

# Chapter 1

## An Introduction to the Business Ontology

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### ABSTRACT

*Based on the long-standing work of the Global University Alliance and its members, ontology is introduced for the business domain. This ‘business ontology’ incorporates all the constructs that can be found in the most popular business standards and frameworks. The business ontology’s research and development journey is detailed; in terms of the how the research and findings came about, including the underlying academic design science that is informed by practitioners’ industrial experiences. It explains the value of ontology, from which the need for the business ontology can be justified and gives it presence in business practice. The paper concludes with a discussion on the ontology’s present status and future potential.*

### INTRODUCTION: THE NEED FOR ONTOLOGY

Various Standards bodies, Organizations, Business frameworks, methods, approaches and or concepts have their own vocabulary. Each of these vocabularies has its own definition of terms, like what is strategy or what is a process. For example, OMG, which is the software standard body that created the Business Process Model Notation (BPMN) standard, has various standards that all have a different shape/notation, description as well as semantic relations around a process/activity. BPMN has a different shape/notation, description as well as semantic relations; than does Case Management Model Notations (CMMN) or even Value Delivery Model Language (VDML). All of these respected standards are from the same software standard body, but lack standardization between them. The same lack of standardization applies to most other frameworks, methods or approaches we studied. For example, The Open Group Architecture Framework (TOGAF) and Archimate are from the same organization, The Open Group. They do not only have multiple different objects, the objects they actually do have in common have different descriptions, rules and even semantic relationships for them, although both address enterprise architecture. Addition-

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ally, TOGAF and Archimate have different models i.e. views as well as meta models. When an organization adapts both the Architecture Framework TOGAF and the architecture software tool 'Archimate' from the same organization i.e. The Open Group, the modeling and architecture work would result in a low degree of maturity, which was found to be surprising to many organizations, regardless of how much work or money and organization would invest into such a project, portfolio or program due to the inconsistencies mentioned above. According to existing maturity modeling concepts such as Capability Maturity Model (CMM), the maturity level of organizations combining TOGAF with Archimate would be level 1, which is siloed – the lowest level.

The examples above illustrate the lack of (and need for) standard business terms, definitions, semantic rules and concepts. These represent the starting point of the academic interest of the Global University Alliance (GUA) in this topic. The first GUA research in 2004 identified that the lack of repeatable standards around business concepts within business modeling, engineering and architecture concepts resulted in unnecessary siloes, lack of reusability and many other modeling issues such as low maturity in organizations. The need to identify relevant reusable/replicable patterns and develop concepts that can be used by any organization, both large and small, regardless of its products/services, activities or industry, became apparent. In September 2004. At this point the research and analysis around business ontology was formally initiated. This included:

- Outlining the research questions
- Analyzing patterns, both in terms of what doesn't work (anti-patterns) and what works, again and again (best practice), and what are unique practices applied by leading organizations (leading practices).
- Identifying commonly used meta-objects and models used within the repeatable patterns
- Developing artifacts and templates that increase the level of re-usability and replication.

The next section discusses how the context (i.e. collaboration between academia and industry) in which the ontology was developed. Section three, explains the value of ontology in a business context, including the theoretical foundations for the business domain ontology that is than presented. We conclude with a summary.

## **ACADEMIA INDUSTRY DESIGN: A COLLABORATIVE PROCESS BETWEEN RESEARCH AND INDUSTRY**

Arising from 5 years of previous work, the GUA was founded in 2004 as a non-profit organization and today (Nov, 2015) they are an international consortium consisting of over 450 universities, professors, lecturers and researchers. Their aim it is to provide a collaborative platform for academic research, analysis and development. As illustrated in Figure 1, they achieve this through defining clear research themes, with detailed research questions, where they analyze and study patterns, describe concepts with their findings. This again can lead to additional research questions/themes as well as the development of artifacts, which can then be used as reference content by practitioners and industry as a whole. The GUA collaborates with standards bodies such as:

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