

## 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

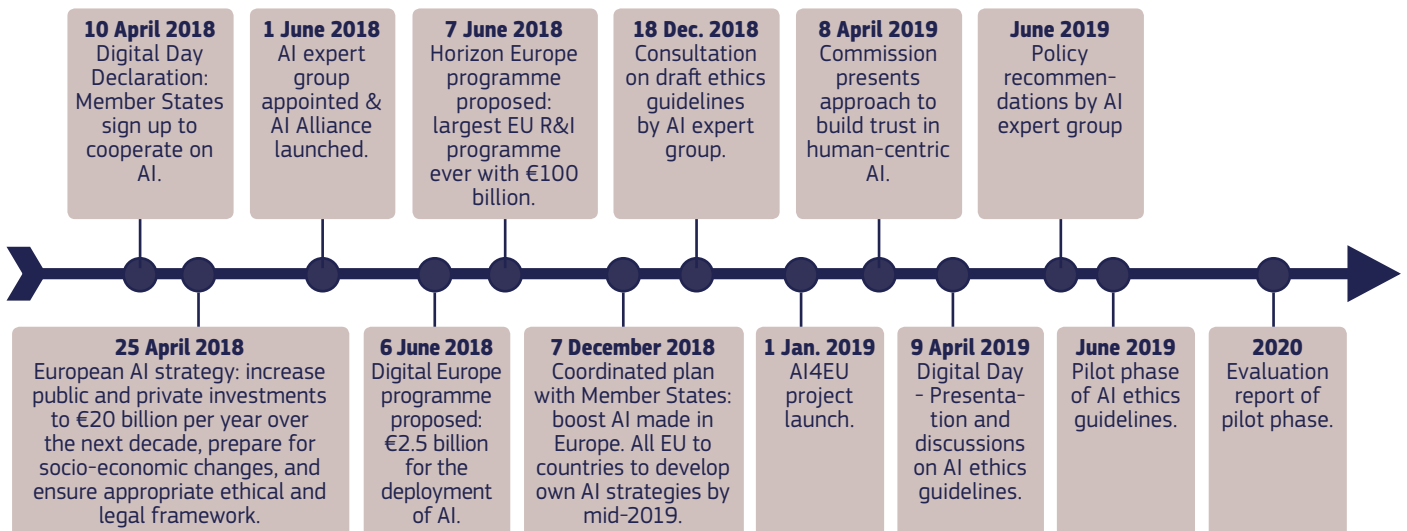
By 2025 the economic impact of the automation of knowledge work, robots and autonomous vehicles will reach between €6.5 and €12 trillion annually.



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 EU is facilitating and enhancing cooperation on AI across the Union to boost its competitiveness and ensure trust based on EU values. Its approach to AI and robotics deals with technological, ethical, legal and socio-economic aspects to boost the EU's research and industrial capacity and to put AI at the service of European citizens and economy.



## 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 **€2.6 billion** over the duration of Horizon 2020 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.

#### Trimbot2020

The project develops an intelligent gardening robot which can trim hedges, roses and bushes.

*Contribution: €5.4 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*

