

TEMPLATE

Output factsheet: Tools

Version 1

Project index number and acronym	CE 1569 - ProsperAMnet
Lead partner	University of Applied Sciences Upper Austria
Output number and title	O.T2.1 - Service Export Radar
Responsible partner (PP name and number)	University of Szeged - PP 9
Project website	www.interreg-central.eu/prosperamnet http://prosperamnet.eu/
Delivery date	09.2021

Summary description of the key features of the tool (developed and/or implemented)

The Service Export Radar aims at facilitating the decision-making process regarding the export of industrial services for advanced manufacturers by offering relevant market information with the help of artificial intelligence algorithms. The radar contains two major functionalities, on the one hand the tool investigates databases via exemplary companies and keyword search, to reduce market research efforts to search for potential partners to cooperate with, potential customers to sell to and existing competitors in the target market (Austria, Czech Republic, France, Germany, Hungary, Italy, Slovakia, Slovenia, United Kingdom and the United States). On the other hand, artificial intelligence algorithms investigate company webpages regarding the industrial service offerings and provides an estimated probability with which confidence level the algorithm is sure that certain industrial services are promoted on the webpage. The results can support advanced manufacturers within exporting industrial services successfully.

In the developed tool the artificial intelligent algorithm imitates the role of a human scanning company webpages regarding the industrial service offerings. The algorithm predicts probabilities with what the respective service is mentioned on the webpage of the company and therefore offered to customers.

The tool is provided as an online tool at the 'Service Performance and Service Export Platform' (www.prosperamnet.eu) and can be used free of charge - only a simple registration process is required - by interested advanced manufacturers, but also from chambers of commerce and business support organizations. Business support organizations that are involved in the project have been trained regarding the usage of the radar, they are in charge of promoting the radar and are also the first point of contact for companies when they use the radar.

Max. 2.000 characters

NUTS region(s) where the tool has been developed and/or implemented (relevant NUTS level)

The tool has been mainly developed in the WP T2 team. The team got together in an online mode (Skype or MS teams) on a weekly/biweekly basis to elaborate the development of the Service Export Radar. The technical programming of the artificial intelligence was done primarily at the University of Szeged (PP 9), whereas the domain knowledge on services was contributed by the FHOÖ (LP) and University of Passau (PP2). The WP T2 team was rounded up by practical knowledge regarding advanced manufacturers of Business Upper Austria (PP 6). The tool is used and has been tested by all PP, therefore each involved CE-country resp. NUTS region was included:

AT314 Steyr-Kirchdorf; AT312 Linz-Wels
DE222 Passau, Kreisfreie Stadt; DED2C Bautzen
HU211 Fejér; HU333 Csongrád
SI021 Osrednjeslovenska
CZ031 Jihočeský kraj
ITH42 Udine
SK010 Bratislavský kraj

Max. 500 characters

Expected impact and benefits of the tool for the concerned territories and target groups

The Service Export Radar can provide an approximate summary of the service landscape of some geographic regions based on the automated analysis of company websites at scale. This information can help companies in planning their strategies on new target markets to export their services for. Further, it allows policy makers to compare regions and detect opportunities to improve their regulatory to foster service export. Especially SME benefit from the free-of-charge available online tool, as usually their budget is limited in the time and effort consuming process of market research. Business support organizations benefit from this tool, as they support advanced manufacturers in their exporting activities, and BSOs miss tools to get knowledge in the service situation in export markets. Business support organizations support advanced manufacturers and give policy makers in their region advice and recommendations for strategic actions regarding service export and artificial intelligence.

Max. 1.000 characters

Sustainability of the tool and its transferability to other territories and stakeholders

The tool "Service Export Radar" will stay online available and the server hosting it is going to be maintained 5 years after the project ends. Further, the modular build of the tool allows an easy expandability to other territories or other languages. In terms of the radar, which provides information with the help of Artificial Intelligence, the outputs will be continuous updated as it uses always current company webpages that are analyzed. The biggest factor in terms of sustainability of the Radar is the fact that the BSOs that involved in the project have been trained on how to use and interpret the radar results, and they now act as service expert hubs in their regions, providing companies with expert knowledge on service export and the use of radar.

Max. 1000 characters

Lessons learned from the development/implementation process of the tool and added value of transnational cooperation

During the development of the tool, a variety of AI approaches has been experimented with and we have gained substantial experience regarding the benefits and downsides of each approach. Among the various techniques implemented, there were classical algorithms relying on vector space models (using both unigrams and higher n-grams), which had the benefit of being computationally less intense, but more prone to data sparsity issues. More current approaches utilizing distributed word representations, as well as deep learning techniques have also been experimented with. These latter approaches are more resource intensive, but they can offer an attenuation of data sparsity issues. In the end, we implemented a hybrid solution, which offers a trade-off between the computing need, hence the speed of the algorithm utilized, and its generalization capabilities. As an additional approach, we also experimented with computer vision approaches. The transnational cooperation was decisive as the cooperation united AI technical, scientific and practical knowledge.

Max. 1000 characters

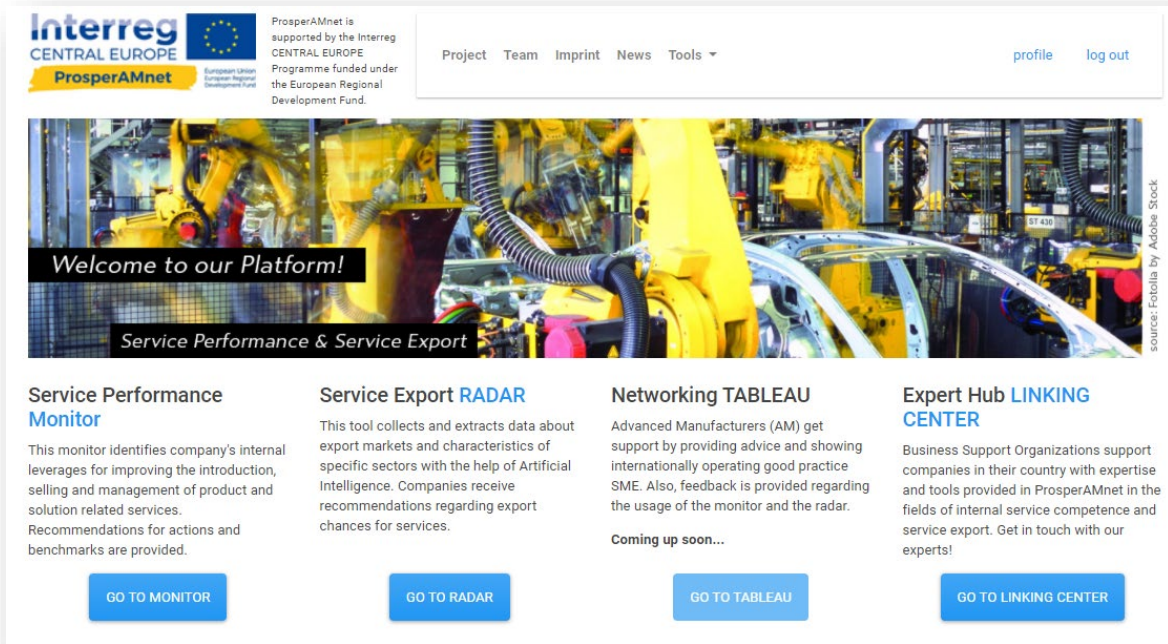
References to relevant deliverables and web-links If applicable, pictures or images to be provided as annex

- The tool “Service Export Radar” is directly linked to O.T2.2 Training of Annotation for the AI Programs, as the collected annotations form the basis for the AI development.
- The fine-grained details of the development of the annotation process can be reviewed in the deliverable D.T2.3.2 Factsheet of AI definition.
- A more detailed description of the techniques (Machine Learning models, Natural Language Processing algorithms,...) used, can be seen in the deliverable D.T2.3.1 AI Programming.
- Further, the tool is integrated in the Service Performance and Service Export Platform (O.T3.1) and the project webpage (D.C.1.1).
- The radar can be used under this link: <https://www.prosperamnet.eu/radar/>

Max. 1.000 characters

ANNEX

1) Screenshot of the online ‘Service Platform’ (www.prosperamnet.eu)



2) Screenshot of the starting page of the radar (www.prosperamnet.eu)

