the field of education, counselling and digital services in Finland and the EU area.

Interviews show that the stakeholders have been widely included in the design and implementation of the CompLeap project. In general, stakeholders seem to be satisfied with their opportunities to join the project. Interviews also show that some of the stakeholders in Finland have followed the project since the application stage. This is a clear asset, also for the possible future use of the key project outcomes.

The concrete outcomes of the communications and stakeholder relations identified from the evaluation material are the following:

- Creation of the project identity such as an easily recognisable visual outlook and inclusive external communications practices (such as webinars).
- Two project-level seminars arranged for a wider audience (see table below).
- The creation of an extensive and committed stakeholder network for the project, by actively attending to other existing networks as well as communicating about the project goals and activities going on.
- A range of webinars and demo sessions arranged for the active project actors and followers in the course of the design and development of the key project outcomes (framework architecture, prototypes).
- A range of workshops (in Finland and Germany) arranged for the partners and associate partners involved in the piloting, including a kick-of meeting for the piloting parties.
- External web pages of the CompLeap project along with the key information on the project background, actors, activities, events and results.
- Project documentation on the public wiki pages.
- Printed marketing material.
- Audiovisual marketing and communications material (animations).

As shown, the project has emphasised external communications in many ways. The set of communications practices is extensive, which can be seen as one of the factors advancing the achievement of the project goals. The outlook of the project is professional and stakeholder-oriented. The project has evidently emphasised stakeholder events, such as webinars and demo sessions, as an on-going and integral practice in the project implementation.

The CompLeap project has arranged the following three seminars in the course of the project for the wider stakeholder audience:

Event	Number of participants
Kick-off seminar, 9 th April 2018, in Helsinki	30-50 including speakers and online participants
Mid-term review seminar, 4 th Dec 2018, in Helsinki	73 incl. speakers and online participants
Final Seminar, 14 th Oct 2019, in Helsinki	97 incl. the speakers and online participants

The numbers of participants is considered high by the FINEEC evaluators and they indicate a wide interest among the stakeholders, especially the Finnish ones. This is one the features creating future potential for the project’s key outcomes. However, as the most active external stakeholders remain mainly in Finland, this impact is somewhat limited when considering the goals set for the project.

The project wiki pages present a wide selection of the events which the CompLeap actors attended to deploy and market the project and its key results in the EU area. The number of events attended is in line with the

project timeline and resources available for the project coordination, management, communications as well as stakeholder relations.

3.3.2. Management of expectations among the project actors and stakeholders

It was pointed out in the self-evaluation reports that the management of expectations set for the project has been a challenge for effective project implementation. As explained in section 2.1.1 of this report, the actual number of the project actors has been relatively high. In addition, the chosen strategy has been to include a wide selection of stakeholders in the project network. Although these features carry many positive aims and effects, it has also led to some unintended results in the form of very high expectations set for the two-year project.

Interviews show that end user representatives who attended the pilot stage are not fully satisfied with the prototype and its piloting potential. Naturally, this gap between the project targets, outcomes and expectations does not support the effective implementation of the project. On the other hand, the varying expectations are also understandable as the number of actors is high.

Furthermore, the key substance (framework architecture design, design of the algorithm, design of the service prototypes that advance the national data resources on education) of the ComLeap development work is a relatively challenging topic to introduce in a simple package. In future, projects such as ComLeap should emphasise the clear and on-going internal communications of the key goals set for the project, as well as clarify the key concepts belonging to of the project.

4. CONCLUSIONS AND RECOMMENDATIONS

This section summarises the key conclusions that cover all the evaluation areas approached in the external evaluation carried out by FINEEC. The good practices presented in sections 2 and 3 are also collected in this section. Furthermore, it provides a set of recommendations to be considered by policy-makers, other state-level actors, stakeholders as well as parties seeking and implementing EU-financed projects in Finland, the Netherlands and other EU countries.

4.1. CONCLUSIONS

- **The concrete key goals set for the ComLeap project were completed in the course of the project. First, the framework architecture was designed in cooperation with the various Finnish, Dutch and German stakeholders. It is designed in a way that makes possible to tailor across Europe, as expected. Second, the prototypes of the service (incl. algorithm) were designed and developed to illustrate the potential built into the designed architecture and use of the national education data resources.**

- The CompLeap project has made visible the capacity built into the national education data resources and their management. They serve as primary products that make possible the solutions visualised in the CompLeap prototype. One of the greatest impacts of the entire project is the active boost of competence-based learner services among the several stakeholder groups. This has also created future potential for the key outcomes of the CompLeap. However, as the most diverse and active stakeholder selection remains in Finland, this impact is to some extent still limited to Finland. In the Netherlands, Germany and other EU countries the impact is more sporadic, covering the active project actors and their background organisations.
- The overall impact of the project is strongest in Finland, where the wide selection of stakeholders has joined the project activities or followed the project progress. Equally, the service prototype developed in the project is based on Finnish data resources and education system.
- National decision-making plays a key role in further adaptation of the CompLeap key outcomes. In addition, the EU-level decision-making may play some role, in cases such as the Europass system. However, in the field of education the level of EU regulation and guidance is relatively low and much is left to national decision-makers. The data protection issues create a crucial framework for the possible transnational use of the project's key outcomes.
- Professional counselling staff plays a key role in any future embedding of the project's key outcomes at the level of education providers and higher education institutions. Their role is essential when considering the counselling and guidance needs of the CompLeap key target groups, immigrants and NEETs.
- An ethical perspective on the counselling services and practices should be considered when further elaborating the framework architecture and service prototype (incl. algorithm) developed in the CompLeap project.
- The challenges in the following steps of the project preparation and implementation has decreased its capacity to fully reach the goals set for it: too tightly scheduled preparation of the Grant Application; delayed funding decision by the European Commission; need to refocus the project in the beginning of the implementation period due to the relatively general level target setting in the original Grant Application; challenges finding suitable experts for the project purposes in the course of the first implementation year.

4.2. GOOD PRACTISES

- Weekly meetings of the Project Management Committee as part of the project management.
- Webinars for the project's key actors, such as those arranged for users of the prototype within the project.
- Majority of the project documentation as public wiki pages.
- An active involvement of the associate partners in the project.
- Demo sessions for the project actors and active followers of the project.

- Marketing videos and printed marketing material.
- External ComLeap web pages.

4.3. RECOMMENDATIONS

- **The ownership of the key outcomes, such as framework architecture, services prototypes (incl. algorithm) as well as stakeholder networks built around the ComLeap project should be considered carefully and soon among the ministry-level actors, CSC, Finnish National Board of the Education, DUO as well as the end users in the field of education.** The evaluation shows that the ComLeap project has succeeded in creating widespread interest in competence-based digital learner services among the stakeholders in Finland, Germany, Estonia and the EU as a whole. To maintain this future-oriented approach, it is necessary to design and implement rather soon the required actions for integrating the usable parts of the outcomes in existing Finnish services, such as Studyinfo in Finland. This need is adequately analysed in the Sustainability Plan prepared by the project actors, too.
- **The connection with the labour market needs and digital services requires more research, as there are parallel processes going on in this field (such as the Työmarkkinatori services portal developed by the Ministry of Economic Affairs and Employment of Finland). The role of the newly established European Labour Authority should be studied and considered in this matter, as the Authority brings together national actors and facilitates their cooperation.** The evaluation shows that stakeholders in Finland and in other EU countries recognise many parallel processes to the key outcomes of the ComLeap project. One of the key connections identified is a labour market and related services supporting competence development.
- **The countries involved in the ComLeap project should integrate the key outcomes of the ComLeap project into existing or upcoming policy-level national reforms in the field of continuous learning.** The evaluation shows that the key outcomes are both promising examples of the potential built into the digital learner services advancing the national data resources on education and competences. In Finland, the Government has launched The Parliamentary Reform of Continuous Learning (21.8.2019-31.12.2020) led by the Ministry of Education and Culture. The key outcomes of the ComLeap project should be considered as part of this reform.
- **As one of the greatest impacts of the ComLeap project is high-level awareness of the opportunities provided by the national education data resources and their use in the digital, competence-based learner services, maintaining this boost is something to be suggested to state-level actors in Finland, the Netherlands, Germany and Estonia.** The evaluation shows that ComLeap has succeed in creating increased interest and higher awareness of its key outcomes and the potential built into them. The impact is most visible in Finland, where the key stakeholders are well-aware of the work process and outcomes of the ComLeap project. Outside of Finland the impact is still more sporadic, limited to the key actors of the project. However, in the other countries involved this also offers a good opportunity for future national initiatives and practical solutions.

- **The counselling staff at the VET institutions, higher education institutions and in the field of the services provided for job-seekers are a potential high-profile user group of the competence-based digital services illustrated in CompLeap prototypes. The counselling approach to competence-based digital learner services should be explored more in future.** The evaluation shows that although the counselling staff has been one of the key stakeholder groups, the concrete counselling approach is not yet very advanced in the framework architecture or prototypes. In addition, many actors interviewed noted that some key user groups – such as immigrants and youth outside of education and employment – would benefit most from the competence-based digital services when guided by counselling staff.
- **The counselling and guidance of the immigrant-background customers, as with the NEETs, cannot rely on digital learner services alone. These customer groups can benefit from the services illustrated in the CompLeap prototype as a part of the guidance provided by professional counselling staff. As the individual use of the digital services requires at least some IT skills and, in many cases, advanced language skills, the potential of the individual use is limited in the case of the above-mentioned customer groups.** The evaluation shows that counselling staff see potential in services such as CompLeap prototype or equivalent services relying on the algorithm developed. As the full potential of these kinds of counselling tools is not visible yet, one of the future paths to explore could be the strengthening of the counselling approach and testing its use among the most challenging customer groups in Finland, the Netherlands, Germany and other EU countries.
- **The CompLeap prototype, its advanced version or other equivalent electronic services advancing the same algorithm should be tested within a larger group of users.** The evaluation shows that the actual time for the piloting was relatively short. Furthermore, the evaluation also shows that due to the challenges with the schedule and finding the representatives of the original target groups, the piloting has primarily happened among the existing students of the Finnish VET providers. To reach a wider group of potential users, it is recommended to test the above-mentioned services in the Finnish capital area. The open source nature of the developed algorithm supports its deployment within a low threshold.
- **It is recommended that CSC along with the ministries responsible for education both in Finland and the Netherlands create a procedure for the follow-up of CompLeap's long-term impacts and effects.** As stated in the project documentation, the long-term impacts and effects of the project cannot be measured nor fully identified right after the end of the project. However, as shown in this external evaluation, project actors as well as many stakeholders recognise much potential in the project's key outcomes. The follow-up procedure could include the following steps and actions, among others: 1) a concise set of follow up indicators (such as users of the developed algorithm across EU countries), 2) review of the digital competence-based learner services (at least) in Finland and the Netherlands reflected against the key outcomes and lessons learned from CompLeap, 3) analysis of the state of the regulative sphere having an impact on digital learner services that advance the national and international education data resources.
- **There is a need to further explore the ethical issues related to the digital services illustrated in the CompLeap prototype.** Counselling and study guidance are a sensitive process that combines professional expertise of the counselling staff as well as the information and knowledge available of educational opportunities with the competences, aims and personal skills of the individuals.

Technically, artificial intelligence can provide selected views for the suitable next steps for individuals looking for education and training. However, the potential challenge is its dependence on statistical probabilities. National and transnational education systems along with the counselling built into them should not lead to standardised learning paths that do not leave space for individual choice and diversity.

- **In future, the state-level actors such as ministries should pay extra attention to the timing of policy-driven project initiatives and avoid, whenever possible, overly tight schedules left for the operative parties that implement the policy lines.** The evaluation shows that the preparation time for the original Grant Application was relatively short. This had an impact on the project actors' de facto ability to implement the project goals in an effective manner in the beginning of the project.
- **As with state-level actors, the European Commission should also pay more attention to customer-oriented and timely application processes of the project funding.** The evaluation shows that delayed funding decisions or other procedural misconduct may have a negative impact on the start of the project implementation and the project actors' de facto ability to implement project goals as expected.
- **The realistic goal-setting as well as management of expectations seem essential for extensive, policy-driven and international projects such as CompLeap.** Future fund seekers as well as project actors should pay attention to these factors. The evaluation shows the challenges caused by the very high goal-setting, extensive stakeholder network as well as divergence of goals among key project actors.
- **The organisations interested in projects such as CompLeap in future should make sure in advance that they are able to fulfill the required key staffing needs adequately from the very beginning of the project.** The evaluation shows that some of the challenges in the start of the CompLeap project were caused by the lack of adequate staff resources among the project consortium partners.
- **The operative actors of similar projects in future should emphasise the internal communication of the key goals set for the project over the course of the project.** The evaluation shows that one of the main challenges in the cooperation between the CompLeap project partners has been up-to-date, on-going and clear communication about the goals set for the project, especially in the case of the piloting parties who joined the project at the later stage.