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1. Australia – CSIRO’s Data61

<table>
<thead>
<tr>
<th>Objective</th>
<th>CSIRO’s Data61 is the largest data-driven R&amp;D organisation in Australia. It is a non-profit organisation of the Commonwealth Science and Industrial Research Organisation (CSIRO) pursuing three main objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Lead the development of Australia’s digital and data science capabilities in research, government and industry;</td>
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<tr>
<td></td>
<td>• Ensure Australia’s successful shift from traditional analogue economy to the digital and knowledge economy;</td>
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<td></td>
<td>• Pursue new-to-the-world fundamental and applied research.</td>
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</table>

| Target audience | CSIRO’s Data61 targets public research (with regular co-operation established with 30 universities), private-sector stakeholders (it has more than 90 business partners, including start-ups and SMEs) and government (it acts as a technical advisor to the Australian state and federal government agencies, including the Department of Innovation and Science (DIIS), the Prime Minister & Cabinet and Australian state governments). |

| Timetable | CSIRO’s Data61 was established July 1, 2016. |

| Priority industries and technologies | CSIRO’s Data61 does not have a specific sectoral coverage. Research focuses on the following technologies that are strongly linked to data analytics: Artificial Intelligence and machine learning; robotics; and Distributed Ledger Technologies (DLT), such as blockchain and Bitcoin. |

| Specific approach to breakthrough innovation | CSIRO’s Data61 focuses research in breakthrough data-led research domains. Breakthrough innovation is stimulated by its flatter organisational structure and start up-like environment that offers high autonomy to researchers, with the aim of spurring creativity and supporting more risky research. |

| Instruments used | • Research co-operation with partner universities via the University Collaborative Agreement (DUCA), which allows:                                                                 |
|                 |   ○ Joint research grant funding opportunities from various sources (e.g. the Australian Renewable Energy Agency);                                                                                                         |
|                 |   ○ PhD co-supervision and co-funding in the area of computer science through scholarships supplied by CSIRO’s Data61 and other CSIRO’s business units;                                                           |
|                 |   ○ Training aimed at complementing specific industry and government training objectives.                                                                                                               |
|                 | • Creation of Open Innovation tools:                                                                                                                                                                     |
|                 |   ○ An innovation challenges marketplace, where users provide details of the data-related problem they are looking to solve (i.e. some keywords regarding their challenge) and they are |
then automatically redirected to relevant experts that can provide a viable solution.

- Expert Connect Database, which contains profiles of more than 60,000 experts. It has been designed to boost industry-researcher co-operation by facilitating match-making processes.
- National Map, which brings together dispersed data collected by governments at all the levels into an easily viewable map. It connects to data servers at each government agency and provides data in a completely accessible way.

- Development of analytical documents aimed at providing advice to decision makers in business and government (e.g. the national AI roadmap commissioned by the Australian Federal Government aimed at guiding future national investments; and the reports “Distributed Ledgers: Scenarios for the Australian economy over the coming decades”, where they explored four potential scenarios of blockchain adoption by 2030; and “Risks and opportunities for systems using blockchain and smart contracts” presenting three case studies that examine how blockchain can support new markets and business models);

- Participation as data expert on steering committees for national programmes (e.g. Federal Government’s Consumer Data Right and the Australian Genomics Health Futures Mission).

### Budget of the initiative

CSIRO’s Data61 operating budget is approximately AUD$110 million annually (approx. EUR 69 million) with funding and revenue drawn from:

- Core public funding from Federal Government for long term investments in research and development capabilities and expertise to carry out fundamental and strategic research;
- Funding for applied research, technology and product projects from public and private sectors;
- Competitively-won funding for Industry and government R&D projects with deliverables;
- Revenues from IP licensing, products or spin-out equity returns.

### Responsible policy making body

Data61 is the resulting entity of a merger between the Commonwealth Science and Industrial Research Organisation’s (CSIRO) Digital Productivity flagship unit and the National ICT Australia (NICTA), an Internet-era communications, data science and networking Centre of Excellence. Data61 is currently a business unit of the CSIRO.

### Responsible implementation body

Data61 is integrated with the CSIRO central systems. However, it has greater independence in how it is structured internally to allow it to succeed in the faster paced digital data domain. It is characterised by a flat structure with less middle-management and more autonomy of the staff. In line with its organisational market pull design, CSIRO’s Data61 research leaders are responsible for identifying and resourcing new opportunities. Group leaders have to define both the priorities and the practical development of the projects while still maintaining
## Implementation of the initiative

In 2016-2017, CSIRO’s Data61 secured more than AUD$ 13 million (EUR 8.1 million) in new multi-year contracts with 51 patents granted and 72 applications filed. An example is the patented N1 software Analytics that allows data scientists to analyse data in such a way that preserve privacy and confidentiality while enabling richer data insights to be derived.

## Regional (subnational) aspects

CSIRO’s Data61 has primarily a national and global focus. Nevertheless, the NationalMap, developed by Data61, has a regional dimension as it gathers spatial data from all Australian government agencies.

## International aspects

CSIRO’s Data61 partners with leading public and private organisations—around the World on very diverse projects, such as the development of a remote monitoring system to track diminishing biodiversity in the Amazon rainforests, software to improve the early detection of cancer, and building a blockchain-for-trade platform to advance trade between Pacific-region partners. International partners include the Defence Advanced Research Projects Agency (DARPA), Boeing and Intel in the USA; the Vietnamese Ministry of Science and Technology; the International Atomic Energy Agency (IAEA) and the Chinese Academy of Science.

## Monitoring and evaluation strategies

Since 2010, CSIRO’s Data61 has taken an organisation-wide framework approach to plan, monitor and evaluate the impact of its research. The **CSIRO’s Impact Framework** requires each research team to identify who are the world leading groups in their domain and realistically compare their methods, outcomes and strategy with them. The track record of individual high performing researchers is also considered in the project team performance, since studies have shown that excellent science is strongly correlated to the inclusion of excellent scientists.

## Critical dimensions

- CSIRO’s Data61 research model combines Digital+Domain expertise that enabled to build an inclusive and interdisciplinary ecosystem.
- Close linkages with academia, industry and government allow researchers to be aware of current industry and societal needs and demands.
- Continuous efforts to attract and retain global talents.
- Flatter hierarchy structure that provides high autonomy to research staff, stimulating creativity by emulating start up-like environments.

## More information

CSIRO’s Data61 (2019[6]), “Case study on CSIRO’s Data61, Australia: Contribution to the OECD TIP Digital and Open Innovation project”. Available [here](#).
## 2. Austria – Plattform Industrie 4.0

| Objective | The Plattform Industry 4.0, a membership based non-for-profit association, is a supportive policy coordination hub that has the main objectives of:  
|           | • Facilitating the process of change driven by Industry 4.0 in Austria  
|           | • Strengthening co-operation among relevant stakeholders (industry, science, policy makers, employees and employers associations) to create an innovative industrial production ecosystem. |
| Target audience | The platform targets stakeholders from the private sector (incl. large firms, SMEs, trade unions), academia, and government. |
| Timetable | The Plattform Industry 4.0 was established in 2015. |
| Priority industries and technologies | The Plattform Industry 4.0 covers all manufacturing industries, without focusing on specific sectors or technologies. |
| Specific approach to breakthrough innovation | The expert groups of the platform explore the opportunities and impacts that breakthrough innovations could bring for industry, society and workers in particular, and develop roadmaps and other documents providing advice and guidance for policy and industry. |
| Instruments used | • Provision and dissemination of information, research results, best practices and case studies about Industry 4.0 to companies, research organisations and the general public;  
|           | • Development of roadmaps, guidelines and strategies for the practical implementation of measures by policy makers;  
|           | • Development of analytical documents (e.g. the R&D strategy paper and the Strategy Paper ‘Qualification and competences for Industry 4.0’);  
|           | • Organisation of networking and match-making events;  
|           | • Provision of policy advice, experimental activities for members, and consulting services. |
| Budget of the initiative | The annual budget for the Plattform Industry 4.0 amounts to approximately EUR 600,000. Its funding model is based on two pillars:  
|           | • Basic seed funding provided by the six funding members (approx. EUR 300,000 per year)  
|           | • Membership annual fees in the form of three-tier model. Large companies located in Austria (>1000 employees) contribute with EUR 7 500 per year. Smaller companies, research institutions and trade unions pay EUR 5 000. Start-ups pay EUR 750 annually. |
### Responsible policy making body

The Plattform Industry 4.0 was established by six founding members, including the German government and five employee and employer associations: the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT); the Austrian Federal Chamber of Labour; the Association for the Electrical and Electronics Industries; the Association of Metal technology Industries; the Federation of Austrian Industries and the Austrian Union of Production Workers.

### Responsible implementation body

The implementation procedure involves different bodies of the Plattform: the Board of Directors (six representatives of the founding members and five representatives of universities, public research organisations and industries); the coordinating office (4 staff members operatively run the Plattform); and eight active expert groups composed of interested members and top tier experts thematically cover different key drivers of Industry 4.0. The six founding members have had an initial important role related to the definition of the Plattform’s strategic focus. Today the Plattform employs a bottom-up approach where the Board of Directors is orienting the priorities and, together with the coordinating office, it is setting up a procedure for choosing topics to be dealt with, in order to align the activities with the general mandate of the Plattform. To do so, the chair of each expert group, in cooperation with the corresponding member of the Board of Directors, drafts a vision paper that will serve as an orientation for the structure of the main topics to be discussed.

### Implementation of the initiative

There are many different projects implemented by the Plattform. Relevant examples include:

- **The Austrian Industry Maturity Model**, an initiative of Business Upper Austria, the University of Applied Sciences Upper Austria and Plattform Industry 4.0 Austria. It offers an independent evaluation of the digitisation readiness of firms by providing a technology-neutral assessment based on a scale from 0 to 10 (the higher it is, the more industry 4.0 aspects are implemented) in the dimensions (i) data, (ii) intelligence and (iii) digital transformation. A complementary initiative is the Business Model L.ab that enables companies to test new business models approaches in a secure framework.

- The “Qualification and Competences for Industry 4.0” project aims to support people, companies and training providers in developing their skills and proactively exploit the opportunities offered by Industry 4.0. This initiative led to the publication of a strategy paper that compiles 81 recommendations in seven fields of action and five levels (general recommendations, school, initial vocational training, tertiary education and continuous training).

### Regional (subnational) aspects

In one specific expert group on “Regional Strategies” representatives of regional governments and regional agencies come together. In this specific group a cooperation between three regional governments was established.
<table>
<thead>
<tr>
<th>International aspects</th>
<th>The Plattform Industry 4.0 is increasingly focusing on international activities. It is actively participating in the working groups of the EU initiative “Digitising European Industry”. Moreover, it collaborates with its equivalents in other countries (e.g. Plattform Industry 4.0 Germany). This co-operation is considered a key element for the achievement of a systemic change in terms of innovation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring and evaluation strategies</td>
<td>So far there has not been any evaluation of the impact of the Plattform Industry 4.0, nevertheless, there is an intention of the Federal Ministry of Transport, Innovation and Technology to perform an impact evaluation in the next years. Since its establishment, Plattform Industry 4.0 achieved to build an inclusive and diverse ecosystem, increasing the number of members from 6 to 44 within two years.</td>
</tr>
<tr>
<td>Critical dimensions</td>
<td>The critical dimensions are:</td>
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<tr>
<td></td>
<td>• Balanced composition of participants of the Plattform to ensure all the relevant stakeholders from policy, associations, NGOs, agencies and research are participating;</td>
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<td></td>
<td>• Clear rules and processes for exchange between stakeholders, an commitment to neutrality, transparency and regular feedback;</td>
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<td></td>
<td>• Focus on a limited number of specific topics within which selected projects are defined;</td>
</tr>
<tr>
<td></td>
<td>• Professional organisation of processes and resources (e.g. detailed planning of the annual work programme with specific contents and projects).</td>
</tr>
<tr>
<td>More information</td>
<td>Boog et al. (2019[7]) “Case study on the Plattform Industrie 4.0, Austria: Contribution to the OECD TIP Digital and Open Innovation project”, available here.</td>
</tr>
</tbody>
</table>
### 3. Canada – Pan-Canadian AI Strategy

<table>
<thead>
<tr>
<th>Objective</th>
<th>The Pan-Canadian AI Strategy has four major goals:</th>
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<tr>
<td></td>
<td>• Increase the number of artificial intelligence (AI) researchers and skilled graduates in Canada</td>
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<tr>
<td></td>
<td>• Establish interconnected nodes of scientific excellence in Edmonton, Montreal and Toronto</td>
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<td></td>
<td>• Develop global leadership on the economic, ethical, policy and legal implications of advances in AI</td>
</tr>
<tr>
<td></td>
<td>• Foster co-operation between AI research centres and industry</td>
</tr>
<tr>
<td></td>
<td>The Pan-Canadian AI Strategy is complemented by a number of initiatives under the broader ‘Innovation and Skills Plan’</td>
</tr>
</tbody>
</table>

| Target audience | The Pan-Canadian AI Strategy targets mainly the AI research community in Canada (universities and public research centres) |

| Timetable | The strategy is a five-year plan that was released in March 2017 |

| Priority industries and technologies | The strategy focuses on AI-related technologies and their applications across the entire economy |

| Specific approach to breakthrough innovation | The strategy supports breakthrough research and innovation in the field of AI |

<table>
<thead>
<tr>
<th>Instruments used</th>
<th>In order to strengthen research in AI and develop AI talent, the strategy establishes the following instruments:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>• Research funding for three centres of excellence in AI research and innovation (the Alberta Machine Intelligence Institute in Edmonton, the Quebec Institute for AI in Montreal, and the Vector Institute in Toronto) (see below for additional detail)</td>
</tr>
<tr>
<td></td>
<td>• Creation of AI Chairs programmes to attract and retain top researchers and train young researchers, by providing funding to support the recruitment and training of young researchers, including graduate students and postgraduate fellows</td>
</tr>
<tr>
<td></td>
<td>• Funding to establish expert groups (including international experts) that examine the social, economic, ethical and legal implications of AI and provide recommendations</td>
</tr>
<tr>
<td></td>
<td>• Organisation of “AI &amp; society workshops”, a series of workshop about the ethical, cultural and social implications of AI. Workshops are organised following an international Call for proposals</td>
</tr>
</tbody>
</table>
Organisation of “AI Futures Policy Labs”, workshops organised in partnership with the Brookfield Institute for Innovation + Entrepreneurship (BII+E), that gather actors from science and industry as well as policy makers to help the latter better understand the long-term policy implications of AI.

<table>
<thead>
<tr>
<th>Budget of the initiative</th>
<th>The budget of the strategy is Canada’s $125 million (approx. EUR 78 million).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible policy making body</td>
<td>The Pan-Canadian AI strategy has been designed by the Canadian Institute for Advanced Research (CIFAR) that is supported by individuals, foundations, corporations, as well as the Government of Canada and the provinces of Quebec, Ontario, British Columbia and Alberta.</td>
</tr>
<tr>
<td>Responsible implementation body</td>
<td>The implementation of this strategy is entrusted to CIFAR, Canada’s Global Research Institute. It is in charge of coordinating all the activities related to the strategy.</td>
</tr>
</tbody>
</table>
| Implementation of the initiative | The Pan-Canadian AI strategy provides funds for three independent AI research and innovation excellence centres:

  - The Alberta Machine Intelligence Institute (AMII), aimed at enhancing understanding and innovation in machine intelligence. AMII researchers are experts in game theory, reinforcement learning, AI health applications and robotics.
  - The Quebec Institute for AI (MILA) in Montreal develops deep learning algorithms and applies them to various domains. It is specialised in neural language modelling, neural machine translation, object recognition and neural speech recognition.
  - The Vector Institute in Toronto is dedicated to advancing research in the fields of AI for health, quantum computing, deep learning and machine learning.

The “AI and Society programme” that is part of the strategy has also started to be implemented. In particular:

  - Two international calls for proposals for “AI & society workshops” have been launched (completed in October 2018 and January 2019). Successful applications include “Generation AI: Reducing inequality and enhancing digital inclusion via smart design and developmental science” (held in May 2019) and “AI-powered information ecosystems and democracy” (June 2019).
  - Five “AI Futures Policy Labs” have been held, engaging in total more than 125 policy makers. CIFAR and BII+E published the recommendations and findings collected over the course of the Labs in a final report “Exploring the Future of AI Policy in Canada”.
  - Organisation and sponsoring of other activities, such as summer schools and training programmes. An example is the “AI For Good Summer Lab”, a 7-week programme bringing together 30 women from across Canada, and focused on innovative approaches to
teaching and learning AI. It also aims at tackling diversity and inclusion in AI research and development.

| Regional (subnational) aspects | The Pan-Canadian AI strategy has the objective of developing AI research across the country, and consequently focuses on 3 cities (Edmonton, Toronto and Montreal). It organises AI Futures Policy Labs in five cities (Montreal, Toronto, Edmonton, Vancouver, Ottawa).

The strategy is also complemented by a number of initiatives at the regional (provincial) level. An example are the AI investments made by the Quebec Provincial Government. |
| International aspects | The three AI research and innovation excellence centres supported by the strategy aim at increasing their international composition by attracting talent from other countries.

Among the international activities implemented by this strategy, the CIFAR recently launched, together with UKRI (UK) and CNRS (France), a series of international AI & Society research workshops to examine the economic, ethical, policy and legal implications of AI. |
| Monitoring and evaluation strategies | Since March 2017, the Pan-Canadian AI strategy established 54 partnerships with industry and organised 127 AI research workshops and events. It engaged with more than 150 researchers and policy leaders to examine the social, economic, ethical and legal implications of AI. |
| Critical dimensions | The strategy builds around boosting local hubs for AI research by leveraging the existing capacities of research institutions in the field, by aiming to build effective linkages with industry and strengthening the Canadian skills base in AI. |
### 4. Denmark – MADE Digital

<table>
<thead>
<tr>
<th>Objective</th>
<th>The MADE Digital initiative, implemented by the Manufacturing Academy of Denmark (MADE), is a research and innovation programme aimed at accelerating the digital transformation of Danish manufacturing companies. The initiative fosters the co-operation between large companies and SMEs with research teams from universities and technical experts from research and technology organisations (RTOs) to jointly develop and implement digital tailor-made solutions that address the specific needs with regards to digital technologies of Danish manufacturing companies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target audience</td>
<td>This initiative targets universities, RTOs and companies (both large companies and SMEs).</td>
</tr>
<tr>
<td>Timetable</td>
<td>This initiative started in 2017 and is programmed to end in 2020.</td>
</tr>
<tr>
<td>Priority industries and technologies</td>
<td>MADE Digital is tailored to provide support to Danish manufacturing companies, often operating in niche markets. In terms of technologies, the initiative covers all technologies contributing to smart manufacturing, notably robotics, the Internet of Things, data analytics as well as augmented reality. More details are provided as part of the description of the implementation.</td>
</tr>
<tr>
<td>Specific approach to breakthrough innovation</td>
<td>The initiative fosters applied research in areas that are relevant to smart manufacturing, and therefore is more focused on accelerating technology adoption and developing new applications of existing technologies rather than breakthrough discoveries.</td>
</tr>
<tr>
<td>Instruments used</td>
<td>MADE Digital programme:</td>
</tr>
<tr>
<td></td>
<td>• Funding for research collaborations between companies, universities and RTOs, in 9 work packages (see section on implementation below).</td>
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<td></td>
<td>Overall, the Manufacturing Academy of Denmark (MADE) also provides other types of support:</td>
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<td></td>
<td>• Open Labs: participants are invited to hear, see and try out state-of-the-art solutions and technologies presented by researchers, technological experts or companies. MADE has hosted open labs with focus on digital automation, additive manufacturing and smart factories.</td>
</tr>
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<td></td>
<td>• Company visits: These take place at one of the MADE member companies. Usually, the company visited is excelling in a particular area and is willing to share the experiences. The visit includes a guided tour in the factory of the company, combined with short presentations on the subject or theme of the visit.</td>
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<td></td>
<td>• Cluster projects for SMEs: led by one of the RTOs in MADE, a group of SMEs with common challenges or needs meet up and share their...</td>
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</table>
experiences as they implement the new technologies or methods in their production or product programs. MADE has held cluster projects about 3D print in production, surface optimization technologies, and flexible feeding solutions for robots.

- Demonstration projects for SMEs: these provide financial support and access to expertise from one of the RTOs in MADE to develop and implement new technological innovations.
- Innovation conferences: researchers introduce the participants to state-of-the-art knowledge and technology, share new insights and findings, and companies and RTOs unfold practical use cases. MADE has held innovation conferences focusing on digital twins, digital supply chains, sensors and quality control.

**Budget of the initiative**

The budget of the MADE Digital initiative is DKK 196 million (EUR 26.24 million), coming from the Innovation Fund Denmark (which invests DKK 79 million, approx. EUR 10.57 million), 49 companies, 6 universities, 3 GTS-Institutes and the Confederation of Danish Industry. Around two thirds of the funding comes from the public sector (including inversions) and one third from industry.

The members of Manufacturing Academy of Denmark (MADE) are Danish companies, research and knowledge institutions and organizations. Approximately two thirds of the industrial members are small companies with up to 100 employees. The members of MADE are each year charged a membership fee, depending on the type of organization and number of employees.

**Responsible policy making body**

MADE Digital was initiated and designed by parties from both industry and research. The initiative is headed by MADE, the Manufacturing Academy of Denmark, an independent association established in 2014 by companies, universities, GTS-Institutes and private funds and associations that today has more than 100 members. The Board of Directors and the Advisory Board are both mainly constituted by members of industry, with a minor representation of academia, and no representation of the Danish government.

**Responsible implementation body**

The implementation of MADE Digital is headed by the independent organisation MADE. Its research projects and innovation activities are scoped by parties from both industry and research. The work packages are implemented by partnerships including companies, universities and RTOs.

**Implementation of the initiative**

MADE Digital is organised around 9 work packages, where large companies, SMEs, research teams from universities and technical experts from the research and technology organisations (RTOs, e.g. the Danish Technological Institute) collaborate to advance research and development of digital solutions in the following areas:

1. **Digital design**: the objective is to develop models and theories of how companies, through data and modular product and production design, can enhance the efficiency of production. Production and product data
are analysed to identify more efficient production systems to then expand them to other companies.

2. **Smart industrial products**: the objective is to develop models of how software and service functions can be built into the industrial products, in order to give Danish companies new advantages in global competition. It also focuses on effective and secure methods to collect, store and analyse data from products.

3. **Digital manufacturing processes**: the objective is to use digital simulation models to optimize additive manufacturing processes (3D printing) by identifying errors and defects during the process.

4. **Intelligent supply chain**: the objective is to create common, integrated IT-solutions across entire supply chains, in order to optimize manufacturing processes.

5. **Smart factories**: the objective is to use digital technologies to create integrated production systems that are connected and communicate with each other, so as to allow for smarter production processes.

6. **Digital assistance tools**: the objective is to find effective ways of using augmented reality and virtual reality to improve and fasten the training of employees and provide real-time instructions at production sites.

7. **Organising digital production**: the objective is to develop models that help companies choose the relevant technologies and making the necessary organisational or business model changes to earn benefits of applying new digital technologies.

8. **Automation with collaborative robots**: the objective is to make collaborative robots more flexible (i.e. able to handle small batches and easy to adjust) through the application of digital technologies and software.

9. **Sensor technology and production data**: Through advanced sensors, this work package will produce 3D models of products, production processes and equipment (also called “digital twins”) able to perform quality control in real time, with the objective of reducing defects and waste of resources.

<table>
<thead>
<tr>
<th>Regional (subnational)</th>
<th>This initiative engages universities, RTOs and firms from across the country.</th>
</tr>
</thead>
</table>
| International aspects  | While the MADE Digital initiative is aimed at developing a Danish approach to Industry 4.0, hence, all the companies, universities and RTOs participating in projects are based in Denmark, MADE has an international dimension: it is the one-stop-shop for international partners wishing to find and cooperate with the leading Danish companies and research institutions, and represents Danish universities and industrial partners in large EU projects. MADE is currently involved in several international projects and initiatives focusing on research and innovation in manufacturing. For example, it is a partner of the European RobotUnion project (where 40 start-ups in the
robotics industry will be provided with funding and acceleration services in order to develop new and innovative robot solutions) and the smart manufacturing pillar of Impact Growth programme (an acceleration programme supporting start-ups and SMEs with funding, training and mentoring).

| Monitoring and evaluation strategies | Each work package of the MADE Digital initiative is headed by one of the academic partners. Every half year, the steering committees in each work package report on the progress made in the specific work package projects and agree on a plan for the coming six months. The achieved and potential commercial results of the projects are also followed closely (estimated in terms of revenue increases and production savings).

Overall, since 2014 MADE has organised 35 demonstration projects for SMEs, 17 innovation conferences, 12 open labs, 12 company visits, and 5 cluster projects for SMEs. |
| Critical dimensions | • Bottom-up approach: the initiative gives high autonomy to industry and academic partners to define their research focus and organisation. As a result, the outcomes of the research are highly relevant for industry and have direct applicability.

• Cross-sectoral co-operation allows for knowledge sharing and increases trust among partners. |
### 5. EU – EU Strategy for Artificial Intelligence

<table>
<thead>
<tr>
<th>Objective</th>
<th>The EU strategy for Artificial Intelligence has three main objectives:</th>
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<tbody>
<tr>
<td></td>
<td>• Boost the EU’s technological and industrial capacity in AI and its uptake by the public and private sectors.</td>
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<tr>
<td></td>
<td>• Address the socioeconomic challenges brought by AI.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that an appropriate ethical and legal framework is in place, building on EU fundamental rights and values.</td>
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<tr>
<td></td>
<td>Maximize the impacts of investments on AI at EU and national levels, encouraging synergies and cooperation across the EU.</td>
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</tbody>
</table>

| Target audience | The strategy targets both the private and public sectors. |

| Timetable | The Strategy started to be implemented in early 2019 and it is expected to run into the next decade, possibly until 2027, in line with the multi-annual EU financial framework. |

| Priority industries and technologies | There are no priority industries. However, some of the measures emphasise the application of AI in the fields of health, mobility and manufacturing. |

| Specific approach to breakthrough innovation | The strategy aims at fostering excellence in AI research, leading to breakthrough innovations, but also the diffusion of AI applications. The Coordinated Plan specifies that the European Innovation Council will implement a pilot to support disruptive, cutting-edge AI innovation. |

<table>
<thead>
<tr>
<th>Instruments used</th>
<th>Instruments implemented by the European Commission:</th>
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<tbody>
<tr>
<td></td>
<td>• Investments in AI under the research and innovation framework programme Horizon 2020 (EUR 1.5 billion in 2018-20).</td>
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<td></td>
<td>• Investments in Digital Innovation Hubs (DIHs), to contribute to the adoption of AI by the public and private sectors. DIHs act as one-stop-shops where companies (including SMEs) and the public sector can get access to technology, testing and technical support, financing advice, market intelligence and networking opportunities. They can in particular help companies and public administrations identify necessary datasets, develop algorithms, and help train professionals from the SMEs in the use of AI solutions.</td>
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<tr>
<td></td>
<td>• Fund networks of AI research excellence centres to support collaborative research</td>
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<td></td>
<td>• Establish testing facilities to allow for experimentation of state-of-the-art technology in real-world environments.</td>
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<td></td>
<td>• Formal consultation of stakeholders or experts (e.g. to develop a common strategic research and innovation agenda for AI)</td>
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</tbody>
</table>
- Support the introduction of AI modules in multi-disciplinary Master programmes (e.g. e-health, fintech, e-government) and in adult training programmes
- Strengthen programmes for industrially-oriented PhDs in AI
- Launch a Support Centre for Data Sharing, to propose model contracts for the sharing of private data, and provide practical advice, best practices and methodologies for data sharing and analysis to all actors.

The Plan encourages countries to develop national AI strategies, outlining investment levels and implementation measures. Measures suggested at national level include the implementation of:

- Innovation vouchers, small grants and loans targeting SMEs in their digital transformation and in the integration of AI in products, processes and business models
- Incorporate AI into the curricula programmes for secondary and tertiary education, as well as vocational training.
- Exchange of best practices across countries (e.g. on how to reinforce excellence and retain AI talent, and re- and upskill the current workforce)

**Budget of the initiative**

The EU is investing in AI under the research and innovation framework programme Horizon 2020 (EUR 1.5 billion in 2018-20). Under the next multi-annual financial programme, the Commission has proposed to dedicate at least EUR 1 billion per year from Horizon Europe and the Digital Europe Programme to AI. Options to mobilise resources from the European Fund for Strategic Investments and the European structural and investment funds (ESIF) are being explored. For example, the European Regional Development Fund is expected to invest in AI based on the next generation of Smart Specialisation Strategies.

**Responsible policy making body**

The strategy was developed by the European Commission, which presented the Communication on “Artificial Intelligence for Europe” to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions in March 2018 (European Commission, 2018[13]). Based on this Communication, all EU member states and Norway signed the “Declaration of Cooperation on AI” in the context of the Digital Day 2018 (April 2018). A “Coordinated Plan on AI” was then prepared by the Commission in December 2018 (in the form of annex to the abovementioned Communication) (European Commission, 2018[14]).

**Responsible implementation body**

The European Commission and the EU Member States are responsible for the implementation of the initiative.
### Implementation of the initiative

The implementation of this strategy will consist in the creation of:

- A network of European AI research excellence centres through a mapping of those centres made by the Member States. The European Commission is currently collecting the proposal from Member States.

- Testing facilities (e.g. large-scale pilots) to support the integration of AI in areas such as energy, healthcare, manufacturing and agriculture.

The Commission has also tasked several expert groups in different areas:

- The High-level Expert Group on AI prepared the “Ethics Guidelines for Trustworthy Artificial Intelligence”, released in April 2019. The expert group will also propose policy recommendations on investments and the regulatory framework.

- An Expert Group on Liability and New Technologies is assisting the Commission on drawing up guidance on the development and implementation on EU-wide principles.

- An Expert Group for the Observatory of the Online Platform Economy is exploring policy issues in AI-related regulatory areas, such as data access, online advertising and the role of algorithms in the digital platform economy.

Several workshops have already been organised in the context of the strategy, such as the workshop on the impact of AI in healthcare (May 2019).

This strategy is also supported by the implementation of related initiatives, such as the establishment of the European Open Science Cloud, which will enable researchers to process huge amounts of scientific data generated by research and share their scientific results.

### Regional (subnational) aspects

This strategy has the objective of developing AI ecosystems at the regional and sub-regional level that will bring together local businesses, SMEs, public administrations, training centres. Digital Innovation Hubs (funded with co-investments from the Member States and the Commission) are aimed at facilitating diffusion of AI capacities within each country.

### International aspects

The Action Plan states that the EU will reach out to its international partners and promote AI ethics guidelines in the course of 2019. It also encourages member States and the Union to align their international outreach efforts on AI and ensure that Europe sends consistent messages to the world.

The Union will organise an international ministerial meeting on AI in 2019 with the aim of forging a global consensus on the ethical implications of AI. The Union is also planning to contribute its expertise and dedicated financial means to anchor AI more firmly in development policy, to ensure that AI makes impactful contributions to global challenges (e.g. to develop warning systems in case of extreme weather conditions and natural disasters).
<table>
<thead>
<tr>
<th>Monitoring and evaluation strategies</th>
<th>The Member States and the Commission will monitor progress of the implementation of the plan on an annual basis. In 2019, Member States and the Commission will identify relevant investment parameters and comparable benchmarks for uptake so as to achieve common targets. AI Watch, developed by the Joint Research Centre, will contribute to monitoring AI-related development and will provide a number of analyses to support the implementation of the European AI initiative.</th>
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<tbody>
<tr>
<td>Critical dimensions</td>
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</table>
6. Germany – The Digital Hub Initiative

| Objective | The Digital Hub Initiative aims to foster digital innovation in Germany by attracting digital start-ups to 12 cities specialised in different sectors or technologies\(^1\). Its main objective is to foster co-operations for innovation at two different levels:  
|           | • Within each digital hub, by strengthening the networking between start-ups and scientific institutes, SMEs and large corporations;  
|           | • Between the digital hubs, by encouraging cross-sectoral interactions for innovation, in order to strengthen the network and drive forward the digital transformation.  
|           | This initiative also aims to create and spread the *de:hub* brand to increase the visibility of digital hubs and attract international investors, international founders and skilled workers. |
| Target audience | The initiative targets start-ups, SMEs, corporates, investors and talents. |
| Timetable | The initiative was established in the beginning of 2017. |
| Priority industries and technologies | The 12 Digital Hubs are specialised in different sectors (such as logistics, insurtech, digital health, fintech and cybersecurity) as well as technologies, including AI, IoT and robotics. |
| Specific approach to breakthrough innovation | The Digital Hub Initiative aims to recreate highly innovative and entrepreneurial environments that are similar to Silicon Valley, focused on developing new ground-breaking products and services. It also aims to convert the *de:hub* brand into a synonym of advanced technological innovation. |
| Instruments used | At the Hub level:  
| | • Accelerator programs (e.g. FinTech hub, MediaTech hub, InsurTech hub in Cologne, the Smart Infrastructure hub)  
| | • Testing of new products and services (e.g. Logistics Hubs in Hamburg and Dortmund)  
| | • Matchmaking (e.g. the digital chemistry and health hub, the InsurTech hub in Cologne)  
| | • Open innovation labs (e.g. the Smart Infrastructure hub) |

\(^1\) The 12 Digital Hubs are: Logistics, Hamburg; IoT & Fintech, Berlin; Smart Systems & Smart Infrastructure, Dresden Leipzig; Fintech & Cybersecurity, Frankfurt Darmstadt; Digital health, Nuremberg Erlahgen; Future industries, Stuttgart; Mobility & insurance technology, Munich; Artificial Intelligence, Karlsruhe, Digital chemistry & digital health, Mannheim Ludwigshafen; Insurtech, Cologne; Logistics, Dortmund; Mediatech, Potsdam.
| Budget of the initiative | The German Federal Ministry for Economic Affairs and Energy and the German Trade and Invest (GTAI) finance the Hub Agency over the course of three years. The 12 Digital Hubs are financed by private supporters and partners, and through the development of their own innovation programmes. The 2019 budget is of EUR 5 million. |
| Responsible policy making body | The Digital Hub Initiative was established by the Federal Ministry for Economic Affairs and Energy. |
| Responsible implementation body | The Hub Agency coordinates the hubs and is run by the consultancy RCKT under the auspices of the Ministry for Economic Affairs and Energy. The Digital Hubs themselves are run by independent operators that are their own legal entities. |
| Implementation of the initiative | Each Hub works with start-ups and innovative firms to develop and test their business models for digital products and services. Among the 12 digital hubs are the following: |

- **Insurance Technology, Munich**: This hub aims to attract, inspire and connect key players and disruptors to collaborate on developing ground-breaking, innovative insurance products and services related to AI, digital health, cybersecurity, mobility, wealth management and industry 4.0. Its ecosystem is composed by multiple start-ups and 18 accelerators/incubators, 50 venture and private equity companies, 20 corporates within the Munich area, 24 universities, 16 R&D institutes, tech-companies such as Microsoft, Amazon and IBM that are homebased in Munich, as well as the local, state and federal government.

- **Fintech, Frankfurt**: This hub gathers players from the financial sector and the entrepreneurial scene, who work together on new security products and infrastructures for the financial market. Innovative entrepreneurial ideas are developed into market-ready products in the environment of scientific institutions (e.g. Goethe University Frankfurt), and in partnership with companies from the financial, IT, and consulting sectors.

- **MediaTech, Potsdam**: This hub gathers media and technology companies and innovative start-ups. It houses research institutions and universities from science (e.g. the science park Potsdam-Golm), telecommunications (e.g. the Fraunhofer Institute for telecommunications), design (e.g. the school of design thinking) and software engineering (e.g. the Xu exponential university). Projects on future media technologies and 3D human body reconstruction have proven relevant to the media industry and beyond to other industrial consumers.

- **Artificial Intelligence, Karlsruhe**: This hub is home to the development and application of Artificial Intelligence (AI). It builds upon the region’s unique set of competences in the field of software...
development, and relies on the joint research activities of established players in co-operation with entrepreneurs in the areas of energy, mobility and production. The hub collaborates with more than 4 400 digital companies from the region and builds on the cooperation between excellent research centres such as FZI Research Centre for Computer Science, the Fraunhofer Institute for Optronics, System Technology and Image Processing and the Karlsruhe Institute of Technology.

<table>
<thead>
<tr>
<th>Regional (subnational) aspects</th>
<th>This initiative covers the majority of German regions. Digital Hubs reflect the competitive strengths of those regions in specific sectors and technology fields.</th>
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<tbody>
<tr>
<td>International aspects</td>
<td>All Digital Hubs engage in international partnerships. As an example, the Future Industries Digital Hub in Stuttgart partners with Hewlett Packard (USA) and Nokia (Finland); the Mobility Digital Hub in Munich collaborates with Facebook (USA); and the MediaTech Digital Hub in Potsdam partners with Rolls-Royce (UK) on data innovation.</td>
</tr>
<tr>
<td>Monitoring and evaluation strategies</td>
<td>Since its launch, more than 450 start-ups, 80 SMEs, 100 research institutes and 200 international companies have joined the network.</td>
</tr>
</tbody>
</table>
| Critical dimensions            | • Digital hubs benefit from existing innovation ecosystem in the selected cities (i.e. access to talent, capital, good infrastructures). They offer opportunities for close cooperation and networking of interested industry stakeholders, including start-up companies, established companies and research institutions.  
• The communication efforts of the initiative (e.g. the creation of the de:hub brand) increases the international visibility of German digital start-ups. |
| More information               | [https://www.de-hub.de](https://www.de-hub.de) |
### 7. Germany – German AI Strategy

<table>
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<tr>
<th>Objective</th>
<th>The German AI Strategy has three main objectives:</th>
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<tr>
<td></td>
<td>1. Making Germany and Europe a leading centre for AI and thus help safeguard Germany’s competitiveness in the future.</td>
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<td>2. Responsibly develop and use AI that serves the good of society.</td>
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<td></td>
<td>3. Integrate AI in society in ethical, legal, cultural and institutional terms in the context of a broad societal dialogue and active political measures.</td>
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<table>
<thead>
<tr>
<th>Target audience</th>
<th>The Federal Government targets the federal states, the business community, as well as scientific and academic organisations.</th>
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<tr>
<th>Timetable</th>
<th>The Federal German Government concluded its national AI strategy in November 2018. The strategy is conceived as a &quot;living document&quot; to be continuously updated.</th>
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<tr>
<th>Priority industries and technologies</th>
<th>The German AI strategy is a horizontal strategy addressing all sectors. It is not focused on individual approaches or applications, but on building a broad-based, dynamic ecosystem for AI that makes it possible for researchers to respond quickly to the latest trends and developments</th>
</tr>
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<tr>
<th>Specific approach to breakthrough innovation</th>
<th>Action field 3.2 focuses on “Innovation competitions and European innovation clusters”. It includes making AI one of the priorities for the envisaged Agency for Breakthrough Innovations, and providing funding for entirely new ideas for technologies and/or business models, including ideas based on multiple disciplines, with researchers enjoying a maximum of scope in their work. Other measures include:</th>
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<tr>
<td></td>
<td>• Forming a European innovation cluster providing funding for cooperative research projects over the next five years.</td>
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<tr>
<td></td>
<td>• Considering the launch of the Important Project of Common European Interest (IPCEI, pursuant to Art. 107 Treaty on the Functioning of the European Union) in the field of AI, jointly with other European partners.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Instruments used</th>
<th>• Funding for joint projects bringing together science and academia with the aim of creating pilot AI applications</th>
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<tbody>
<tr>
<td></td>
<td>• Strengthening research, e.g. by funding the development of the Centres of Excellence for AI</td>
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<tr>
<td></td>
<td>• Funding for start-ups’ instruments (e.g. High-tech Start-up Fund, INVEST - Grant for Venture Capital)</td>
</tr>
<tr>
<td></td>
<td>• Funding for the establishment of at least 100 additional professorships in AI and to support junior researchers</td>
</tr>
</tbody>
</table>
• Grants for business R&D and innovation on training initiatives, introduction of test beds and living labs
• Public awareness campaigns and other outreach activities (e.g. organisation of round tables with data protection authorities and business association aimed at developing joint guidelines for the use of AI systems in a way that is compatible with data protection rules)
• Development of a new Skilled Labour Strategy
• Establishment of instruments for consumer protection, social inclusion and citizen’s privacy

Budget of the initiative

In the 2019 federal budget, the Federation allocated a total of EUR 500 million to beef up the AI strategy for 2019 and the following years. Up to and including 2025, the Federation intends to provide around EUR 3 billion for the implementation of the Strategy. The leverage effect this will have on business, science and the Länder is expected to at least double the amount available.

Responsible policy making body

The strategy was jointly developed by the Federal Ministry of Education and Research, the Federal Ministry of Economic Affairs and Energy, and the Federal Ministry of Labour and Social Affairs. The strategy was conceived on the basis of results of a nationwide online consultations and several expert workshops.

Responsible implementation body

The three Ministries mentioned above (see responsible policy making body) are equally responsible of coordinating the implementation of the strategy of the federal government.

Implementation of the initiative

The strategy is structured in twelve fields of action, each specified with concrete actions. Actions include:

• Increase the AI-specific support for SMEs through the assistance of ‘AI trainers’ in the existing Mittelstand 4.0 centres of excellence
• Creation of a German AI Observatory tasked with monitoring the uptake and the impact of AI and in shaping multi-disciplinary studies and projects looking into how technology can be designed to be socially compatible.
• Increase the funding of already existing projects such as the technology-neutral Central Innovation Programme for SMEs (ZIM), which allows companies to choose their own innovation projects.
• Support cross-company and cross-institutional flagship projects in AI and make them known all over the country. To this end, the objective is to organise “road shows” for German SMEs and start-ups and their international strategic partners, where they will be able to visit the main facilities and have the chance of experiencing the ongoing AI projects through the organisation of demonstration centres.
### Regional (subnational) aspects

The German AI strategy establishes regional Centres of Excellence for Labour Research aimed at bringing together scientists and practitioners to develop innovative strategies and concepts for using AI to design positive working environment. Another related regional activity is the creation of Centres for the Future, aimed at offering innovative upskilling opportunities for employees, works councils (i.e. organisations complementing trade unions aimed at facilitating the communication between workers and companies) and self-employed workers. The Centres for Future will be firstly implemented in eastern Germany and then they will be extended to the entire country.

### International aspects

One field of action focuses on national and international networking. Several bilateral exchanges are already established (e.g. the German-Swedish innovation partnership; Memorandums of Understanding with Japan). The strategy aims in particular at establishing a Franco-German research and innovation network on AI. The government is also engaging in an European and transatlantic dialogue on the human-centric use of AI in the world of work, where both researchers and practitioners will be involved in identifying potential conflicts of interests associated with the use of smart and autonomous systems in the workplace.

### Monitoring and evaluation strategies

N.A.

### Critical dimensions

Cross-disciplinary research and close cooperation with stakeholders from the public sector, civil society and the business community are emphasised as important for implementation.

### More information

[https://www.ki-strategie-deutschland.de/](https://www.ki-strategie-deutschland.de/)
8. Ireland – The National Digital Research Centre

<table>
<thead>
<tr>
<th>Objective</th>
<th>The National Digital Research Centre (NDRC) is a publicly funded early investor in digital technology start-ups. It uses an accelerator model that provides them with an integrated offering of knowledge, experience, expertise and a modest amount of capital to enable them to become more efficient and investor-ready.</th>
</tr>
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<tbody>
<tr>
<td>Target audience</td>
<td>NDRC targets early-stage digital and technology start-ups and investors.</td>
</tr>
<tr>
<td>Timetable</td>
<td>The National Digital Research Centre was established in 2007.</td>
</tr>
<tr>
<td>Priority industries and technologies</td>
<td>NDRC does not have a specific sectoral or technology focus but supports start-ups developing new digital products and services in the areas of healthcare, entertainment, education and green tech.</td>
</tr>
<tr>
<td>Specific approach to breakthrough innovation</td>
<td>NDRC supports highly innovative early stage digital start-ups, providing them with capital and business development support.</td>
</tr>
</tbody>
</table>
| Instruments used | • Early stage investment and development support to start-ups through the **NDRC LaunchPad accelerator**, an investment programme supporting digital entrepreneurs. It consists of a 12-week programme of training and mentoring where small teams focus on increasing their revenue and investment potential by developing commercially viable start-ups.  
• Medium stage investment and development to start-ups via the **NDRC Dublin Accelerator**. It began in March 2019 and aims at supporting, growing and accelerating late-stage start-ups by investing EUR 135,000 in each company. Unlike the LaunchPad Accelerator, it does not provide tailor-made training and mentoring support.  
• Support business R&D through the **NDRC Inventorium toolkit** that provides methods and processes for building collaborations, generating ideas, and turning those ideas into business propositions.  
• Mentoring programmes and trainings for start-ups through the **NDRC VentureLab**. It provides science-based start-ups that have a strong IP proposition with investment, training and mentoring programme in order to be able to attract follow-on investments.  
• Market analysis through the **NDRC Catalyser**. It targets start-ups with deep research-based expertise and technology that address significant global unmet market needs or problems. It offers an investment of up to EUR 100,000 and six months of training programme. |
- Organisation of workshops and networking events (e.g. NDRC office hours)
- Organisation of Open Night events, where entrepreneurs can learn more about the NDRC approach to investing in start-ups, and what accelerator programmes are all about.

**Budget of the initiative**
The total income for the financial year 2017 was of around EUR 4.7 million, most of it from government funding (EUR 4.2 million), and the rest from realisations of investments (EUR 20,000) and other income (EUR 516,000). Cumulative follow on investment increased by 26% year on year, from EUR 152 million by 2016 to EUR 192 million by 2017.

**Responsible policy making body**
The NDRC was founded by a consortium of tertiary education institutions: University College Dublin, Dublin City University, Dun Laoghaire Institute of Art, Design and Technology, the National College of Art & Design, and Trinity College Dublin. It is supported by the Department of Communications, Climate Action and Environment.

**Responsible implementation body**
The National Digital Research Centre (NDRC) is a publicly funded independent enterprise. It operates under a concession agreement with the Minister of Communications, Climate Action and Environment.

**Implementation of the initiative**
NDRC counts over 300 people connected to the enterprise and it has invested in 40 research-inspired start-ups and joint venture projects with research and company partners. NRDC’s investment programmes are divided in the centres of Galway, Dublin and Waterford and its activities are implemented through the above-mentioned programmes. In order to be enrolled in these programmes, every entrepreneur that wants to propose a new business idea has to apply to the NDRC open calls. Then, successful candidates will be invited to NDRC’s offices to pitch and to receive feedback on how to improve and further develop their businesses through their accelerators and business catalysers.

**Regional (subnational) aspects**
- 

**International aspects**
Approximately 20% of NDRC founders are international. Since January 2018, NDRC provides support to the Oman Technology Fund and the Oman Government’s technology investment fund to run a three-month pre-seed accelerator programme by providing accelerator expertise and personnel. Several start-ups NDRC has invested in received offers from some of the world’s leading software providers such as Amazon Web Services that provides on-demand cloud computing platforms to individuals; Google Cloud Platform, and Microsoft Azure, a cloud computing service created by Microsoft for building, testing, deploying and managing applications and services through a global network of Microsoft-managed data centres.
Monitoring and evaluation strategies

Following its first investments in 2008, NDRC is part of the Irish innovation ecosystem and serves as bridging the gap between research and commercial enterprise. Since 2008, NDRC has invested in 255 start-ups, of which the 25% secured more than EUR 250 000 and created more than 1 600 jobs directly and indirectly. In the last six years, the market capital of NRDC companies increased from EUR 39 million to EUR 486 million. Moreover, in 2017, 29% of NDRC companies had women in the founding team and start-ups with females in the founding team. Compared to other companies, these are more likely to secure follow-on investment. In 2018 NDRC was ranked second in the ‘World Top Business Accelerator – Collaborating with University’ category of the UBI's ranking.

Critical dimensions

The flexibility and willingness to adapt enable the National Digital Research Centre to sustain the number of ventures it has supported in recent years, but it has equally allowed it to explore new pathways to expansion. NDRC has underlined the importance of diversity as a factor for start-up success.

More information

www.ndrc.ie
9. The Netherlands – Smart Industry Field labs

<table>
<thead>
<tr>
<th>Objective</th>
<th>The Smart Industry Field labs are public-private partnerships aimed to develop, test and implement Smart Industry solutions. Even if the specific objectives of the Field labs differ a lot, they all aim at speeding up the digitalization within Dutch businesses. Each field lab is a consortium of an average of 20 partners, of which more than 15 are firms.</th>
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<tbody>
<tr>
<td>Target audience</td>
<td>The Dutch Field labs have been created by different stakeholders. They target private firms (including SMEs) as well as research and education institutions.</td>
</tr>
<tr>
<td>Timetable</td>
<td>The Dutch field labs were initiated in 2014 with the Smart Industry Action Agenda.</td>
</tr>
<tr>
<td>Priority industries and technologies</td>
<td>Field labs often target specific sectors and combine various ICT technologies. Some targeted sectors are: agri-food, health, high-tech, and chemical and process industries.</td>
</tr>
<tr>
<td>Specific approach to breakthrough innovation</td>
<td>The Smart Industry Field labs are not specifically focused on fostering breakthrough innovation but at developing new applications of digital technologies in order to serve specific industry needs.</td>
</tr>
<tr>
<td>Instruments used</td>
<td>Most Field labs are active in the following activities:</td>
</tr>
<tr>
<td></td>
<td>• Support collaborative research, development and innovation between firms, knowledge institutions and education institutes.</td>
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<tr>
<td></td>
<td>• Ecosystem building, scouting, brokerage and networking (e.g. support the participation of partners in networking events such as the annual national Smart Industry event).</td>
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<td>• Concept validation and prototyping.</td>
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<td></td>
<td>• Testing and validation.</td>
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<td></td>
<td>• Public awareness campaigns and other outreach activities (e.g. workshops and visits to the field lab).</td>
</tr>
<tr>
<td></td>
<td>• Education and skills development for students and employees.</td>
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<tr>
<td></td>
<td>A few Field labs are also active in the following:</td>
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<td></td>
<td>• Incubator/accelerator support (the Multimaterial 3D printing field lab)</td>
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2 This fiche focuses on 10 Dutch field labs: Region of smart factories, CAMPIONE, FreshTeq, The Garden, Smart Connected Supplier Network (SCSN), Flexible Manufacturing, Smart Dairy Farming/JoinData, Smart Bending Factory, Multi material 3D printing, Ultra-Personalised Products and Services (UPPS).
Development of standards and norms (the Smart Connected Supplier Network Field lab)

Budget of the initiative

More than EUR 72 million have been invested since 2015 in the ten Field labs covered in this fiche, of which EUR 31 million come from private investments. Other funding sources include regional, national and EU funding instruments as well as funding from research and education institutions.

Responsible policy making body

The Smart Industry Field labs have been established by the Ministry of Economic Affairs and Climate Policy.

Responsible implementation body

The Program Bureau Smart Industry, in which the Ministry of Economic Affairs and Climate Policy is also represented, provides the field labs with their status and provides advice if needed. Important decisions for the field labs are in general made in consultation with the partners.

The implementation process is defined by the Smart Industry Implementation Agenda 2018-2021. Every field lab has one coordinating partner, which is in most of the cases the initiator of the field lab. Some of them have firms as coordinators, while others have a network or a regional development organisation.

Implementation of the initiative

Field labs are on average active in 8 projects in which they generate knowledge and develop new technologies. Examples of these activities are:

- Smart Dairy Farming/JoinData: The project developed a data hub for sharing, reusing and combining data of cows from multiple farms, collected through sensor technology. This helps farmers take decisions.

- Smart Bending Factory: The factory aims to develop a worldwide innovation model for the metal sector by developing a production facility for small batches that are cheaper and 5 times faster using a Sophisticated Intelligent Analyzer software (SOPHIA).

- Region of smart factories: This field lab based on a consortium of 32 companies and knowledge institutes conducts research into a range of new technologies for the “Zero defect factory”. Pilot projects include the use of new factory automation for ‘zero defect’ production of electric shavers, the use of new sensors for the production of optical lenses and the development of dashboards for data visualization.

- The Garden: The project focuses on security in the implementation of Industry 4.0. The partners experiment with existing and new products and services for secure, real-time and reliable data and information exchange.

Regional (subnational) aspects

Most field labs (e.g. Region of Smart Factories, Fresh Teq, Smart Diary Farming and Ultra-Personalised Products and Services) have a link with regional Smart Industry initiatives such as the BOOST regional initiative in the East of the Netherlands. BOOST is an accelerator of Smart Industry in which entrepreneurs, educational institutions, intermediaries and the
government work as a unit in various projects to realize a competitive and sustainable manufacturing industry in the eastern Netherlands. Smart Industry field labs collaborating with BOOST are the Smart Bending Factor, the Smart Dairy Farming and the Ultra-Personalized Products and Services.

In South Holland, 15 field labs are brought together for the Regional Investment Program to form a regional network for cross-sector cooperation and innovation.

International aspects

The majority of the field labs presents an international dimension. Five of the ten field labs cooperate with foreign research institutes (e.g. Flexible Manufacturing) and partners from other countries (e.g. in the context of European projects in the case of The Garden field lab or with the German Industrial Data Space initiative in the case of the Smart Connected Supplier Network). Two field labs (Smart Dairy farming/JoinData and FreshTeq) aim to focus on the international market.

The Smart Industry field labs have also the opportunity to present themselves as a Digital Innovation Hub at the European level and to connect to the pan-European network, figuring inside the “Digital Innovation Hubs Catalogue” database funded by the European Commission.

Monitoring and evaluation strategies

The impact of the field labs has been monitored in the period 2016-2017. The 10 field labs have been able to generate a relatively high impact on various indicators since 2015, including indicators of job creation and knowledge/technology. Five of the 10 field labs mention that their partners generated on average 79 jobs per field lab, benefiting from field lab support. Five field labs refer to spin-off creation as a result of their activities.

Critical dimensions

- Strong link between the national and regional Smart Industry initiatives and efforts in consolidating networks have helped projects be more successful.
- The interdisciplinary approach to research and innovation through the involvement of diverse partners from different disciplines and the cooperation with multiple stakeholder projects have also helped develop core research.

More information

10. Sweden – AI Innovation of Sweden

| Objective | AI Innovation of Sweden, a national centre for AI-related research, innovation and education, aims to enhance Sweden’s research in and adoption of AI by:  
- Accelerating applied AI research and innovations  
- Creating a dynamic, world-class environment for AI research that attracts international academic and industrial researchers as well as research institutes  
- Developing and providing methods and infrastructure for managing and using large quantities of data with strong focus on data security  
- Support industry-science co-operation and stimulate the mobility of people between academia and industry  
- Increasing the number of undergraduate students in AI to build human capital  
Promoting the responsible use of AI and the development of unbiased tools |
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<tr>
<td>Target audience</td>
<td>The initiative targets universities and research institutes, large businesses, SMEs, AI focused start-ups, and public research institutions and government agencies (such as the Swedish National Space Agency and the Swedish Association of Local Authorities).</td>
</tr>
<tr>
<td>Timetable</td>
<td>The AI Innovation of Sweden was launched in February 2019.</td>
</tr>
<tr>
<td>Priority industries and technologies</td>
<td>AI Innovation of Sweden covers all sectors of the economy and focuses on AI related technologies.</td>
</tr>
<tr>
<td>Specific approach to breakthrough innovation</td>
<td>The initiative aims at fostering breakthrough AI research and innovation, in particular by attracting leading researchers in the field, building a data-sharing ecosystem to enable new opportunities for AI applications and facilitating science-industry research co-operation.</td>
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<tr>
<td>Instruments used</td>
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- Creation of an AI research hub in Gothenburg where academics, researchers and firms collaborate in applied AI-related projects  
- Collect and manage datasets acquired or produced by AI Innovation of Sweden and make it accessible for research and innovation purposes under safe conditions.  
- Provision of counselling and guidance on legislative procedures, laws (e.g. GDPR) and the regulatory landscape related to data collection and sharing (e.g. regarding personal data, intellectual property rights, legal agreements and contracts)  
- Support to obtain research funding from national and EU programmes for AI projects, by providing advice on funding sources and strategies, and support them through the applications process.  
- Provision of datasets to academic institutions in order to support AI-related courses. |
- Outreach activities to promote responsible use of AI and the development of unbiased tools (e.g. participation in the AI for Good Global Summit, 28-31 May 2019)

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<tr>
<th>Budget of the initiative</th>
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| AI Innovation of Sweden is funded by Vinnova (SEK 30 million, approx. EUR 2.8 million), the Region Västra Götaland and more than 40 partners from industry (e.g. Capgemini, Ericsson, Volvo) and the public sector (e.g. the Swedish National Space Agency), as well as universities (e.g. University of Gothenburg and the Chalmers University of Technology) and research institutes (e.g. the Research Institute of Sweden and the Swedish Law and Informatics Research Institute).

Partners are committed to provide funding for an initial period of three years, which can be then expanded for a second period of three years. Their annual contribution depends on the type of organisation: SEK 500,000 (EUR 47 000) per year for companies with more than 250 employees, universities and research institutes (the contributions of the two last can also be in the form of in-kind contributions); SEK 250,000 (EUR 23 700) per year for medium-sized companies of less than 250 employees, consultancy companies and public partners (e.g. municipalities, regions); SEK 100,000 (EUR 9 480) for small companies with less than 50 employees; and in-kind contributions in the case of AI focused start-ups (by invitation only).

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<tr>
<th>Responsible policy making body</th>
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<tr>
<td>The Swedish Ministry for Energy and Digitalisation appointed the Lindholmen Science Park for the conceptualisation of the initiative.</td>
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<th>Responsible implementation body</th>
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<tr>
<td>The implementation of the AI Innovation of Sweden is managed by Lindholmen Science Park (Gothenburg), which is also hosting the centre in its Ericsson Building.</td>
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<tr>
<th>Implementation of the initiative</th>
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| The implementation of AI Innovation of Sweden is based on co-operation and partnership. Companies and organisations who partner with the centre want to benefit from sharing information and datasets, as well as scientific capabilities. The AI Innovation of Sweden initiative has several pillars:

**1) Data Factory**: it aims to accelerate research and innovation by making data available to AI researchers and developers. It will in particular:

- Provide the expertise and infrastructure for managing and accessing such datasets (whether donated, acquired or newly developed), including IT infrastructures, tools and expertise related to data engineering processes and machine learning.
- Provide legal, ethical and technical frameworks so that datasets are used according to agreed principles and constraints, and provide training on such frameworks for the users.
- Initiate and run projects that generate strategically important datasets. Collaborative projects between partners are prioritised.
(2) Co-location sites: it consists in the creation of open arenas and meeting places for AI related discussions between researchers, developers, start-ups and students across a broad range of disciplines. The goal is to increase co-operation and knowledge sharing, as well as to create internationally attractive hubs for talent.

(3) International Portal: see section on international aspects below.

(4) Competence and knowledge: it aims to be a primary competence centre for best practice, business intelligence, methods and networking. It will regularly invite partners to participate in workshops, seminars and conferences, and will provide expertise on legal and ethical aspects around data use for innovation.

(5) Co-operation and funding support: Maximise partners’ funding opportunities by providing qualified support on how to obtain national and international research funding.

### Regional (subnational) aspects

Co-location sites (also called local nodes) are expected to be set up across Sweden. The first site is based in Gothenburg, and the next will be located in Stockholm and Malmö (subject to availability of funding). The objective is to co-locate approximately 100-150 researchers, developers and students across a broad range of disciplines at each node, so that they can meet and collaborate.

### International aspects

This initiative aims to establish an International Portal to enhance international outreach by:

- Developing relationships with internationally recognised ecosystems and providers of relevant tools and methodologies.
- Establishing relationships to enable the international funding of projects (e.g. EU projects).
- Supporting the recruitment of international talent
- Stimulating the exchanges between researchers and students with international universities.
- Creating network opportunities for Swedish companies and organisations in order to identify new potential foreign collaborators and customers
- Developing frameworks for exchange of data with international parties, especially to accelerate innovation and development in and for the public sector.

### Monitoring and evaluation strategies

AI Innovation of Sweden was only launched recently and has not yet introduce an official monitoring and evaluation strategy.

### Critical dimensions

The strategy aims to address all obstacles to AI innovation, by addressing consequently funding, skills, data access, legal and regulatory conditions and relevant connections of the innovation ecosystem.

### More information

https://www.ai.se/en
## 11. United Kingdom – Digital Catapult

### Objective

The Digital Catapult centre in the UK is an advanced technology innovation centre established by Innovate UK. It supports the early adoption of advanced digital technologies with the objective of making the UK businesses more competitive and productive. The main objectives of the Digital Catapult are:

- Providing technical and innovation expertise to deliver interventions, facilities and programmes that overcome key barriers to the growth of digital technology companies;
- Acting as an independent and transnational interface between the UK’s digital sector and the wider UK economy;
- Working with key industries to shape national strategies around the adoption and innovation of emerging digital technologies;
- Representing the needs of start-ups and scale-ups and informing government and industries to design policy intervention or industry initiatives that overcome common barriers and accelerate growth.

### Target audience

Digital Catapult targets:

- Small and large businesses: the centre aims to accelerate the sustainable growth of small innovative businesses, supporting them to develop new business models using advanced digital technologies and it also helps larger organisations access the right advanced digital technology experts. Among those are Airbus, Visa and Thales.
- Investors and accelerators: the centre aims to introduce the investment community to talented technologists and early-stage businesses that are developing advanced digital solutions within manufacturing and creative industries.
- Research and academia: the centre facilitates direct contact between businesses and researchers to benefit their research and relevant industry connections. It has strong relationships with leading universities, such as UCL, the University of Edinburgh and the University of Brighton.

### Timetable

Digital Catapult was established in 2013.

### Priority industries and technologies

Digital Catapult focuses on three priority technologies: Artificial Intelligence, Future Networks (e.g. 5G and Internet of Things) and Immersive technologies (e.g. virtual and augmented reality).

It focuses on two industries: manufacturing and creative sectors.

### Specific approach to breakthrough innovation

Digital Catapult provides businesses with access to advanced technological expertise and infrastructure (e.g. high capacity computing, Augmented Reality labs) to enhance businesses capacity to conduct breakthrough innovation.
Three types of support activities are provided by the Digital Catapult:

**Support for business innovation**
- Organisation of pit stop events – where start-ups can meet and pitch to industry decision makers, potential partners, clients and investors – and open calls aimed at facilitating opportunities between large and emerging companies.
- Participation in business-funded R&D projects aimed at developing innovative technology and product solutions.
- Engage in formal consultation of stakeholders or experts (e.g. cooperation with the Open Data Institute and other partners to facilitate data exchange).
- Act as ‘neutral convenor’ to accelerate development of national standards (e.g. ethics framework for AI and machine learning).
- Provision of technology transfer and business advisory services (e.g. through the Things Connected Network, see section on implementation below).

**Ideas, facilities and expertise:**
- Provide companies with access to Digital Catapult in-house technical and industry expertise to better understand the potential application of emerging technologies (e.g. immersive and AI).
- Provide accessible infrastructure to enable prototype and testing of new products (e.g. the Machine Intelligence Garage, see section below on implementation).
- Provide companies with access to leading edge immersive production and demonstration facilities (the Dimension Studio).
- Work closely with industry on large scale demonstrators and test beds to show firms the potential applications of new technologies (e.g. Things Connected Network).

**Engagement, events and market intelligence**
- Organisation of networking events and joint workshops to bring together different parts of the economy and the digital sector and create synergies and new opportunities to work together.
- Production of market analysis about current and future trends and technology developments (e.g. to help inform national strategies such as the AI Review and Made Smarter).

**Budget of the initiative**

The annual budget allocated for the Digital Catapult is of around £20 million (EUR 23 million). Its establishment and operation is supported by substantial investment from both public and private sector. Moreover, it generates its funding broadly equally from three sources:

- Business-funded R&D contracts they gained (competing with any other businesses offering R&D services);
- Collaborative applied R&D projects that are partly publicly and partly private funded;
Core public funding for long-term investment in infrastructure, expertise and skills development.

**Responsible policy making body**

Digital Catapult has been initiated by Innovate UK, the public agency supporting business innovation in the UK.

**Responsible implementation body**

Digital Catapult is a company limited by guarantee (CLG), a separate legal entity from Innovate UK that has its Board with an Executive Management team responsible for the day-to-day management. The Chair of the Digital Catapult Board, together with the Digital Catapult Chief Executive and the Innovate UK Observer, are the prominent figures in terms of management of the policy making decisions.

There are a number of committees and boards that collaborate with the above-mentioned key roles (i.e. Chair of the Board, Chief Executive and Innovate UK Observer), among them, the Digital Catapult Board, the Digital Catapult Board Sub-Committees and the Digital Catapult Management Team.

From an organisational hierarchy perspective, Digital Catapult is organised functionally, ensuring clear ownership and responsibility for the activities and outputs. To drive the delivery of programmes, Digital Catapult has established multi-functional matrix teams to focus on each programme area, encompassing technologists, business specialists, project and product managers and innovation experts, all supported by centralised Finance, Sales and Bidding, IT & Engineering, HR and Marketing & Events functions.

**Implementation of the initiative**

The Digital Catapult centre is currently implementing a number of diverse initiatives, including:

- The Machine Intelligence Garage helps early stage AI companies access to computational power and expertise to support them develop new machine learning and artificial intelligence solutions.
- The Things Connected initiative offers businesses access to low-power wide area network (LPWAN) technologies, in order to experiment and prototype new Internet of Things (IoT) products and services.
- The Dimension Studio provides businesses with access to Microsoft’s Mixed Reality Capture technology (also known as holographic capture, or H-Cap), so that they can create a new range of products and experiences using virtual and augmented reality technologies. The studio is being run by a consortium (Hammerhead, TimeSlice and Digital Catapult).
- Augmentator is a 10-week programme supporting early stage businesses developing innovative and commercially-focused applications of augmented and virtual reality. This programme gives companies technical and business mentorship.

**Regional (subnational) aspects**

Digital Catapult’s main centre is located in central London, but regional centres have also been created in Brighton, North-East and Tees Valley and Northern Ireland.
| **International aspects** | Digital Catapult has built a strong international dimension joining and bringing small UK companies into European R&D consortia. Through these partnerships, Digital Catapult has worked with over 40 European companies and 14 European universities, secured EUR 4.7 million of funding and cascaded EUR 1 million to UK businesses. As the UK will soon leave the European Union, Digital Catapult will also focus more on global opportunities. |
| **Monitoring and evaluation strategies** | Digital Catapult is evaluated by an independent consultancy appointed by Innovate UK. An initial evaluation has been concluded in June 2017, with further evaluation reports planned for 2018 and 2020. Digital Catapult is committed to implementing the highest standards for monitoring and evaluation. To do that, it follows a 3–stage process of monitoring and evaluation built around the logic model approach implemented through the (i) collection of activity and output data on Digital Catapult engagements with SMEs, academics and other organisations; (ii) the collection of primary data of internal capabilities for firms; (iii) modelling projected impact using activity and primary data collected in the previous two stages. |
| **Critical dimensions** | Digital Catapult was established with the objective of bridging the knowledge gap between concept and commercialisation of new products and services based on most advanced digital technologies. One of the critical dimensions enabling such bridging is Digital Catapult’s efforts to co-operate and engage with diverse partners and investors, including research councils, trade associations and other digital and data innovation organisations. |
| **More information** | Digital Catapult (2019[9]), “Case study on the Digital Catapult, United Kingdom: Contribution to the OECD TIP Digital and Open Innovation project”, available [here](#). |
12. United Kingdom – AI Sector Deal

| Objective | The AI Sector Deal is the first commitment from the UK government and industry to realise AI technology’s potential. It reinforces the broader UK Industrial Strategy.  
Key objectives of this strategy are to:  
- Attract and retain both domestic and global AI talent  
- Deliver major upgrades to the UK digital and data infrastructure  
- Ensure that the UK is the best place where to start and grow an AI business  
- Contribute to communities’ prosperity by spreading the benefits of AI across the country  
- Promote inclusive and sustainable AI guaranteeing diversity in AI workforce  
- Improve technical education and create a National College of Digital Skills. |
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<tr>
<td>Target audience</td>
<td>The AI Sector Deal targets industry, public research institutions and government.</td>
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<tr>
<td>Timetable</td>
<td>The AI Sector Deal has been established in April 2018 and will end in 2027.</td>
</tr>
<tr>
<td>Priority industries and technologies</td>
<td>The AI Sector Deal focuses on AI-related technologies. It covers all sectors of the economy.</td>
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<tr>
<td>Specific approach to breakthrough innovation</td>
<td>The strategy supports breakthrough research and innovation in the field of AI.</td>
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</table>
| Instruments used | - Grants for business R&D and innovation (e.g. support clusters by investing in Tech City UK and digital infrastructure)  
- Support for the application of AI in services sectors (e.g. create Next Generation Services Industrial Strategy Challenge)  
- Provision of Centres of Excellence grants (e.g. Alan Turing Fellowship programme to support an initial cohort of 10 AI Fellows)  
- Funding for the creation of Master’s degree programs with an initial cohort of 200 students per year  
- Introduction of special visas for exceptional AI talents and the establishment of 200 AI additional doctoral studentships  
- Funding for 450 new PhD places |
• Reform of technical education with the launch of T levels and investment in STEM subjects.
• Establishment of a Centre for Data Ethics and Innovation
• Increase EPSRC funding to data science and AI research (e.g. grants funding for the Alan Turing Institute)
• Science and innovation challenges, prizes and awards (e.g. the integration of AI into future Industrial Strategy Challenge Fund challenges)
• Explore new data sharing frameworks (e.g. Data Trusts)
• Support of relevant clusters and other networking and collaborative platforms (e.g. regional clusters)
• Create a GovTech Fund to support innovative tech solutions for more efficient public services
• Improve technical education and STEM skills
• Create new National Retraining Scheme with focus on digital skills
• Dedicated support to new research infrastructures (e.g. the National College of Digital Skills, the Alan Turing Institute and the Centre for Data Ethics).

Budget of the initiative

The AI Sector Deal budget consists in a package of £0.95 billion (EUR 1.1 billion) of support for the sector, including government, industry and academic contributions up to £603 million (EUR 706 million) in newly allocated funding and up to £342m (EUR 400 million) of existing budget. Among the Government contributions, £300 million (EUR 351 million) has been allocated by the Engineering and Physical Sciences Research Council (EPSRC) to fund research related to data science and AI, £93 million (EUR 109 million) has been allocated to fund the robotics and AI in extreme environments programme. Among the Industry contributions, £69 million (EUR 81 million) has been allocated to support the development of robotics and AI in extreme environments and up to £12 million (EUR 14 million) for the Next Generation Services.

This support complements and leverages some of the £1.7 billion (EUR 1.99 billion) that has been announced under the cross-sectoral Industrial Strategy Challenge Fund.

Responsible policy making body

The AI Sector Deal has been established by the UK Department for Business, Energy & Industrial Strategy and the Department for Digital, Culture, Media & Sport. These Government Departments will establish an AI Council as a central forum where industry, academia and government leaders can come together to identify opportunities and issues as well as actions to address them. The main aim of the AI Council will be to provide strategic leadership and momentum in delivery.
Responsible implementation body

The new government Office for AI will be established with responsibility for implementing this AI Sector Deal. It will support the AI Council, which will oversee and drive the implementation of the deal. The Office for AI will have to agree on implementation plans for each section of the deal, including agreed success metrics. It will report to the AI Council regularly and will be subject to challenge sessions from government ministers on progress in implementing the AI Sector Deal. Finally, a Centre for Data Ethics and Innovation will be tasked with ensuring safe, ethical and ground-breaking innovation in AI and data-driven technologies.

Implementation of the initiative

The AI Sector Deal strategy has a well-defined implementation plan and its key deal activities are:

Q2 2018:
- Launch of the Sector Deal, Establishment of AI Council, interim Centre for Data Ethics and Innovation, and Office for AI.
- First meeting of the AI Council
- First funded challenges are launched, including Next Generation Services

Q1 2019
- Annual review of the AI Sector Deal
- Among the many projects designed by this strategy, the AI Sector Deal strategy wants to implement the Turing Fellowship programme both to attract and retain the best research talent in AI from around the world to the UK. This will put the infrastructure in place to train future generations of AI talent. Moreover, through this strategy, the Government wants to create Ada, the National College of Digital Skills, which will train up to 5,000 students over the next seven years for a wide range of digital careers. Finally, a Centre for Data Ethics and Innovation will be tasked with ensuring safe, ethical and ground-breaking innovation in AI and data-driven technologies.

Regional (subnational) aspects

The AI Sector Deal ambition is to foster AI adoption across the country. It aims at reinforce existing technology clusters around the country (e.g. Edinburgh, Belfast, Bristol and Cambridge) by providing support needed for AI businesses thrive. The strategy commits to invest:
- £21m in Tech City UK over 4 years, to become Tech Nation and support regional tech companies fulfil their potential.
- Over £1bn in next generation digital infrastructure to ensure the whole of the UK is digitally connected.

International aspects

The strategy sets the government commitment in promoting the UK AI businesses through trade missions and take steps to attract AI entrepreneurs to the UK. As part of the government’s broader commitment to increasing investment and exports, AI will benefit from the nine new Trade
Commissioners responsible for leading export promotion, inward and outward direct investment, and trade policy overseas.

Such efforts are already having effects. Beyond Limits, a private company based in California, chose the UK for its international base for global expansion, where there is a deep pool of AI and data science talent. Astroscale, a Japanese company, will develop a world leading capability in AI technology for cleaning up space debris servicing in the UK. This investment is expected to generate over 100 high-value engineering jobs in the UK within five years. Finally, the Vancouver based venture capital firm Chysalix is establishing its European HQ in the UK, where it will strongly invest in robotics and AI and will engage with UK universities and centres of excellence.

### Monitoring and evaluation strategies

The Strategy has been recently adopted and there has not been an evaluation of impact undertaken yet. However, the UK government released in May 209 a report that explores the progress in the implementation of the AI strategy during its first year of application.

### Critical dimensions

Partnership between government and industry: each of the areas of focus of the strategy include actions to be undertaken by the government and by industry. These have been set collaboratively, and are expected to bring coherence and increase impacts of actions.

### More information

References


Hanson, R., A. Reeson and M. Staples (2017), *Distributed Ledgers: Scenarios for the Australian economy over the coming decades*, CSIRO, Canberra, https://doi.org/10.4225/08/597b89ba1a94e.


