



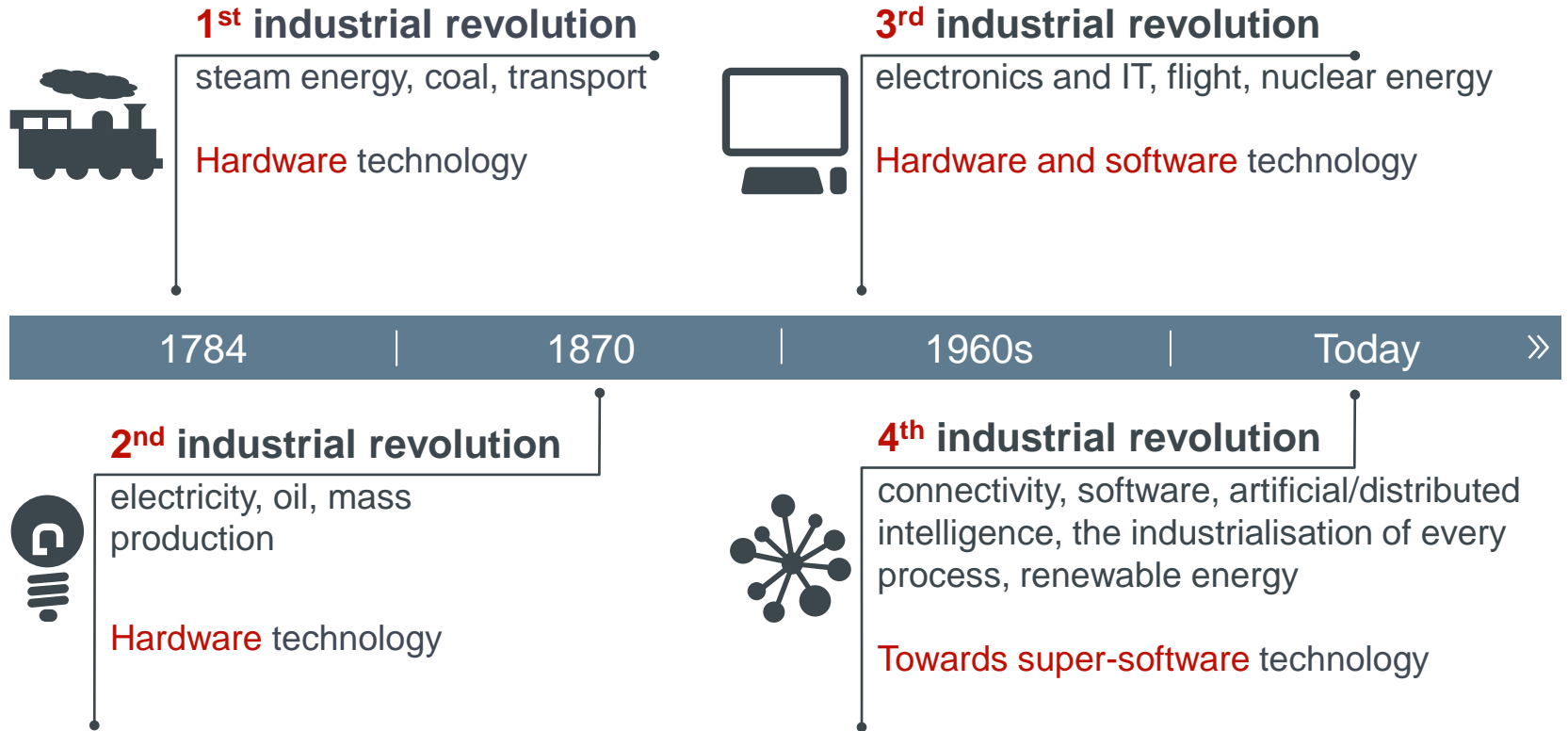
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Patents and the Fourth Industrial Revolution

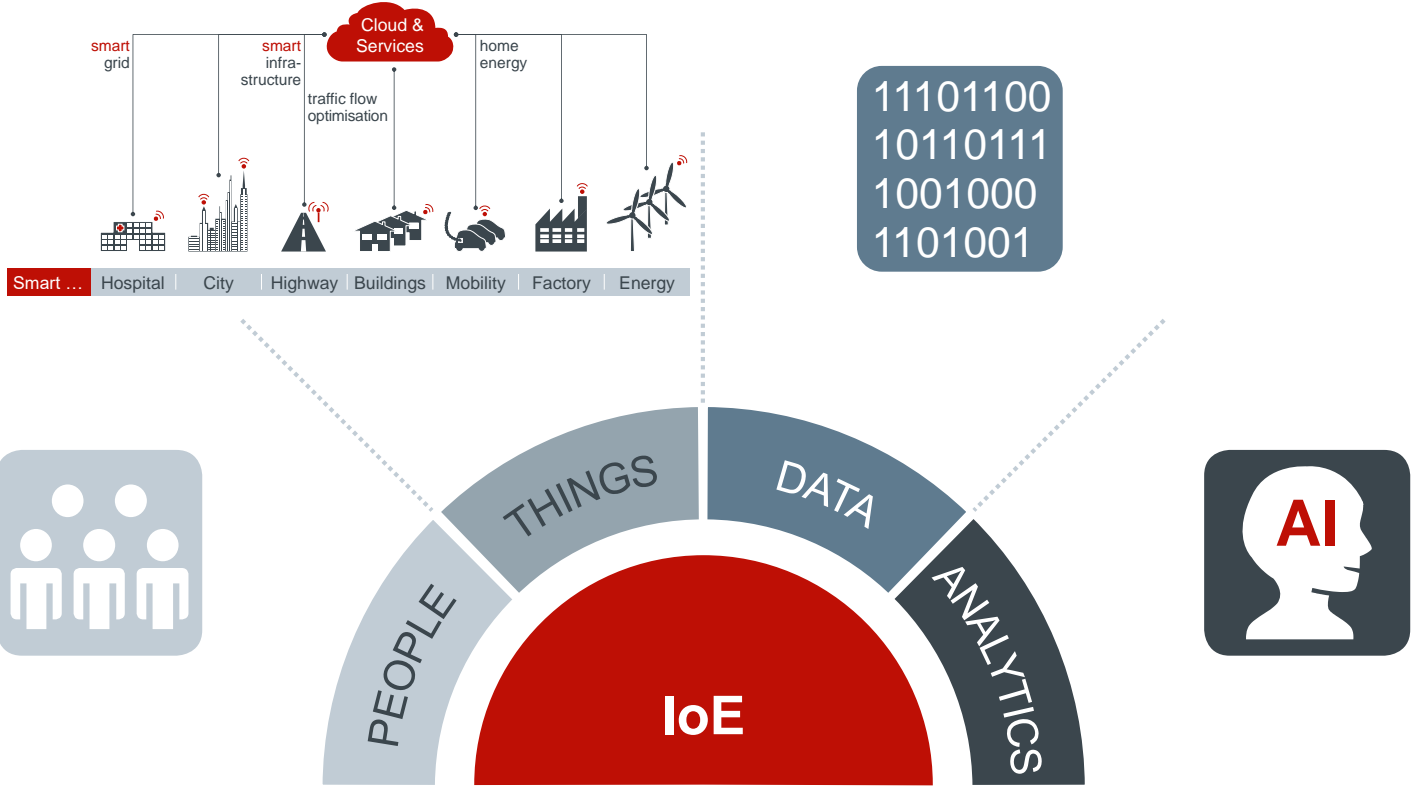
Innovation strategies for connected technologies



Industrial revolutions and the patent system



Internet of Everything (IoE)



Cartography of the Fourth Industrial Revolution

Core technologies

Embodied in connected objects
Collection and transfer of data



Networked sensors



5G connectivity



Radio Frequency ID (RFID)

Enabling technologies

Used in combination with connected object
Store, process and analyse the data



Cloud computing

Artificial Intelligence



3D systems

Application domains

Combinations of core and enabling technologies



SMART health



SMART Home

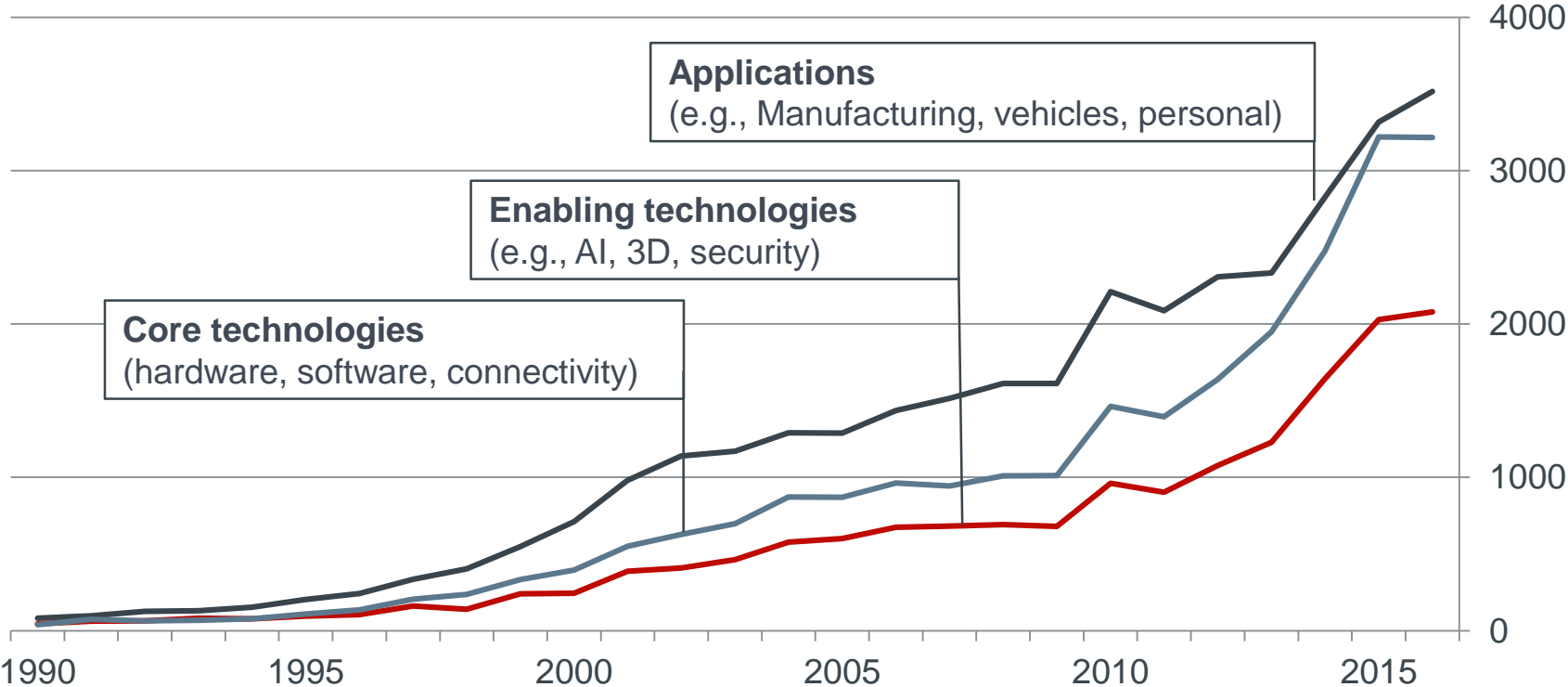


SMART infrastructure

SMART manufacturing

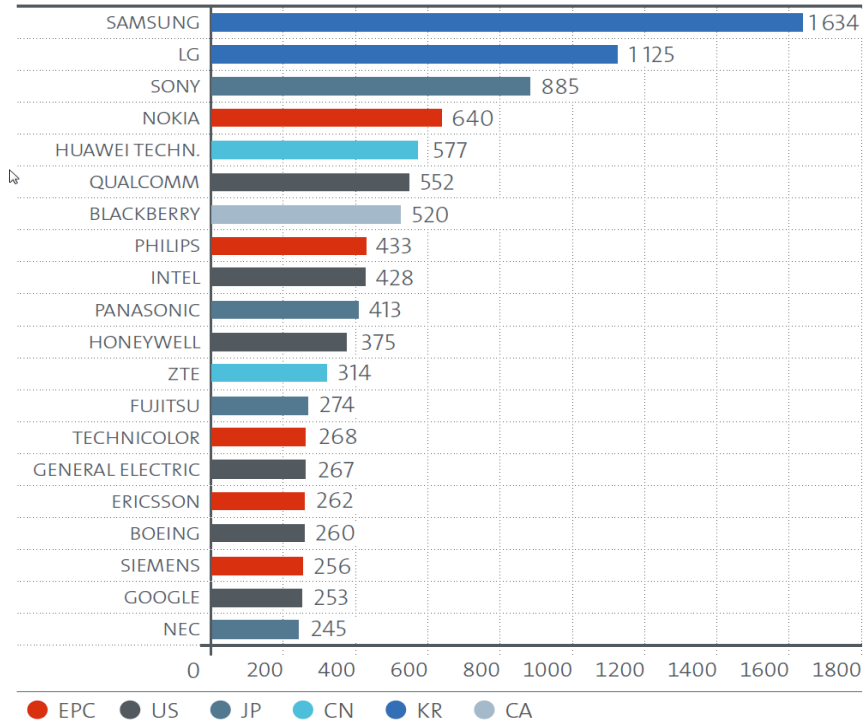


The 4th industrial revolution in EP applications

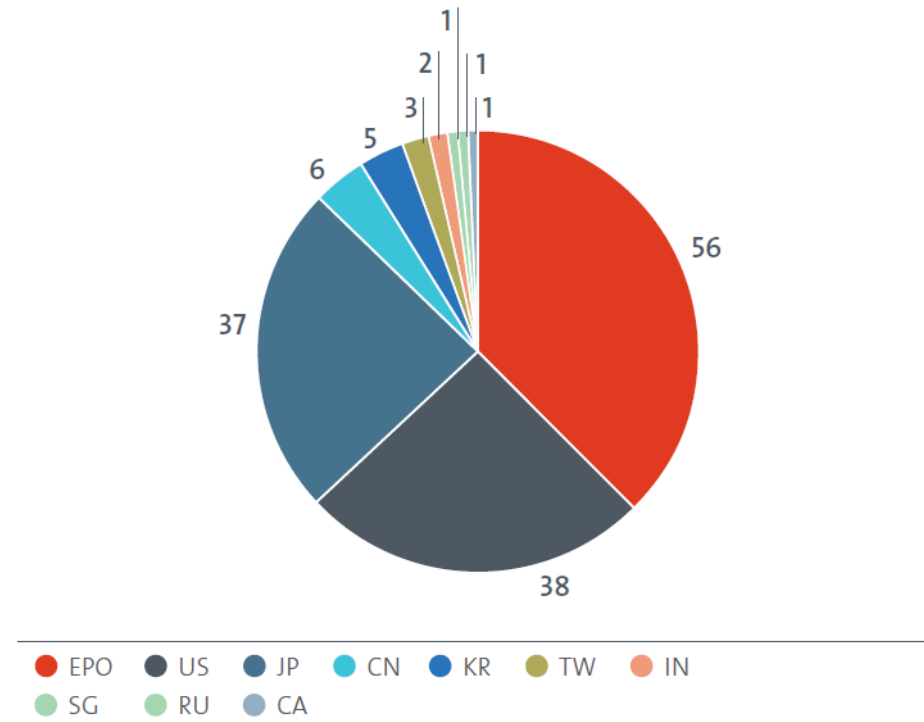


Origins of top applicants in 4IR technologies

Top 20 applicants

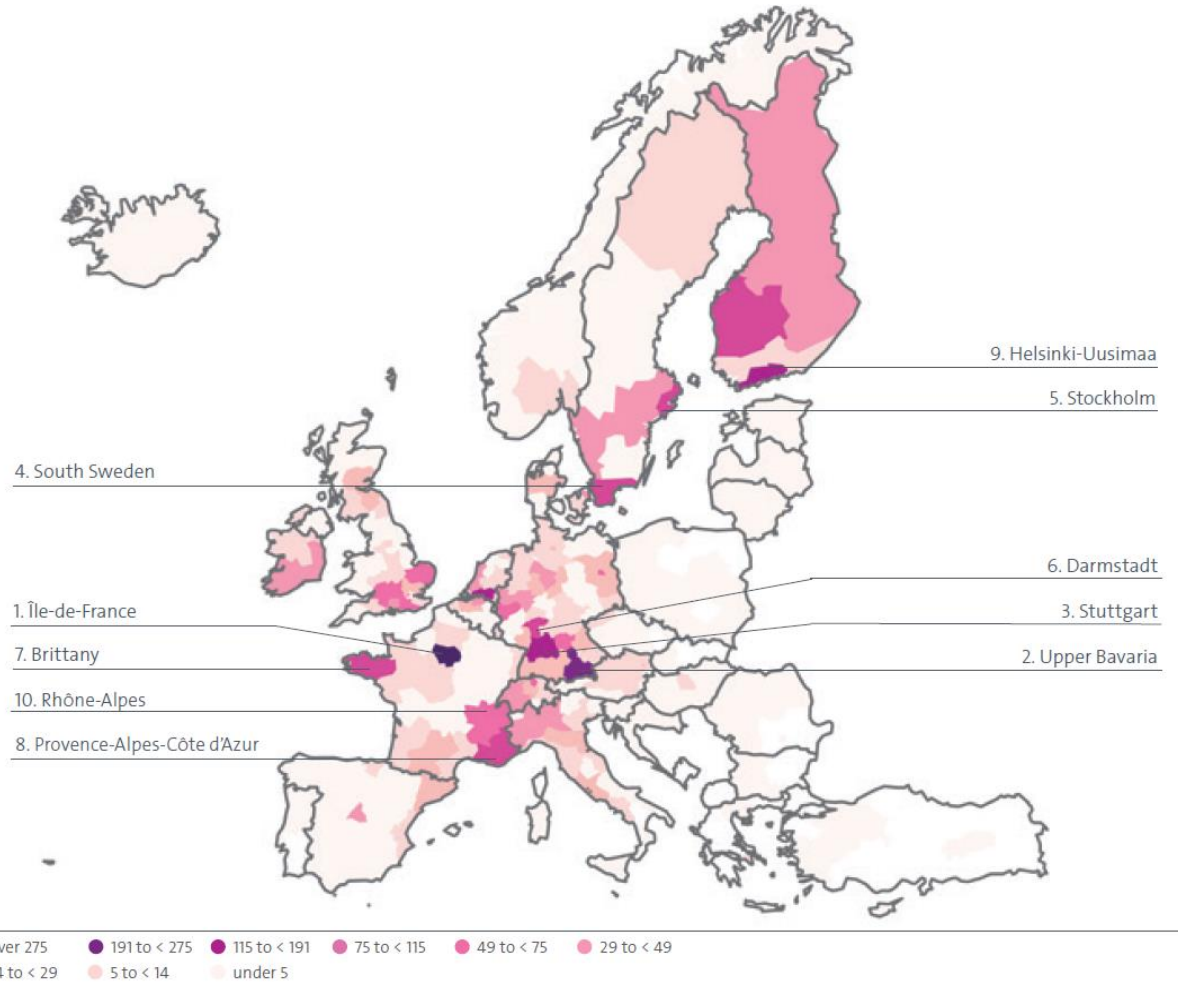


Top 150 applicants

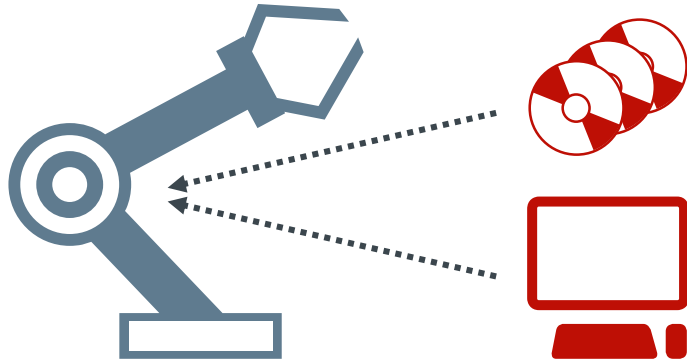


4IR innovation clusters in Europe 2011-2016

4



It's all about software

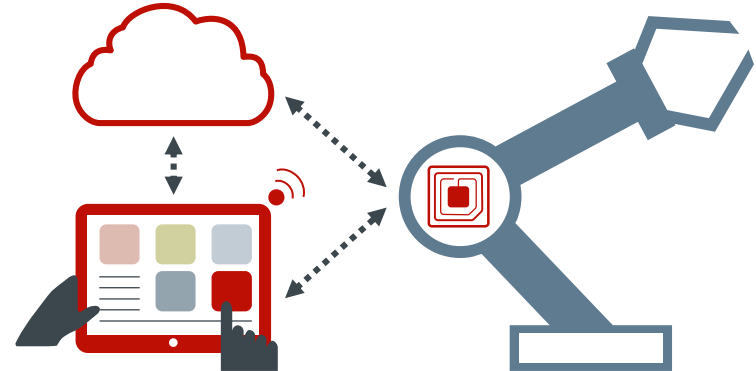


Today

Advanced machines using standard software
(advances from improving the machine)

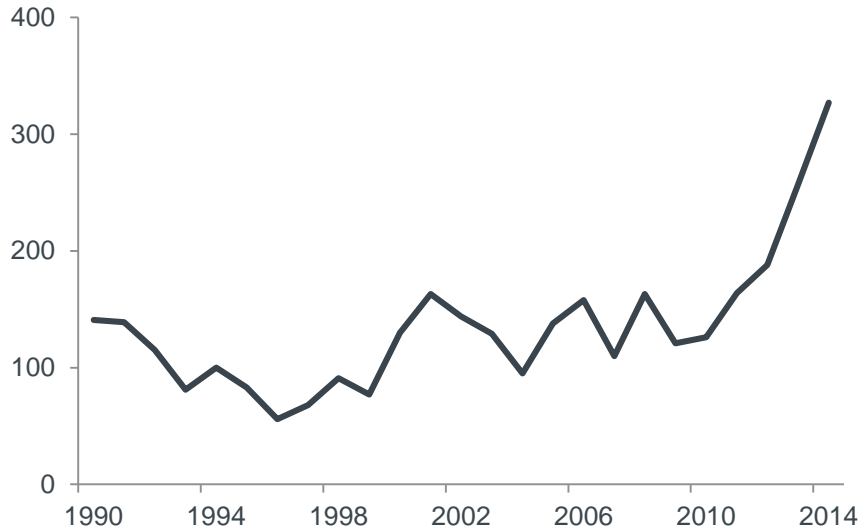
4th Industrial Revolution

Advanced software using standard machines
(advances from improving the software)

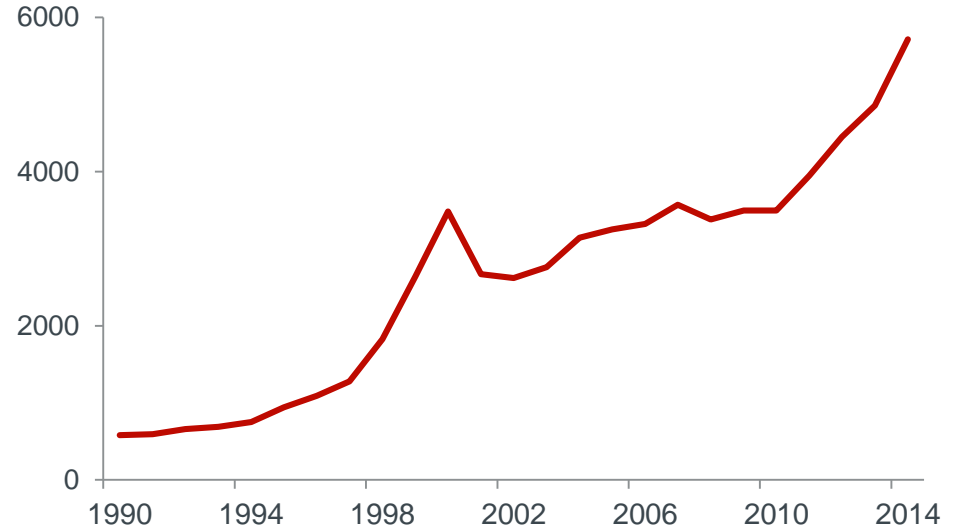


Artificial intelligence in European patent applications

EP applications in **core AI**



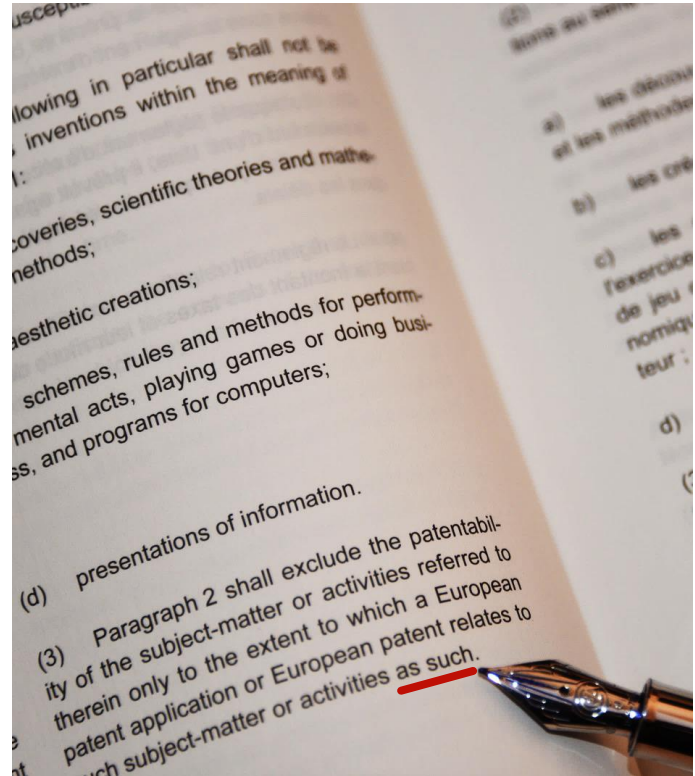
EP applications **related to AI**



Source: EPO. The number of European patent applications in core AI technologies corresponds to EP/WO families in the CPC class G06N7, G06N5, G06N99 and G06N3. The number of European patent applications related to AI is derived from a full text search for related machine learning terminology in a corpus of EP/WO families. The results are presented by oldest priority date.

Software and patents at the EPO

- European Patent Convention: computer programs cannot be patented "**as such**"
- **Computer implemented inventions** (CII) can be patented as a technical solution to a technical problem





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Thank you for your attention!