

Press Release

***Big Data*: a major competitiveness challenge for French companies**

The National Academy of technologies of France (NATF)
invites French public authorities to intensively develop training schemes
in *Big Data* techniques

Big Data represents a change in paradigm such that public authorities would be advised to accompany the movement, notably in terms of education/training schemes and the major companies should be made more aware of what is at stake. In essence, this is the conclusion to the investigations and debates carried out at the Academy, embodied in an Academic Report* published recently, offering a full analysis of the “Opportunities vs. threats” of *Big Data* on French enterprises.

Big Data represents a revolution in data processing and computer science in general, from the technological progress to applications and practice. It is absolutely necessary to understand these new tools if we wish to face the global scale competition waged by Internet “stars”. **Gaining control over *Big Data* is a major challenge in terms of competitiveness for French companies** which must acquire new skills, both technical and cultural, as well as learning to benefit from “open source” technologies and services.

Big Data techniques constitute a breakthrough in data analysis and use of statistical methods for companies, based on a systemic approach and short reactive cycles. It also represents a way to build programmes and code via iterative loops, which differs a lot from the standard which isolates the knowledge extraction sequences from the applications phase (marketing targeting, for example). Iterative loop programming allows you to immediately confront detected motivations with a given situation and to assess their operational efficiency. *Big Data*, above any other consideration, relies on an experimental approach – although it still leaves room for conceptual and theoretical developments – and is encouraged by a change in the way we work, adopting more agile and collaborative methods.

Big Data also represents a novel way to build programmes, using massively parallel data-intensive, processing. *Big Data* is not just a collection of tools, but an alternative way to design algorithms. The difference lies in the distribution of the processing sequences over thousands or even tens of thousands of individual computer devices, with expected performance levels that relate to the enormous volumes of data handled and to the need to constantly upgrade the algorithms by built-in self-learning loops.

It is the considered opinion of NATF that *Big Data* is now a major challenge for French public authorities and for French companies at large. The observable changes in paradigm call for a better level of awareness and a strong accompaniment of the movement, notably in terms of training schemes. France is definitely lacking in qualified engineers with *Big Data* skills and training in distributed programming techniques and in handling protocols for very large data volumes and system programming using *open source* tools. ***Big Data* programming must be integrated into the numerous existing courses offered at Marketing and Commerce HE colleges and in Management schools**; MOOC model courses should also be prepared, *i.e.*, courses that can be accessible both by enterprises and made available to the public at large.

