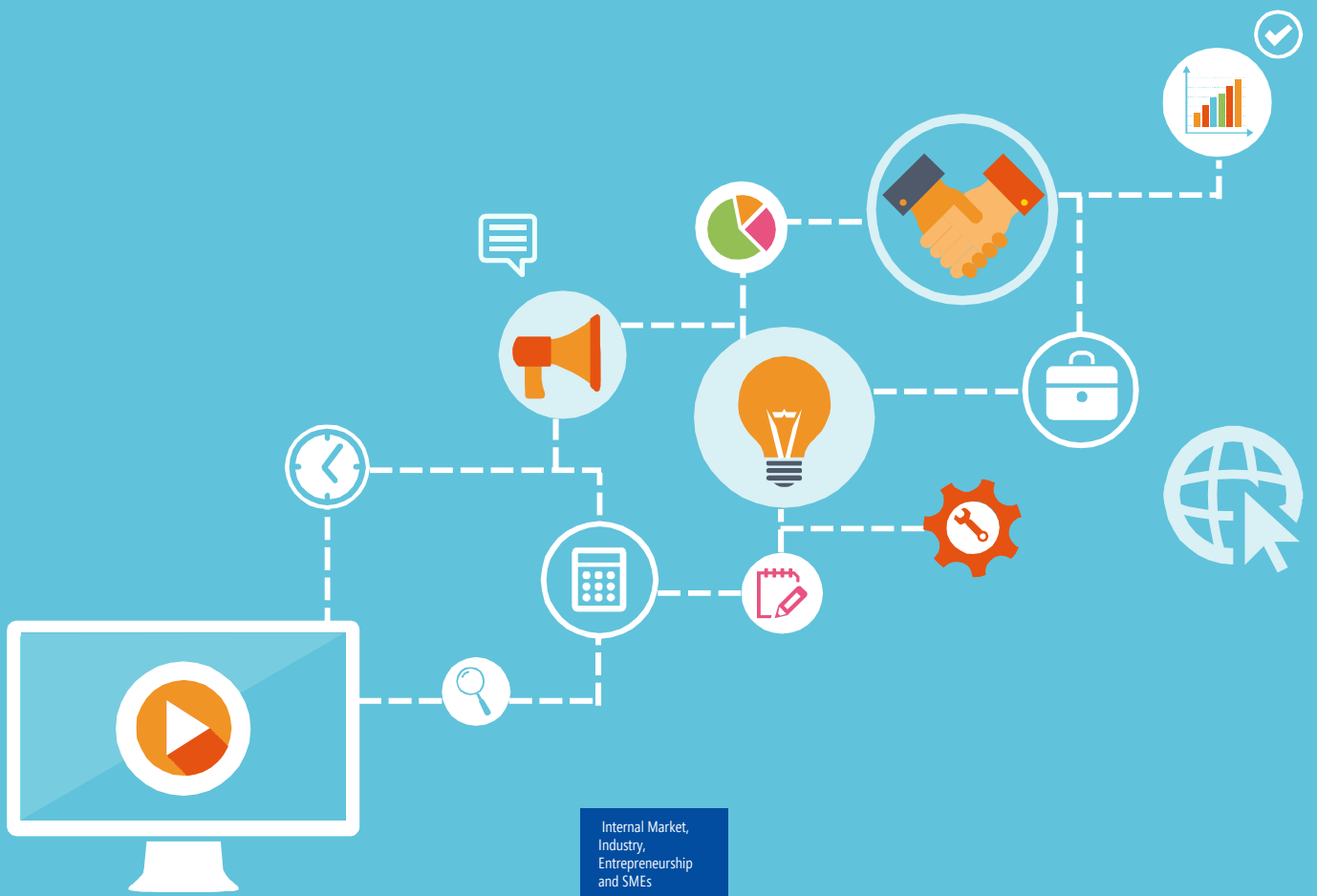




Digital Transformation Monitor

# Austria: Plattform Industrie 4.0

*December 2017*





# Austria: Plattform Industrie 4.0

## Fact box for Austria's Plattform Industrie 4.0 policy initiative

 <b>Policy Lever(s)</b>	Majority privately funded by narrow margin; Equally focusing on skills and technologies; Evolution from top-down to bottom up implementation approach
 <b>Funding Model</b>	Mix of equal public-private seed funding for operative costs of the platform's association; Three-tier membership fee for large companies, research organisations and start-ups
 <b>Target audience(s)</b>	Companies; research organisations; universities; policy-makers at national and regional level; trade unions; employees' associations
 <b>Concepts &amp; Focus Areas</b>	Six thematic working groups: (1) Norms and standards; (2) Research, development and innovation; (3) Qualification and skills for Industry 4.0; (4) Regional strategies; (5) The human in the digital factory; (6) Smart logistics.
 <b>Key drivers</b>	Set-up of coordinating office to follow a continuous line of work is key given the complexity of the topic
 <b>Key barriers</b>	Overcoming diverging approaches to tackle different issues among organisations can be challenging; Wide topic and time consuming strategy definition
 <b>Implementation strategy</b>	Set-up of Association as first step; Preparatory meetings during a period of 2 years; Identification of thematic areas through other initiatives
 <b>Results achieved</b>	Increased membership from 6 to 41 organisations in 2 years; Research cooperation between companies and research; More than 80 publications
 <b>Budget</b>	€ 300,000 per year provided by the 6 founding members (50% from the Ministry; remaining 50% provided by the other members); € 200,000 provided by the membership fees (forecast for 2017)
 <b>Uniqueness factor</b>	Involvement of trade unions and employee associations to effectively bring on board employees on the journey to digitisation of industry
 <b>Value-added for policy-makers</b>	Alignment between national and regional Industry 4.0 initiatives as a thematic focus area
 <b>Expected Impact</b>	Shaping the content of calls for proposals; creating a common national understanding of industry 4.0 and exploit its benefits for everybody

Source: Digital Transformation Monitor

## Introduction

Austria's national *Plattform Industrie 4.0 (PI4.0)* started in 2014 upon the initiative of the Austrian Ministry of Transport, Innovation and Technology. Established in June 2015, PI4.0 became operative in October 2015. The platform acts as an observatory, network and strategic advisory body creating working groups, strategies, focus areas as well as case studies on industry 4.0 topics. The work of Industry 4.0 also seeks to contribute to the creation of synergies between national, regional and international R&D activities.

The Platform facilitates the implementation of digital transformation in Austria and unifies the Industry 4.0 community. It aims to secure and create highly innovative industrial production and to boost quality employment, thus strengthening Austria's future competitiveness.

The initiative is run by the association "Industry 4.0 Austria – the platform for intelligent production". The association was created to foster collaboration among all stakeholders and facilitate new technological developments and innovations in the context of digitisation ('Industry 4.0'). Its main mission is to find sustainable solutions to challenges faced by companies, research institutions and society as a whole.

Unique in its ample involvement of employee associations, PI4.0 achieved to build an inclusive ecosystem intending to overcome employees' concerns regarding digitisation. While the introduction of a membership fee

is supporting the financing of the initiative increasingly, it also poses a challenge to handle greater expectations of the members in the context of a highly diverse platform.

## Policy context

The Austrian Ministry of Transport, Innovation and Technology has been actively encouraging digitisation. In 2014, the Ministry adopted the Broadband Strategy 2020 to ensure Austria's ambition to be among the leading countries in ICT and digitisation worldwide.<sup>1</sup> The strategy aims at creating nationwide coverage of broadband in Austria by 2020.

With a view to ensure excellence in research on digitisation topics, the government established dedicated funding programmes and SME support measures. In the context of launching the "Production of the Future" initiative, the Ministry involved experts from research and industry. Alongside other programmes, e.g. "Silicon Austria" and "ICT for the future", the government is injecting approximately €120 million in direct funding on digitisation topics in science and industry.

After launching PI4.0, the Ministry adopted an Industry 4.0 Package at the end of 2016. Next to basic financing of the platform, the Package equally includes replenishing the funding for industry 4.0 research programmes with focus on advancing intelligent systems for self-driving vehicles, artificial intelligence, security and interoperability of systems. Further elements of the Package include setting up two further pilot factories,

the procurement of studies in the field of industry 4.0 and the development of a 5G development strategy.<sup>3</sup>

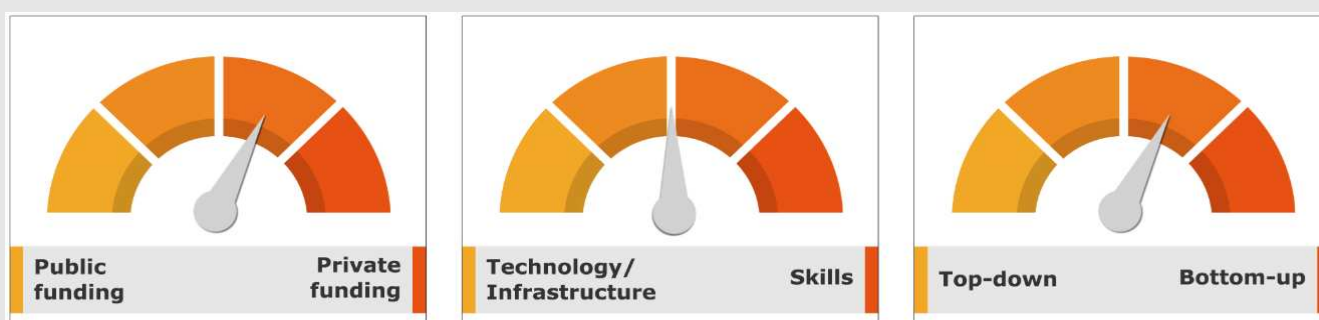
## Objectives of the policy

Austria's Plattform Industrie 4.0 is embedded in the challenge of bringing knowledge intensive production back to Europe. The digitisation of industry is seen as a major vehicle to achieve this challenge. The Austrian platform approaches the digitisation challenge from a social and inclusive angle seeking to exploit benefits for everyone, including employers and employee organisations.

The main objectives of the initiative are:

- to leverage interests between industry, science, policy makers, employers and employees associations;
- to accompany the processes of change driven by digitisation;
- to provide knowledge and services on Industry 4.0 to companies, academia, RTOs and to the general public;
- to define fields of action and to advise policy makers;
- to develop joint strategies with high leverage on Industry 4.0;
- to launch initiatives to steer regional, national and international activities;
- to enable the exchange of experience, best practices, data and studies

### Policy levers for Austria's Plattform Industrie 4.0 initiative



Source: Digital Transformation Monitor

## From bottom-up to top-down implementation

The classification along the lines of public and private funding depends on whether funding from the universities and research organisations is considered as private or public. Initially, public funding was certainly outweighing private contributions; yet given the growing membership base, private funding now prevails over public funding by a narrow margin.

The classification of the policy initiatives in terms of skills or technology focus is equally difficult, since the working groups cover diverse aspects. There are also other focus areas, e.g. business organisation tackling more structural aspects. Overall, there seems to be a fairly equal distribution of technology and skills related topics.

In terms of implementation mode, the founding members have had an important role to direct the course of the platform at the start. While the Ministry and other founding members were in the driver seat initially, e.g. defining the themes of the working groups, lately one can see an evolution towards a more bottom-up approach with Board Members orienting more along the priorities of the platform's members. In addition, the Board was recently extended to include four further organisations incl. from a public organisation, research organisation, large industry and SME.

## Combining public-private seed funding with membership fees

The funding model behind PI4.0 relies on two sources: (1) Basic seed funding provided by the six founding members and (2) membership fees. The seed

funding of the platform provided by the six founding members amounted to approximately €300,000 per year as a kind of basic financing for the first three years of operations. This amount is primarily covering the association's staff salaries, but also travels etc.

The second part of the income is retrieved from the platform's 35 additional members. Membership is based on an annual membership fee in the form of a three-tier model. Large companies with more than 1000 employees located in Austria pay an annual fee of €7500; smaller companies, research institutions, trade unions, etc pay €5000; recently, a start-up scheme paying €750 per year only was equally introduced. In addition, discussions are ongoing whether there should be a greater granularity of the fee for companies, e.g. SMEs. In this context, an annual fee of €5000 is proposed.

As more members have joined the initiative in the last years, the basic financing of the initiative by these members will be reduced; yet not completely abolished, since the founding members have also more rights than other members, e.g. they are represented on the Board of the initiative.

## Private financing

The seed funding to run the operations of the platform is financed to 50% by private funding sources. Concretely, the financing is provided by the Federation of Austrian Industry, the Association of the Austrian Electrical and Electronics Industries (FEEL) and Metal Technology Austria, the Federal Chamber of Labour and the Austrian Trade Union of Production.

The remaining part of private financing comes from the membership fees. Currently, there are 16 companies as definite private contributors; yet, universities and research organisations may in part be also supported by private sector contributions.

The platform is actively working on recruiting new members, including private organisations, to enrich its knowledge base. During its setting-up

phase the platform decided to recruit companies rather than business federations to receive feedback, experience and best practices directly from enterprises.

Being a membership platform without financing research directly, there is no private leverage effect on public investments.

## A diverse portfolio of activities

PI4.0 provides an ample set of activities focusing on conducting research in strategic I4.0 related areas. Thematically, the platform set up seven working groups of which six are still active today.

The working groups are composed of interested members of the association and top tier experts, e.g. from Ministries, funding agencies, standards organisations, Public Employment Service etc.). Here, PI4.0's members have the opportunity to contribute to Industry 4.0-related topics. While the processes and outputs differ across the working groups, working processes are very transparent with meetings taking place regularly. In most cases the outputs involve the development of roadmaps, strategies and analytical reports.

The working group (WG) on norms and standards produced an online standard catalogue for Industry 4.0. The catalogue contains the most important current standards which are relevant for the successful introduction of Industry 4.0, especially in the fields of electrical engineering, communication technology, Internet technologies and mechanical engineering / robotics. The standard catalogue also provides information on the relevant standardisation bodies and the contact persons in Austria.

Next to research on current and urgent I4.0 topics, the platform's activities involve policy advice, experimental activities for members as well as to disseminate case studies and best practices. The WG on pilot factories, for example, was set up in order to advise the Austrian government on the thematic contents

*"I want employees to benefit from industry 4.0. That's why we need to invest massively in training and qualification."*

**Jörg Leichtfried, former Minister of Infrastructure, Innovation and Technology.**

of the calls for proposals released under the Austrian funding programme.

Moreover, PI4.0 developed case studies presenting a brief overview of Industry 4.0 application examples including a presentation of the technology applied and lessons learned. The platform also develops a series of targeted services and outputs for its members. The maturity assessment model (“Reifegradmodell”) and standardisation catalogue represent examples of practical application for organisations dealing with I4.0 topics.

### Target audience – Companies, research organisations & users

Given the initiative’s wide involvement of different stakeholders as members of the platform, PI4.0’s target audience is similarly diverse. Primarily, the platform states to focus on the needs of enterprises, research organisations and users. However, its role as an expert hub to influence the contents of calls for proposals in the field of Industry 4.0 and close cooperation with regional authorities show that national and regional policy-makers are also among the targets.

### Concepts and focus areas – Exploring Industry 4.0 from different angles

PI4.0 considers Industry 4.0 a societal challenge which requires a broad coalition of industry, science, regional and national policy makers, associations, trade unions and non-governmental and social organisations. The key drivers of Industry 4.0 are seen to lie in technological innovation, new business models, knowledge transfer and the widespread socially acceptable deployment and implementation of digital technologies.

In terms of thematic focus areas, PI4.0 is currently centred on six working groups: (1) Norms and standards; (2) Research, development and innovation; (3) Qualification and skills for Industry 4.0; (4) Regional strategies; (5) The human in the digital factory; (6) Smart logistics. The working group on pilot factories – originally number 7 of the working groups was dissolved once the funding programmes were established.

### Mastering Industry 4.0’s complexity

A key driver of the initiative lies in the creation of a coordinating office of PI4.0. This allows the association to follow a continuous line of work. Staff insights gained from working with other digitisation initiatives, e.g. the OECD’s digitisation project, reveal that a permanent office with a dedicated team following up and coordinate the work of the working groups full-time creates a different drive.

Consultations with the Swiss government to set up an Industry 4.0 platform equally came to the conclusion that a CEO and permanent office is important. The complexity and broad scope of Industry 4.0, reinforces the need for a coordinating office – “Plattform Industrie 4.0”.

The initial seed funding stemmed to 50% from the Ministry, while the other 50% were provided by the other five members.

From the very beginning of the discussions the involvement of employees’ organisations gave the initiative a unique design. Examples of how other platforms are set up and operated, in particular the German platform, were equally examined. PI4.0 deliberately decided to choose a different, broader composition of platform members.

Plattform Industrie 4.0 comprises a Board with 10 members from industry, research, trade unions and the Austrian Ministry of Transport, Innovation and Technology.

### The coordinating office as a separate legal entity

As a first implementation step, the Association was founded. This is one of the main differences to the German initiative which did not create a separate legal entity. In addition, the decision was made that there would also be an operative unit with a Managing Director. In total, there are four people working full-time to manage and coordinate the platform. An important element was also neutrality, i.e. to ensure that the association is acting independently of any political affiliations.

#### SWOT Matrix for Plattform Industrie 4.0

<p><b>Strength</b></p> <ul style="list-style-type: none"> <li>Wide involvement of stakeholders with diverse backgrounds with truly national range</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>Membership fee raises expectations for direct return on members’ investments</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Broad consensus among all involved stakeholders to reap the benefits of digitisation and create additional services for PI4.0 members</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Diverging interests of members and complexity of industry 4.0 can complicate satisfying all members</li> </ul>

Source: Digital Transformation Monitor

## Designed by research & industry

The initiative was designed primarily by the six founding members of PI4.0: the Ministry of Transport, Innovation and Technology, 3 employers' associations (Federation of Austrian Industry, Association of the Austrian Electrical and Electronics Industries and Metal Technology Austria and two employees associations (the Federal Chamber of Labour and the Austrian Trade Union of Production).

When the Association was founded, other organisations and companies were invited to join as members of the platform. For a period of almost 2 years, preparatory meetings organised by the Ministry were ongoing starting in early 2014. During these meetings, the thematic working groups were developed.

Other platforms such as Industrie 4.0 from Germany served to identify suitable thematic areas. In the meantime, the whole first half a year strategic consultations were carried out with all founding members. The founding members included the Ministry of Transport, Innovation and Technology, three employers' associations, namely the Federation of

Austrian Industry, Association of the Austrian Electrical and Electronics Industries and Trade association of metal technology) and two employees' associations, the Federal Chamber of Labour and the Austrian Trade Union of Production.

## Overcoming stakeholder differences

Initially, there were doubts whether the initiative would succeed, given the involvement of both employee and employer associations. Smaller companies feared that the larger companies would dominate the activities too much. However, perceived barriers did not become reality. On the contrary, the strategy definition process of organisations with diverging approaches is relatively time consuming. At the same time, some organisations expected things to evolve at higher speed. Ensuring space for sensitive discussions and compromise on the one hand and timely delivery of results on the other can be a challenging endeavour.

Another challenge related to the involvement of many different stakeholders is to bring added value to the topics of the working groups. The

combination of industry 4.0's thematic complexity with diverging viewpoints of the members creates a risk of reducing contents to the smallest common denominator with little value added to ongoing discussions. No matter how inspiring the discussions, they often do not serve as publication material.

As a result, external observers may get the impression that relatively few outputs are produced; yet, the discussions are an important part of the platform's culture.

## Results achieved

PI4.0 has produced quantitative as well as qualitative outputs. Since the start of the initiative, the platform has increased membership from 6 to 41 organisations (incl. the founding members) comprising 18 companies, 8 academic institutions, 6 public research organisations and 8 NGOs and 1 Ministry).

Thanks to the platform, several research cooperations have started between companies and research organisations. One of the primary outputs of PI4.0 are the numerous publications developed in the Working Groups, for example the Normungskompass ("standardisation compass") which is used by the Swiss authorities and the Austrian Social Insurance for Occupational Risks (AUVA) ("Allgemeine Unfallversicherungsanstalt"). Moreover, the platform created an online database with more than 300 standards and norms in the context of I4.0.

Furthermore, in the preparatory WG where regional governments come together a training coalition or cooperation between three regional governments was established. The regions decided to join forces on setting up a research training workshop.

### Achieved results for PI4.0 in the period 2015-2017

<p><b>PI4.0 platform membership</b></p>	<ul style="list-style-type: none"> <li>• 41 members in total companies (increase of almost 700% since 2015)</li> <li>• 16 companies</li> <li>• 6 academic institutions</li> <li>• 6 research organisations</li> <li>• 8 Non-Governmental Organisations</li> </ul>
<p><b>Research and policy outputs</b></p>	<ul style="list-style-type: none"> <li>• Research cooperation between companies and research organisations</li> <li>• Online database with more than 300 standards and norms in the context of I4.0</li> <li>• More than 80 publications</li> </ul>
<p><b>Coordinating Office communication outreach</b></p>	<ul style="list-style-type: none"> <li>• 55 meetings with 1156 participants</li> <li>• 70 presentations about the platform</li> <li>• 21000 website users (active since 02/2016)</li> <li>• 104024 webpages opened from 96 countries</li> </ul>

Source: Digital Transformation Monitor

In the field of R&D, the platform successfully shaped the content of call for proposals launched by the Ministry. In terms of qualitative outputs, all constituents see I4.0 more positively as a result of discussions held during the platform's meetings.

## Scalability and transferability

With regard to transferability, PI4.0 has received inquiries from other initiatives to set up a similar platform. Some of the advice and good practices shared were adopted. Furthermore, interest was expressed in some of the outputs produced by the platform, e.g. the standardisation compass.

PI4.0 firmly values liaising with other comparable platforms, e.g. the German *Plattform Industrie 4.0*, in order to exchange information and learn from the other platforms. Recently, the platform decided to present a focus country at each of the future annual conferences of PI4.0. In December 2017, the focus country will most likely be France.

The scaling up of PI4.0 is limited by the available resources impeding further staff to be employed. However, there are attempts to increase the amount of member organisations, not only for financial reasons but also to gain more weight in the political arena. Increasing involvement of PI4.0's members to work on ideas for scalability and help initiate new instruments is equally foreseen.

## Taking employees on the digitisation journey

The involvement of employee associations in the platform turned out to be a success. Given that innovation comes from employees and that highly innovative companies tend to be the ones profiting the most, PI4.0 emphasises the importance of taking employees on the joint journey to digitisation. Employees need to see the opportunities arising from digitisation and adapt accordingly. However, building up trust and shaping the mind-set of those organisations was reported to be time consuming.

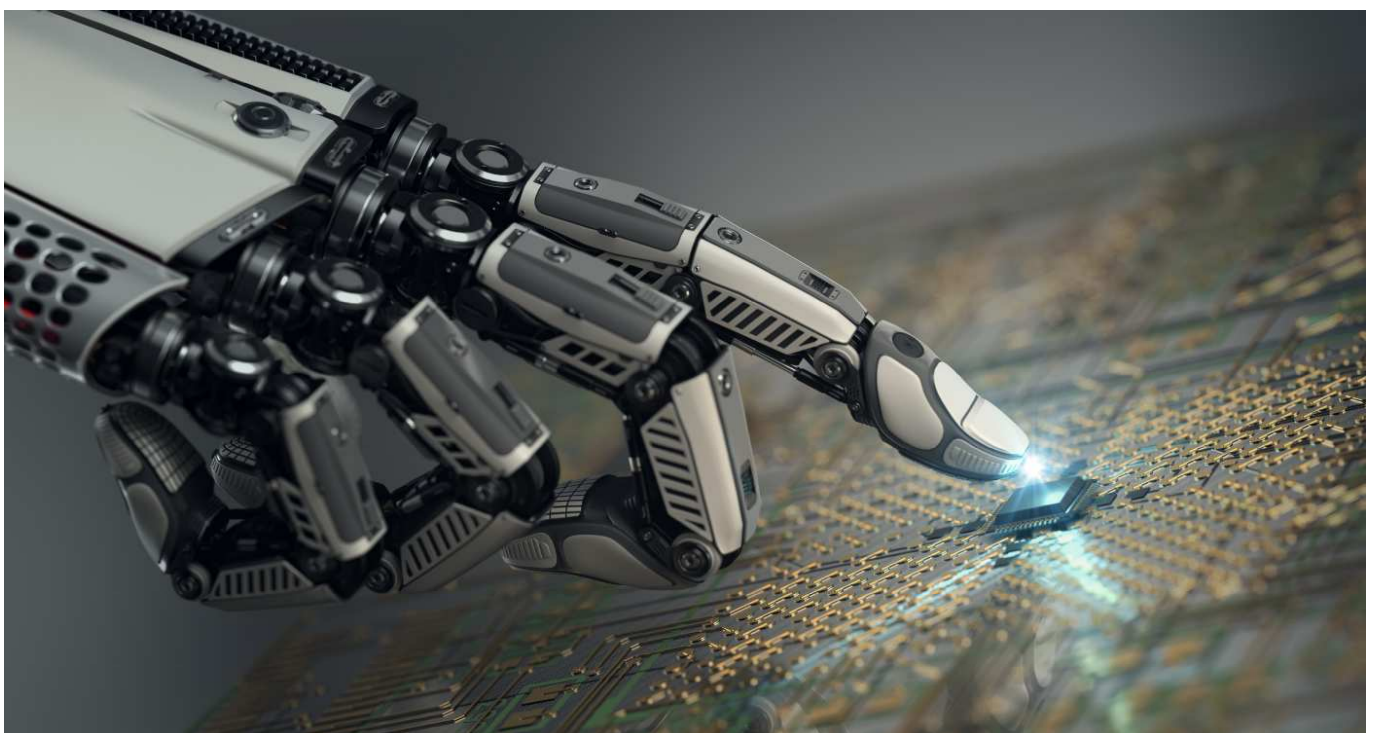
Secondly, it was useful to leave the responsibility of contents and public relations with the platform. Initially, the idea was to leverage the resources of the members for these purposes; yet, the persons responsible, did not have enough available resources to take on board these additional tasks.

In order to smoothen the process of working with a great diversity of organisation, the development of a vision paper was a useful exercise. In this paper the main expected outputs and targets were defined in 1 to 1.5 pages creating a solid base to cooperate across different types of stakeholders.

## References

<sup>1</sup> Bundesministerium für Verkehr, Innovation und Technologie (2014). Breitband Strategie 2020. Retrieved from: [http://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=4828](http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=4828)

<sup>2</sup> [https://www.bmvit.gv.at/presse/aktuell/downloads/leichtfried/industrie4\\_massnahmen.pdf](https://www.bmvit.gv.at/presse/aktuell/downloads/leichtfried/industrie4_massnahmen.pdf)



## About the Digital Transformation Monitor

The Digital Transformation Monitor aims to foster the knowledge base on the state of play and evolution of digital transformation in Europe. The site provides a monitoring mechanism to examine key trends in digital transformation. It offers a unique insight into statistics and initiatives to support digital transformation, as well as reports on key industrial and technological opportunities, challenges and policy initiatives related to digital transformation.

Web page: <https://ec.europa.eu/growth/tools-databases/dem/>

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