

# Preface

Who can conceive of an organization that does not involve information and systems? Information created and used in organizations reflects all the intellectual property, competitive intelligence, business transactions and records, and other strategic, tactical, and operating data for businesses and people. Regardless of industry, people in organizations today need some understanding of how to utilize these technology and information resources. Nevertheless, information (or cognitive) overload has become such a problem as to become a cliché. This seems even more the case if people work in some form of “knowledge work,” a term coined by Peter Drucker referring to one who works primarily with information or one who develops and uses knowledge in their work.

According to the Gartner Group and Aberdeen Research, spending on information systems technologies exceeded the \$ 2.26 trillion mark per year worldwide in 2012. Yet research has shown that as much as 25–30% of information technology goes unused after purchase, and of those technologies used, only a fraction of the available features are utilized. Why is so much money wasted on technologies that are later shelved? Research has shown that the primary reasons for this disuse are that people frequently do too much work for the computer rather than the other way around—this is the so-called ease-of-use problem; and that once people are able to access their information, the information is often irrelevant or obsolete—the so-called usefulness problem.

The wasteful spending on technologies is indicative also of other insidious conditions: technologies are not helping people make better decisions, solve problems better, make better plans, or take better courses of action—leading to unbounded costs associated with lost productivity, lost strategic opportunities, tactical missteps, lost revenues, unnecessary expenses, and the myriad of other problems that result from this waste.

In recent years, there has been an explosion of disruptive technologies. Disruptive technologies are those that radically change a computing paradigm. Without the proper understanding of how to design, implement, or even utilize them, these are likely to fall short of their promise. An area of particular interest for our purposes includes the recent developments in semantic systems and Web 3.0 applications that can respond to situations and environments and events. These technologies do not

merely serve up passive displays of information for human consumers to digest, but rather they are intelligent systems that are capable of assisting human beings with the creation of meaning and drawing inferences to improve human performance.

We hope you will enjoy this volume on semantic technologies!

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Semantic Web

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