VTT Technical Research Centre of Finland

Background of the AI maturity tool for the EIT Cross KIC AI activity

Saari, Leila; Ylikerälä, Markus; Siltanen, Pekka

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DigiMaturity

- To discover the maturity and potential development path of **digitalization**

AI maturity

- To discover the maturity and potential development path of applying **artificial intelligence**

ManuMaturity

- To discover the maturity and potential development path of reaching **beyond Industry 4.0**

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Authors: Markus Ylikerälä
                Pekka Siltanen
                Leila Saari

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Report's title	
Background of the AI maturity tool for the EIT Cross KIC AI activity	
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EIT Manufacturing Central gGmbH, Adrian Bablok, Hilpertstrasse 31, 64295 Darmstadt, Germany	
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Summary

The European Institute of Innovation and Technology (EIT) is an EU body set up to strengthen Europe's ability to innovate. Today it is Europe's largest innovation ecosystem with over 2000 partners. The EIT supports the development of dynamic, long-term thematic partnerships Knowledge and Innovation Communities (EIT KICs) among companies, research and higher education institutions, to tackle pressing global challenges. Together with their leading partners across Europe, the EIT Community offers a wide range of innovation and entrepreneurship activities across Europe.

Artificial intelligence (AI) has become an area of strategic importance and a key driver of economic development. As a result, a European initiative was kicked off in Q2, 2019 called "Arficial Intelligence for Europe". A budget allocated of around € 2.5 billion has been earmarked to increase efforts in the key areas of AI in Europe:
- Boost the EU's technological and industrial capacity in AI, up taking it across public and private sectors
- Empower the education system to pre-empt the socio-economic changes that will come with the rise of AI and modernize training and talent management systems that support the labour market and increase the employability of trainees
- Build ethical and legal frameworks to ensure all rights of citizens are protected.

VTT's AI maturity tool was selected as the tool to be shared among several KICs, such as EIT Digital, EIT Health, EIT Manufacturing, EIT Climate KIC and EIT InnoEnergy. During 2021 VTT's AI Maturity tool was translated to Spanish, French, Deutsch, Italian and Polish in addition to the already existing implementation in English and Finnish.

Confidentiality	Public

Oulu 21 February 2022

Written by	**Reviewed by**
Leila Saari	Tuija Rantala
Senior Scientist	Research Team Leader

VTT's contact address
Kaitoväylä 1, 90590 OULU

Distribution (customer and VTT)
The final report will be delivered to achieve as confidential, VTT internal report. The master version is available in Maturity pathways Teams on Technical documentation channel for those, who have access.

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Approval

VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD

Date: 21 February 2022

Signature:

Name: Tuija Rantala

Title: Research Team Leader

Contents

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1. Introduction

VTT has published maturity tools for four themes: Digitalisation, applying Artificial intelligence (AI), reaching beyond Industry 4.0 and ensuring Cyber security. The tools are available in internet for non-commercial use. The maturity assessment will be displayed immediately on the screen when the relevant response options have been selected. The data is saved on VTT database and VTT can contact the respondents and propose a result discussion or further collaboration.

The triplet of VTT's maturity tools - DigiMaturity (Leino et.al 2017), AI maturity (Saari et. al 2019) and ManuMaturity (Saari et. al 2021), were listed among the top 3 in the EC JRC evaluation for EDIH maturity framework (Figure 1).

Figure 1. Gabriel Rissola, Senior Scientist, Digital Economy, EC Joint Research Centre, presented digital maturity assessment framework in EDIH workshop on 18th May 2021. They had analysed 13 existing methods and tools. The triplet of maturity tools: DigiMaturity, AI maturity and ManuMaturity were listed in top 3.

In addition to the basic triplet, VTT has published the Cyber maturity tool and the extension of AI maturity tool for EIT cross KIC AI activity. This extension has few extra questions and is implemented in several European languages, such as: Deutsch, English, Finnish, French, Italian, Polish and Spanish.

Figure 2 lists the commonalities of the maturity tools and Figure 3 the functionalities available for an external visitor willing to complete self-assessment with a maturity tool. First, the respondent must register and confirm his/her email address. Then he/she can fill in the background information and complete the self-assessment by selecting the most reflective response option for each question. After completing the sections, an immediate result graph is displayed (Figure 4). The respondent can save the graph for future purposes.

Tool helps to understand the concept in question and assess **current readiness and performance.**

The immediate **result graph** Illustrates the present state and the potential development needs.

Each maturity tool has **6-7 dimensions and several questions** related to each dimension.

Each question **has 5 alternative response options** (reflecting the maturity levels) from which to choose.

The **maturity levels** are: 0 not existing or irrelevant, 1 Preliminary or identified, 2 Defined, 3 Managed, 4 Excellent.

Open web tool available for non-commercial use in **Finnish and English**.

Figure 2. Commonalities of the maturity tools.

Figure 3. Functionality from the viewpoint of a respondent.

Figure 4. Immediate result graph, sample from Digimaturity.

Figure 5 sketches a potential co-creation pathway between VTT and the respondent's company. First, the respondent completes the self-assessment with a maturity tool. In a result discussion with VTTer usually few preliminary development ideas will arise. It is possible to continue with a maturity workshop or a development project, too.

Figure 5. Potential co-creation pathways.

This report presents the general idea of maturity tools and the instances available. The more detailed documentation (with related questions, Data protection declarations, Terms of use etc.) is available in MS Teams Maturity pathways, channel Technical documentation, see Figure 6.

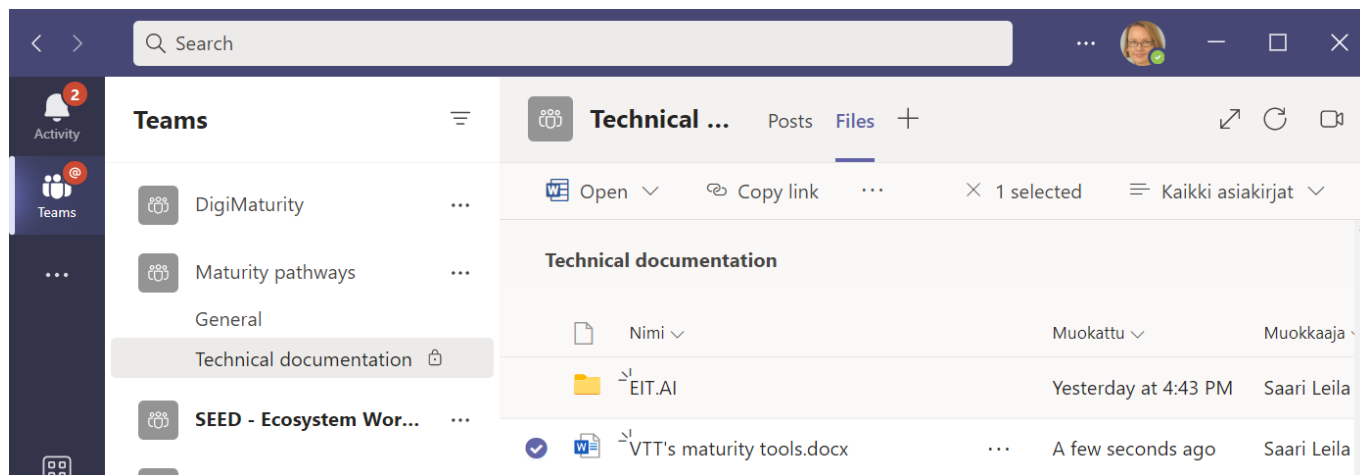*Figure 6. Technical documentation channel of Maturity pathways in VTT's MS Teams.*

2. Five maturity tool instances

There are five open maturity tool instances published by VTT. They are DigiMaturity, AI maturity, ManuMaturity, EIT.AImaturity and CyberMaturity. See Table 2 for the URLs and implemented languages.

Table 1. Open instances of VTT's maturity tools.

Tool	URL	Languages
DigiMaturity	https://digimaturity.vtt.fi/	EN, FI
AI Maturity	https://ai.digimaturity.vtt.fi/	EN, FI
ManuMaturity	https://manumaturity.vtt.fi/	EN, FI
EIT AI maturity	https://eit.aimaturity.vtt.fi/	DE, EN, ES, FI, FR, IT, PL
CyberMaturity	https://cybermaturity.vtt.fi/	EN, FI

Each maturity tool has unique dimensions and questions related to the dimensions. Figure 7, Figure 8 and Figure 9 display the topics of the questions in each maturity tool. Unfortunately, the figure of dimensions in Cyber security still is missing. The detailed questions with response options are available in MS Teams Maturity pathways / Technical documentation, see Figure 6.
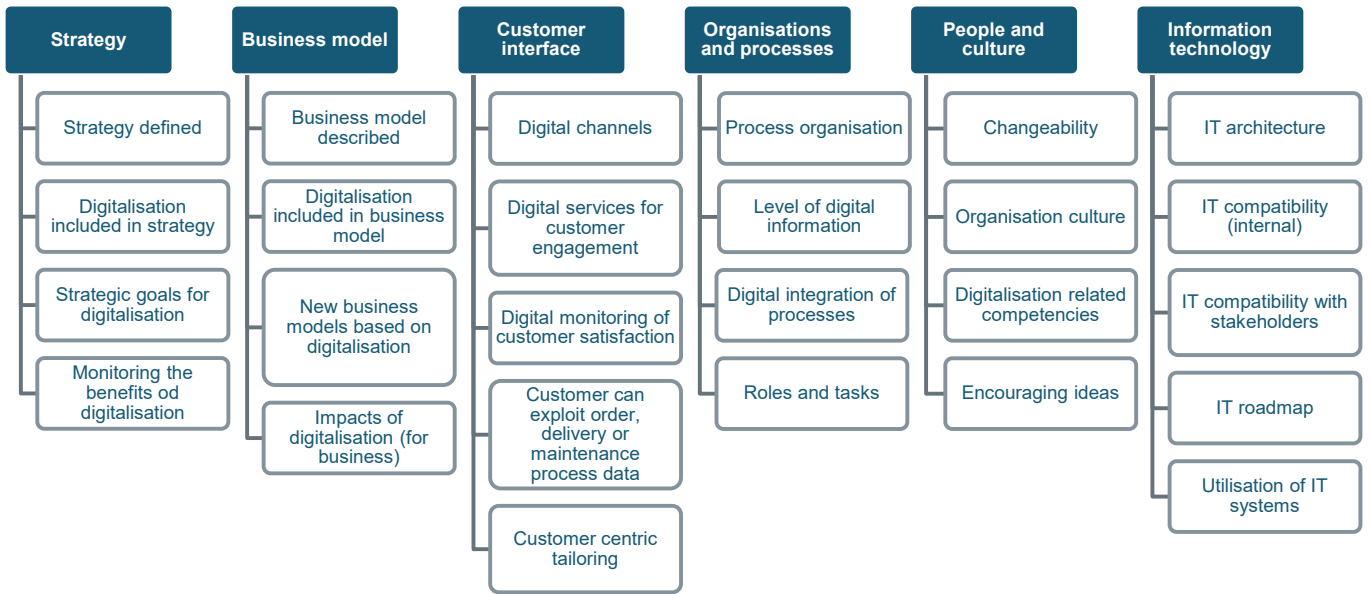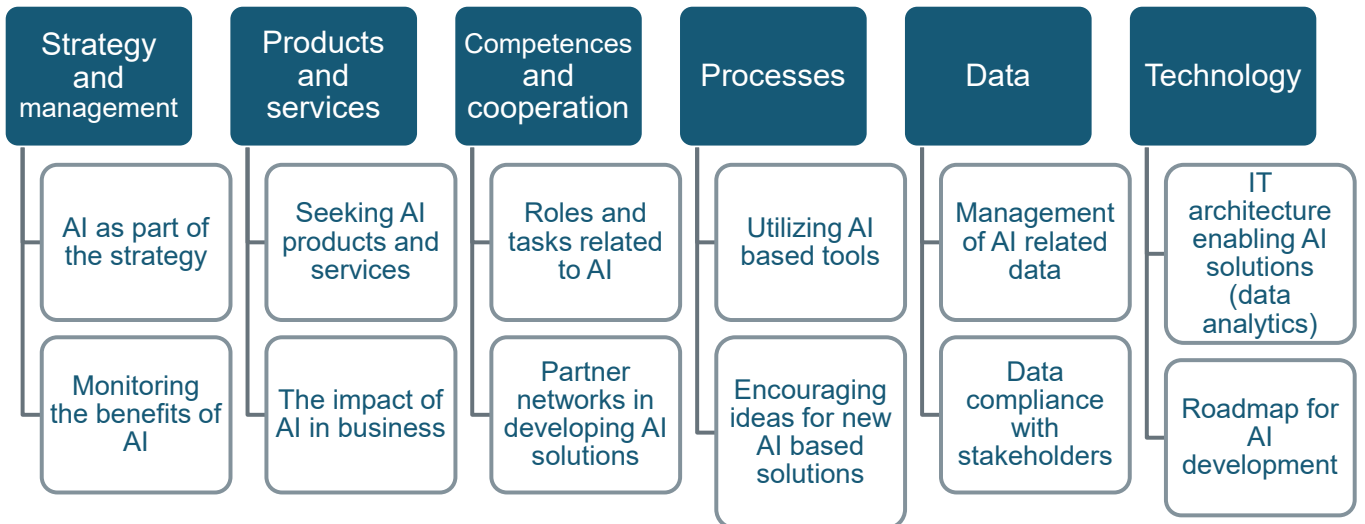
Figure 7. Dimensions of the DigiMaturity tool.

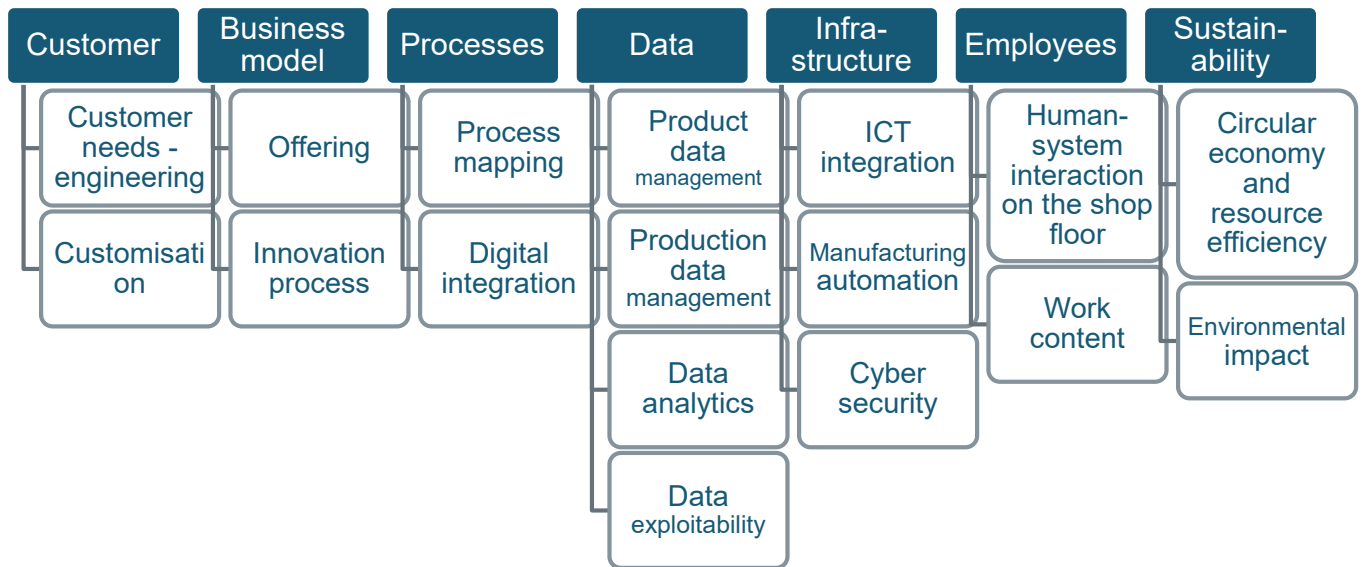*Figure 8. Dimensions of the AI maturity tool.*

Figure 9. Dimensions of the ManuMaturity tool.

3. EIT AI maturity tool

EIT AI maturity tool was developed in EIT cross KIC AI activity funded by EU. The original AI maturity tool was extended with few extra questions and the extended service provided with five extra languages (DE, ES, FR, IT and PL).
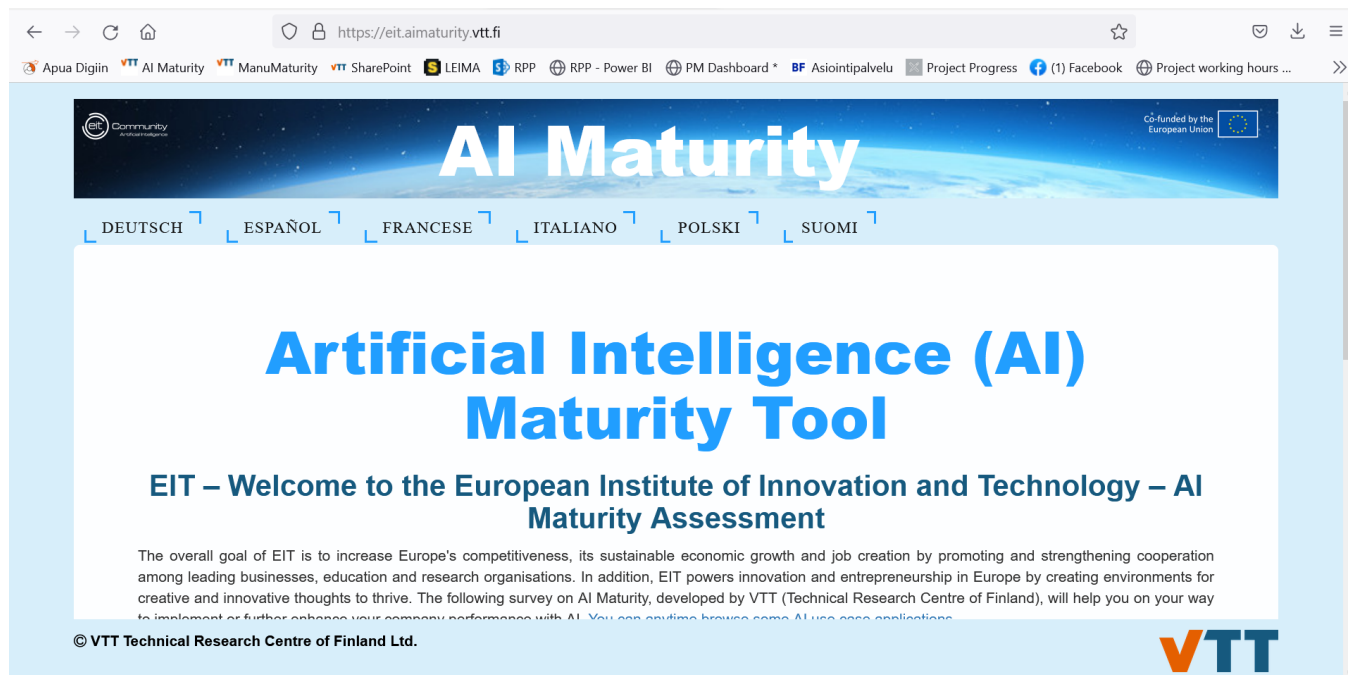

Figure 10. EIT AI maturity at https://eit.aimaturity.vtt.fi/

In addition to the extra languages, EIT AI maturity tool data base contains few columns that do not exist in the other tools, such as language and three fields for background questions.

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4. Summary

This report describes briefly VTT's maturity tools and overview of the deployment of AI maturity tool for the EIT cross KIC AI activity in Spanish, French, Deutsch, Italian and Polish in addition to the already existing implementation in English and Finnish. Further, also data protection declarations and terms of use were translated and attached to the service. Detailed technical description of the implementation is available in the VTT internal report.

EIT cross KIC AI activity will invite companies to access their AI maturity in 2022. In case the project continues, VTT will provide reports on the responses to the native contact persons in Table 4. To mention some maintenance ideas: the backup process could be reviewed, and some elements updated. The detailed development ideas are listed in VTT JIRA on the Maturity tools' Kanban board.

Table 2. Native contact persons

Language	Name
GE and PL	Adrian Bablok
IT	Rosanna Macrina
FR	Cecile Schott
ES	Blanca CHOCARRO

References

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Saari, L., Kuusisto, O., & Pirttikangas, S. (2019). *AI Maturity Web Tool Helps Organisations Proceed with AI*. https://cris.vtt.fi/en/publications/manumaturity-a-maturity-tool-for-manufacturing-companies-to-reach

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