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## **Editorial**

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Our lives have recently entered a new era witnessing an explosion and mutation in the field of information, technology and computer science. The volume and complexity of data available has dramatically grown over the last decade. We are surrounded by non-stop generated information; swimming over a vast sea of data. We are now living: the big data age. An age where the vast growing revolution of entering, and generating data is no longer a fashion, but a vital need for every community and society seeking to sustain its existence.

The last few years have witnessed a rapid growth of sheer amount of data created and communicated over the web. Massive amount of information are generated around the clock and profoundly affecting our daily life. Thus, it became of high importance to broadcast this special issue with the aim of publishing high-quality research dealing with the concerns and challenges encountered by broad array of firms in various fields, wide scope of industry and governments across the globe in dealing with means to process, capture, store, search, and share this data. Another domain is to investigate ways by which different organisations can expand their business intelligence activities and develop their data mining skills.

Much of the recent work on big data has focused on the quantity of data that is being manipulated and analysed in order to obtain the desired results, referred to as volume, and the speed by which that data travels is called velocity. However, the aspects of variety, veracity and value are equally important in dealing with heterogeneity, diversity, and knowledge management.

One of the obstacles regarding big data is the infrastructure's high costs. Hardware equipment is very expensive for most of the companies, even if cloud solutions are made possible. The reason behind this is that each big data system requires massive processing power, stable and complex network configurations.

However, with the adventure of experiencing big data comes the risk of trusting the data. Information needs to be trusted in order to be acted upon. This is where the challenge of information and big data governance appears. Data governance enables the organisations and governmental entities to take care of the data it has, get more value from that data, and make important aspects of that data visible to users in order to make big data analytics more effective. Business organisations need to operationalise governance standards using clear policies and procedures with metrics to govern the data they keep, how long they keep it for and how best to manage it.

How we handle the emergence of the age of big data is also critical; debates are already underway regarding big data ethics framework. Big data raises personal privacy concerns, and data protection, who owns our personal data and how the increased

presence and availability of more data influence our reputations. Examples of good and bad practices are emerging every day and in time they will guide regulation and legislation.

There is no doubt that big data is extremely valuable to produce productivity in businesses and many scientific disciplines, which give us a lot of opportunities to make great progresses in many fields. These opportunities should be applied in a means that guarantees the smooth shift from hindsight to foresight. The shift could be directed by implementing the DIKW notion, where the data is enriched with context to create information; to which meaning is supplied to create knowledge and finally integrating knowledge together to reach wisdom. Thus, as a community of scholars and researchers we should take full advantage of the scientific possibilities created by the availability of big data, sophisticated analytical tools to dig deeper and investigate more. Big data still aims in large part to deliver the right information to the right person at the right time in the right form, but is now able to do so in a significantly more sophisticated form.