Algorithms, key intangible assets in the finance industry

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Diario Expansión (Spain)

An algorithm is a sequenced series of instructions in which certain inputs are transformed into outputs; in other words a procedure for solving problems by following precise instructions. Its uses in the financial sector are many and varied: from enhancing the user experience and the offer of personalised services to fast, automated decision making and operating efficiency. For example, improvements in the predictive power of risk models obtained through algorithms that process large volumes of customers' income and expenditure data have led to faster loan approvals while at the same time limiting the probability of default and so reducing transaction costs. In the field of financial advisory services, automated tools are increasingly being used to help customers make investment decisions, thus reducing costs, reaching customer groups that prefer to interact through digital channels and opening up this kind of advice to a wider public.

Algorithms have become important assets giving the banks that develop them competitive advantages. In view of the substantial investment involved in developing algorithms to drive innovation, there is a need to strengthen the protection provided by the legal frameworks currently in place, which in our opinion offer limited protection as well as varying from one country or jurisdiction to the next. There are no industrial or intellectual property laws explicitly relating to the protection of algorithms, so in the absence of specific regulation different means of protection can be considered, such as patents, copyright or protection of know-how. Greater uniformity of protection among the various countries would help companies' protection strategies. One possible route to consider would be EU patents. The European Patents Office has rejected the majority of applications for patents on algorithm-based methods. In the US, in contrast, we have seen increasing acceptance, despite 2014 case law that effectively tightened requirements for the patentability of algorithms.

May 2018 will see the coming into force in the EU of the General Data Protection Regulation (GDPR), a cross-sector regulation which, as well as incorporating new principles and rights, also strengthens requirements relating to automated decisions based on the use of algorithms. Banks will have to provide explanations of the logic of automated decisions and their main consequences for individuals, who will have the right to demand human intervention and appeal against decisions. As assets providing competitive advantages, algorithms form part of organisations' know-how, and must be protected. Complete disclosure of algorithms is therefore out of the question. There are some doubts that the European data protection authorities will have to clear up: What is the required scope or extent of the explanation? What precise form must human intervention take?

Algorithms could reproduce existing patterns of discrimination or reflect prejudices in society. The potential role of machines and algorithms in collusive practices and anticompetitive conduct is also in the spotlight of debate. For all these reasons, best practices are essential in the design and monitoring of algorithms. It is also essential for interpretation and application of the GDPR to maintain a balance between non-discrimination and innovation.

The GDPR places considerable stress on transparency, so black-box algorithms, for which we know the input and output but not how they work, will become a thing of the past. For banks, designing algorithms that are transparent, with mechanisms that can be explained, and at the same time effective, will pose a major challenge. The industry will have to make considerable efforts to be able to explain an algorithmic model that is both complex and effective, while upholding the protection of competitive advantages and avoiding copying.