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**Volume 8**

**Artificial Intelligence  
and Big Data**

*The Birth of a New Intelligence*

**Fernando lafrate**

**ISTE**

**WILEY**



## Artificial Intelligence and Big Data



**Advances in Information Systems Set**

coordinated by  
Camille Rosenthal-Sabroux

Volume 8

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## Preface

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This book follows on from a previous book, *From Big Data to Smart Data* [IAF 15], for which the original French title contained a subtitle: “For a connected world”. Today, we could add “without latency” to this title, as time has become the key word; it all revolves around acting faster and better than competitors in the digital environment, where information travels through the Internet at light speed.

Today more than ever before, time represents an “immaterial asset” with such a high added value (high-frequency trading operated by banks is an obvious example, I invite you to read Michael Lewis’ book, *Flash Boys: A Wall Street Revolt*<sup>1</sup> [LEW 14]). It seems obvious that a large part of our decisions and subsequent actions (personal or professional) are dependent on the digital world (which mixes information and algorithms for processing this information); imagine spending a day without your laptop, smartphone or tablet, and you will see the extent to which we have organized our lives around this “Digital Intelligence”. Although it does render us many services and

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<sup>1</sup> This book by Michael Lewis looks at the ins and outs of high-frequency trading (HFT): its history, means used, the stakes involved and so on.

increases our autonomy, it also accentuates our dependence and even addiction to these technologies (what a paradox!). This “new” world is structured around the Internet and requires companies to make decisions and act in a highly competitive environment, managing complex data in a matter of milliseconds (or less).

We live in a world where “customer experience” has become the key and our demand as consumers (for all types of goods, services or content: messaging, products, offers, information) is only growing. We demand to be “processed” in a relevant way, even as we navigate in this digital world “anonymously” (without formerly having used a personal authenticated account), which implies that other mechanisms must be in place to allow this “traceability”. Who was it who said that “the habit does not make the monk”? I fear that in this digitized world, our clothes in the Internet are the traces we leave (navigation, cookies, IP address, download history, etc.), voluntarily or not, allowing a digital identity to be built without our knowledge and therefore being one that we barely or do not have any control over!

All this information is interconnected, joined together as they are being generated, following the “keyring” principle (see Figure 1). They are then exploited by targeting, segmenting and through recommendation engine solutions, which have been implemented over the last decade or so and are based on software agents backed by rule engines (recommendation engines). In order to meet a contact’s expectation of “relevance”, “a company does not own a customer but merely the time that he chooses to devote”. During this time, which becomes the “grail” for companies to unveil vaults of imaginative ideas (but also much spending in terms of finances) to attract customers to their channels (website, call center, shops, etc.), they must be as “relevant” as possible.