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MAGAZINE

The narrow path of artificial intelligence

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The Italian brains behind the world of robots. When it comes to the spread of artificial intelligence in businesses and in the public administration, our country is lagging. But it shines with Germany in research worldwide. This is the snapshot after the study by Ahk Italia and Deloitte

The study shows a substantial alignment between Italy and Germany regarding the challenges perceived by companies. In fact, Italian and German companies identify two major hurdles in the implementation of artificial intelligence: on the one hand, the lack of appropriate skills, on the other hand, the methods of integrating new technologies in corporate roles and processes and the impact in terms of business models. Consistently with these results, a clear majority of companies in both countries is planning on hiring many or some new profiles in the coming years (67% for Italian companies and 80% for German ones).

Germany has decided to invest 600 million euros by 2020 in public investments to integrate artificial intelligence into production processes. Italy is taking its first, more timid steps, committing 70 million euros over the next two years.
Our country does not stand out for new technologies in private companies, thus being the structure of the Italian industrial system – largely composed of SMEs – to be affected. And this applies, except for some cases of excellence, also for the use of artificial intelligence in the public administration.

Globally, competition is being pushed by the US and CHINA, the two economic superpowers. The number of companies that have integrated AI technologies is just over 2 thousand and just over a thousand respectively. they are followed by the UK (392) and Canada (285), India, Israel, France and Germany (between 150 and 100), Sweden and Spain (just over 50), Holland, Japan and Switzerland (40), and finally Italy around at 30 together with Poland, Australia, Ireland, South Korea and Singapore, ahead of Russia (17). When comparing macro-regions, the European Union invests 1 billion euros against the 4 of the US and 7 of China.

However, the scenario is brighter as the quality of AI research is a European record, especially in Italy and Germany, which – thanks to the knowledge produced by centers of excellence – will see the adoption of new technologies and models of business as early as next year.

Europe is the continent that produces the highest number of scientific publications in the sector: 28% of the international Scopus database (the largest database of peer-reviewed scientific

literature) is of European authors against 25% of Chinese and 17% % of American authors.

Moreover, it is the value of the publications that widen the gap. The ratio between the number of publications accepted and those submitted shows it and proves the quality of research in the old continent.
In 2018, in fact, approximately 70% of the requests presented to the Association for the Advancement of Artificial Intelligence (Aaai), the largest international scientific community for the development of new information technologies, came from China and the USA.
At the same time, though, it was the Italian and German authors who saw their research more accepted: 41% against 28% of Americans and 21% of Chinese. Also, Germany and Italy come in second and fourth among the countries whose projects received funding from the European Research Council (ERC) in 2019.

Among the examples of our local excellence, the study by Ahk Italia and Deloitte highlights how Italian scientists have an impact, also from Italy, in the strategies being developed in Germany. Two experts from FBK (Oliviero Stock and Paolo Traverso), help the German government in the commission created to evaluate research on AI.

The system initiatives that are pursuing the objective of combining forces of this reality that is fragmented but that at the same time has an enormous potential for economic and social impact revolve around two initiatives in particular: the European Confederation of laboratories for AI (Claire), which also includes the center of excellence for German Research on artificial intelligence (Dfki), a public-private institution in which Google has also participated since 2015.

Also starting from last year, Italy has gathered around the National Interuniversity Consortium for Computer Science, CINI, the best brains active on AI issues and created the National Laboratory of Artificial Intelligence and Intelligent Systems, AIIS, which includes over 600 researchers, at least 80 of whom come from FBK. What are the leadership areas? We can mention, by way of example, the use of AI for essential public services such as health. With the Da Vinci technology (produced in the US), Italy is at the forefront in Europe for the spread of robotic surgery in hospitals, and for the international training of 4.0 surgeons at the School of Robotic Surgery of Grosseto.

Europe is forecasting that globally, from now to 2030, there will be an Artificial Intelligence (IA) market amounting to 15 million billion dollars, corresponding to 14% of the world GDP. We know that, in order to seize the opportunities, it will be essential to appropriately invest in knowledge, transform existing business models or introduce new ones, and constantly update the skills needed. In one word, it will be increasingly important to #learntolearn

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