



#DSM

Digital Single Market

ARTIFICIAL INTELLIGENCE FOR EUROPE

1. WHAT IS ARTIFICIAL INTELLIGENCE?



Artificial intelligence (AI) refers to systems that show intelligent behaviour: by analysing their environment they can perform various tasks with some degree of autonomy to achieve specific goals.



Mobile phones, e-commerce tools, navigation systems and many other different sensors constantly gather data or images. AI, particularly machine-learning technologies, can learn from this torrent of data to make predictions and create useful insights.

2. WHY IS IT IMPORTANT?

Artificial intelligence can significantly **improve people's lives** and bring major benefits to our society and economy through **better healthcare, more efficient public administration, safer transport, a more competitive industry and sustainable farming**. AI can be used to make more accurate and faster medical diagnoses, carry out dangerous and repetitive tasks and free up valuable time. It can also help in the fight against cybercrime and minimise the use of electricity.

Fewer traffic accidents

Better use of energy and water resources

Less risk of work-related injuries

Help surgeons operate more precisely

Smart machines that minimise their environmental impact

By 2025 the economic impact of the automation of knowledge work, robots and autonomous vehicles will reach between €6.5 and €12 trillion annually.



Europe is behind in private investments in AI: €2.4-3.2 billion in 2016, compared to €6.5-9.7 billion in Asia and €12.1-18.6 billion in North America.

3. WHAT IS THE EU'S ROLE IN ARTIFICIAL INTELLIGENCE?

The Commission presented a strategy on AI in April. On this basis, European countries have agreed to work together to reach significant levels of investments and coordinate on data, ethics and skills. The Commission is facilitating and enhancing cooperation on AI across the European Union to boost the EU's competitiveness and ensure trust based on EU values.

The coordinated plan wants to ensure complementarity and synergies between national and EU level actions. By mid-2019, all EU Member States* will adopt their own AI strategy for which the coordinated plan provides a strategic framework. Some countries already started:

TARGETED AI STRATEGIES

France, Finland, Sweden, the UK and Germany

AI RELATED ACTIONS IN DIGITAL STRATEGIES

Denmark, Luxembourg, The Netherlands and Ireland

CURRENTLY DEVELOPING POLICIES

Austria, Belgium, the Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Poland, Portugal, Slovenia, Slovakia and Spain

* Norway and Switzerland have participated in the discussions on an European approach to Artificial Intelligence and Norway has signed the Declaration on Cooperation on Artificial Intelligence

4. HOW MUCH IS THE COMMISSION GOING TO INVEST IN AI?

The European Commission has already invested significant amounts in artificial intelligence (2014-2020), cognitive systems, robotics, big data and future and emerging technologies to help Europe be competitive.



AI-RELATED AREAS

Around **€1.1 billion** under Horizon 2020 between 2014-2017 on AI-related areas (robotics, big data, health, transport, future and emerging technologies).



ROBOTICS

€700 million under Horizon 2020 + **€2.1 billion** from private investment in one of the biggest civilian research programmes in smart robots in the world.



SKILLS

€27 billion through European Structural and Investment Funds, on **Skills development** out of which European Social Fund invests, **€2.3 billion** specifically in digital skills.

More investment is coming **now until the end of 2020**:



RESEARCH & INNOVATION

Under Horizon 2020 **€1.5 billion** for the period 2018-2020

€20 billion

of combined public and private investment for the period 2018-2020

To establish a solid base for AI in the future, more investment is needed **after 2020**:



AI

€20 billion per year of combined public and private investment

€1 billion per year

through Horizon Europe and the Digital Europe Programme

PROJECT EXAMPLES

AGRICULTURE



AI can improve the process and minimise the use of fertilisers, pesticides and irrigation and provide better productivity, food and reduce environmental impact.

MARS

Mobile robot that plants seeds while workers monitor the process from anywhere.

Contribution to all ECHORD++ experiments: €19.7 million

DATA & EHEALTH



AI can recognise a cardiac arrest during emergency calls faster and more frequently than the medical dispatcher.

KConnect

Multi-lingual text and search services that help people find the most relevant medical information available.

Contribution: €3 million

PUBLIC ADMINISTRATION AND SERVICES



AI can provide early warnings and prevent natural disasters; or simulate contagion in pandemic events to save human lives.

SmokeBot

Civil robots support fire brigades in search and rescue missions to perform in harsh conditions.

Contribution: €3.8 million

TRANSPORT



AI can minimise wheel friction of a suspended train against the track while maximising the speed and impact and enables autonomous driving.

VI-DAS

Automated sensors detect possible dangerous situations and accidents. The driver is alerted and road safety is improved.

Contribution: €6.2 million

MANUFACTURING



AI can predict maintenance and breakdowns in smart factories to improve work experience.

SATISFACTORY

Collaborative and augmented-reality system to increase work satisfaction in smart factories.

Contribution: €4 million

SERENA

AI techniques to predict maintenance of industrial equipment.

Contribution: €5.5 million

